# LOCAL GOVERNMENTS AND THE SHARING ECONOMY

A roadmap helping local governments across North America strategically engage with the sharing economy to foster more sustainable cities.

one earth

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# WHY THIS ROADMAP?

This roadmap is designed to help local governments across North America strategically engage with the Sharing Economy to foster more sustainable cities.

> “Local governments are faced with a tsunami of Sharing Economy activities.”

**In cities across North America, people are sharing tools and equipment, welcoming guests into spare rooms, eating food from people’s home kitchens, and paying for rides in the cars of people they don’t know.** Businesses are hosting others in their office space, industries are sharing transport of goods along their supply chains, and municipalities are offering public land for shared food production.

While Sharing has always been a part of city life – through public libraries and community spaces for example – the past few years have seen a significant revival and acceleration in sharing innovation. This has occurred across many sectors – such as mobility (bikesharing and carsharing), accommodation (Airbnb, couchsurfing), skills (TaskRabbit) and more – among individuals, institutions, businesses and communities.

As a result, local governments are faced with a 'tsunami' of Sharing Economy activities. Many are overwhelmed, with little time or opportunity to develop an effective response. This has led to pushback over concerns such as business competitiveness, jobs, health, safety and other risks and, in some instances, environmental impacts. Many cities have adopted a piecemeal and reactive approach to Sharing Economy activities that absorb scarce resources, rather than a more strategic one that efficiently advances urban sustainability.

This roadmap's focus on the intersection of the Sharing Economy, sustainability and local government is unique. While there are laudable efforts like Shareable's Sharing City Movement, its primary audience is local sharing activists and not local government.[1] Others like the National League of Cities who aim to help cities better understand and regulate the Sharing Economy should be commended, yet sustainability is not a primary focus.[2]

The next few years are critical for determining how cities respond to the Sharing Economy, however, uncertainty clouds the way. This roadmap offers four main tools as outlined below to help local governments address challenges and, perhaps more importantly, understand how to get ahead of the curve and harness the Sharing Economy to advance sustainability. It includes many examples and case studies from cities across North America, and some from the global community.

# Local Government and Sharing Economy Roadmap Tools

This roadmap provides four key tools for navigating the sharing economy:

## 1. Defining the Sharing Economy

Analyzes different definitions of the Sharing Economy and provides one tailored to local government.

## 2. Sustainability Filter and Sharing Economy Analysis

Describes a sustainability filter with six questions to help local governments prioritize involvement in the Sharing Economy, which is then used to analyze shared mobility, space, and goods and community sharing in depth, plus shared food and energy to a lighter degree. Sustainability impacts and recommendations for local governments are summarized.

## 3. Strategic Opportunities for Local Governments

Describes key strategic ways that local governments can enable the Sharing Economy to advance sustainable cities given limited resources. Examples include: enable community sharing; address data gaps; focus and align; lead by example; commit to equity; and develop systematic and integrated approaches over time.

## 4. Sharing Economy Resources

Provides a list of Sharing Economy experts and networks and recommended reading and a sample of local government materials including ordinances and bylaws.

## This roadmap does not:

- Celebrate the Sharing Economy without looking at its downside and challenges
- Analyze all Sharing Economy sectors and areas in detail
- Provide advice for other actors beyond local governments in North America
- Suggest exactly what cities should do – each city's choices are based on its unique priorities, interests and resources

# What is the Sharing Economy?

The Sharing Economy involves a spectrum of actors – from individuals to non-profit and for-profit entities – as well as those that are community and public sector based – that identify with Sharing Economy beliefs and traits in order to exchange a broad range of tangible and intangible assets. There are different forms of exchange including bartering, sharing, renting, trading, borrowing, lending, leasing and swapping. Likewise, the Sharing Economy features a range of assets including goods, services, time, capital, experiences and space.

The Sharing Economy aims to unlock the idling capacity found in the untapped social, economic, and environmental value of underutilized assets. It promotes access to goods instead of ownership in many, but not all, of its transactions.[3]

There are a number of estimates of the current scale of the Sharing Economy:

- Price Waterhouse Coopers estimates five sharing economy sectors alone could generate $335 bn in revenues between them by 2025.[4]
- Non-monetized transactions are also being measured, such as the rapid growth of Couchsurfing with 10 million plus members around the world.[5]
- Mapping of sharing activities at the neighbourhood scale through Shareable's Sharing Cities Map Jams are also noting a rapid growth.[6]

Technological, economic and social factors all drive the rapid growth of the Sharing Economy. Digital technologies and web platforms increase the ease and convenience of transactions while reducing costs and facilitating the connection of distributed networks of people and assets. Social networking supports reputation systems that build trust and share risk, allowing sharing among strangers in many cases.

Economic drivers include responses to major recessions including the 2008 financial crisis and growing income inequality. This leads to an increased interest in activities that supplement income and in access to goods and services rather than ownership due to lower costs. Decades of stimulation of economic growth and the consumer society has led to an accumulation of an abundance of idle capacity of many goods and services which can be shared and even become monetized.

Socially, the Sharing Economy is a lifestyle trend, particularly among millenials, for whom affordable living is a priority and social networking is an inherent behaviour.[7] The dense concentration of people in an increasingly urban society enables sharing with less friction while a desire or necessity for more independent lifestyles with part-time work attract people to the Sharing Economy. Altruistic and sustainability mindsets also drive some Sharing activity.

# A Critical Analysis of the Sharing Economy

Not unlike the printing press and the Internet, the Sharing Economy promises to evoke profound cultural and economic shifts. It spreads across almost every sector of the economy, challenging many traditional business and organizational models. It involves people from all walks of life, and is giving rise to powerful new lobby groups who may or may not align with sustainable city priorities. Which Sharing Economy actors and activities are advancing the public good and sustainability is a critical question.

By creating a definition of the Sharing Economy that includes five categories of actors, we explore the digitally enabled, for-profit companies and start-ups that are dominant in the mainstream media. But we also look beyond these actors as there is a lot more to the Sharing Economy than Airbnb and Uber and new, for-profit ventures. There are also non-profit, social enterprise / cooperative, community sharing innovators, and public sector entities that are part of the Sharing Economy.

Sharing Economy activities do not automatically advance urban sustainability. This roadmap analyzes which Sharing Economy activities advance living within ecological means first and then considers other sustainability dimensions – resilience, natural systems, equity, prosperous local economies and quality of life.

Local governments should care about the Sharing Economy because it could…

- Reduce ecological footprints of city inhabitants and wasteful practices
- Save local government money
- Create jobs and entrepreneurial opportunities
- Advance social connectivity and 'social capital'
- Spur social innovation

- Lower the cost of education, collaboration, and research, and
- Reduce our need to acquire material things to earn status or social distinction

But without thoughtful checks, it could also....

- Appear to reduce overall consumption while simply shifting it from one sector or activity to another
- Increase ecological and carbon footprints by growing the volume of vehicle traffic, travel, and consumer demand
- Erode the tax base as more economic transactions take place outside of spheres subject to accountability
- Negatively impact people not directly involved in Sharing Economy exchanges
- Push local wages and benefits down
- Erode the supply of affordable rental housing
- Exacerbate inequality as status is redefined by access to resources rather than ownership

This roadmap serves to support local governments in making strategic decisions that support those activities of the Sharing Economy that create better cities and that foster human and ecological wellbeing.

# WHO IS THIS ROADMAP FOR?

**This guide was created for the Urban Sustainability Directors Network – a network of over 130 cities and counties in USA and Canada fostering innovative, sustainable solutions in cities. The goal is to create a roadmap that is useful for local governments that are exploring how to engage with the Sharing Economy with an interest in advancing urban sustainability.**

**This roadmap can be useful to a range of other audiences:**

- City staff and local politicians seeking to understand the scope of the Sharing Economy and effective responses that align with city priorities;
- Sustainability practitioners and members of the Sharing Economy movement analyzing how various Sharing Economy activities impact ecological, social and economic goals in an integrated manner;
- Critics and supporters of the Sharing Economy alike interested in a critical yet rigorous analysis of the Sharing Economy in terms of sustainability impacts; and
- Sharing Economy innovators who are assessing the interests and roles of local government in the Sharing Economy.

# THREE KEY MESSAGES

The Sharing Economy is not inherently sustainable but local governments can help to make it more so.

Community Sharing is a promising area where local governments can play proactive, enabling roles.

Addressing data gaps is critical for understanding sustainability impacts on cities.

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# City Cases and Snapshots

# City Cases and Snapshots

| LOCATION | EXAMPLE | TYPE | PG |
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| **Austin, TX** | **City of Austin, Texas and Short-Term Rentals** | **Short Term Rental City Case** | **112** |
| Austin, TX | Comprehensive Plan | Equity | 64 |
| Avondale, AZ | Gangplank – cofunded and space provided by City of Avondale, AZ | Coworking | 120 |
| Belgium | CoWallonia – promotes eight coworking spaces | Coworking | 119 |
| Boston, MA | Zipcar | Carsharing | 74, 84 |
| Boston, MA | Bridj | Micro-transit | 75 |
| Boulder, CO | Silver Sage and Wild Sage - density bonuses to create below-market housing | Cohousing | 118 |
| Bloomington, IL | Eco-village | Cohousing | 118 |
| Brampton, ON | Partners in Project Green: Materials Exchange Network | Shared Goods | 142 |
| Buffalo, NY | Buffalo CarShare | Carsharing | 90 |
| Calgary, AB | Emergency Management Agency | Resilience | 60 |
| Calgary, AB | 2020 Sustainability Direction | Equity | 64 |
| Calgary, AB | Blocking Uber operations | Ridesourcing | 88 |
| Calgary, AB | University of Calgary - 3D Printers | Shared Goods | 138 |
| Calgary, AB | Calgary Tool Library | Community Sharing | 177 |
| California | Cubes and Crayons providing daycare | Shared Space | 107 |
| Chandler, AZ | Gangplank - cofunded by City of Chandler, AZ | Coworking case | 120 |
| Chicago, IL | Part of Rockefeller Foundation 100 Resilient Cities Initiative | Resilience | 60 |
| Chicago, IL | Emergency preparedness – role of social connectivity and social ties | Resilience | 61 |
| Chicago, IL | Incubating universal taxi hailing app | Ridesourcing | 75, 89 |
| Cleveland, OH | Cleveland Public Library - 3D Printers | Shared Goods | 138 |
| Coachella Valley, CA | Ensuring Short-Term Rental Compliance | Short Term Rental | 116 |
| Corner Brook, NL | Electric Bike Sharing Program | Bike Sharing | 73 |
| Dallas, TX | Transit partnered with Uber to integrate mobile ticketing app | Ridesourcing | 87 |
| Denver, CO | Climate Adaptation Plan | Resilience | 60 |
| Denver, CO | eGo CarShare | Carsharing | 90 |
| Detroit, MI | Detroit Bicycle Show and Swap Meet | Bike Sharing | 73 |
| Detroit, MI | Clothing and goods swap with DJ and Skillsharing | Community Swap | 166 |
| Deventer, Netherlands | Free rent for pre-qualified students in exchange for 30 hours companion service to elderly | Non-profit Co-Living | 106 |
| Edmonton, AB | Ridesourcing regulation | Shared Mobility | 89 |
| Edmonton, AB | Alberta Industrial Heartland - Industrial Symbiosis | Industrial Symbiosis | 136 |
| Eugene, OR | Web Resource for Sharing Assets | Civic Assets Sharing | 168 |
| Flagstaff, AZ | Be Resourceful | Community Sharing | 165, 168, 169 |
| Flagstaff, AZ | Fix It Clinics Community Sharing | Community Sharing | 169 |
| Greensburg, KS | Green building, decentralized wind power, walkable town centre initiatives after a tornado | Resilience | 60 |
| Halifax, NS | Dalhousie University - 3D Printers | Shared Goods | 138 |
| Halifax, NS | Halifax Tool Library | Community Sharing | 166, 177 |
| Hamilton, ON | Hamilton Tool Library | Shared Goods | 143 |
| **Hennepin County, MN** | **Coordinating Fix-It Clinics** | **Fix-it Clinic City Case** | **170–171, 213, 214** |
| Honolulu, HI | Clean Air Quality | Natural Resources | 62 |
| Houston, TX | Blocking Uber operations | Ridesourcing | 181–182 |

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| Ithaca, NY | Share Tompkins | Community Swap | 45 |
| Kalundborg, Denmark | Kalundborg Symbiosis | Industrial Symbiosis | 135 |
| Kansas City, MO | Home for Hackers; Hammerspace Workshop | Hacker Space | 139 |
| Kelowna, BC | Community Gardens | Community Sharing | 166 |
| London, UK | Santander Cycles | Municipal Bike Share | 73 |
| Los Angeles, CA | Cargomatic | Commercial Delivery Service | 75 |
| Los Angeles, CA | Partnership with Shared Use Mobility Center and California Air Resources Board to provide electric vehicle car share to low income populations | Carsharing | 91 |
| Los Angeles, CA | URBAN TxT | Hacker Space | 138 |
| Los Angeles, CA | Partnership with Waze traffic app to share data | Data Gap | 182, 212 |
| Madison, WI | Troy Gardens - density bonuses to create below-market housing | Cohousing | 118 |
| Marion County, OR | Intergovernmental Agreement for equipment and human resources sharing | Equipment and Human Resources Sharing | 145 |
| Metro Vancouver, BC | Agricultural Land Reserve | Natural Resources | 62 |
| Metro Vancouver, BC | Create Memories, Not Garbage Holiday Campaign to reduce waste | Awareness Campaign | 141 |
| Metro Vancouver, BC | MetroVancouverRecycles.org | Online B2B sharing platform | 141 |
| Milan, Italy | Created fund to promote coworking | Coworking | 119 |
| Milan, Italy | PRESSO | Shared Kitchen Space / Equipment | 154 |
| Minneapolis, MN | Fix-It Tech Clinics | Community Sharing | 165 |
| Minnesota | Nice Ride Minnesota Bike Share Program | Shared Mobility | 197 |
| Mississauga, ON | Partners in Project Green: Materials Exchange Network | Shared Goods | 142 |
| Montréal, QC | Part of Rockefeller Foundation 100 Resilient Cities Initiative | Resilience | 60 |
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| Montréal, QC | Civic Assets Project | Municipal Sharing | 146 |
| New Jersey | Providing low-interest loans for coworking space development | Coworking | 119 |
| New Orleans, LA | Part of Rockefeller Foundation 100 Resilient Cities Initiative | Resilience | 60 |
| New Orleans, LA | Emergency preparedness – role of social connectivity and social ties | Resilience | 61 |
| New York State | Law to enhance collaboration between government entities | Services Sharing | 145 |
| New York, NY | Citi Bike | Municipal Bike Share | 73 |
| New York, NY | Spinlister | P2P Bike Share | 73 |
| New York, NY | FlyWheel | Taxi Share | 74 |
| New York, NY | Via | Micro-transit | 74 |
| New York, NY | Incubating universal taxi hailing app | Ridesourcing | 74, 89 |
| New York, NY | Centre for Social Innovation | Coworking | 121 |
| New York, NY | Storefront | Popup Retail | 137 |
| Newfoundland | Newfoundland Rideshare on Facebook | Ridesharing | 74 |
| Newfoundland | HomeShare NL (Reduced rent for companion services to elderly) | Non-profit Home Sharing | 106 |
| Ottawa, ON | VRTUCAR | University Carsharing | 80 |
| Ottawa, ON | Ottawa Public Library - Imagine Space / 3D Printers | Shared Goods | 138 |
| Ontario | Ontario Green Belt | Natural Resources | 62 |
| Paris, France | Ministry of Industry partnered with private sector to create coworking spaces | Coworking | 119 |
| Region of Peel, ON | Partners in Project Green: Materials Exchange Network | Shared Goods | 142 |
| Pennsylvania | Yellow X | Taxi Share | 75 |

| LOCATION | EXAMPLE | TYPE | PG |
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| Philadelphia, PA | City joined Philly CarShare | Carsharing | 83 |
| Portland, OR | Climate Action Plan | Resilience / Equity | 60, 64, 167 |
| Portland, OR | Pilot for ride-sharing that requires data sharing | Ridesharing | 89, 184, 212 |
| **Portland, OR** | **City of Portland and Short-Term Rentals** | **Short Term Rental City Case** | **111, 211** |
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| Portland, OR | Sharing Assets Inventory | Civic Assets Sharing | 167, 168 |
| Portland, OR | North Portland Tool Library | Community Sharing | 169 |
| Portland, OR | Repair PDX | Fix-it Clinic | 169, 170 |
| Portland, OR | Required data sharing for car/ride share programs | Data Gap | 89, 184, 212 |
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| Richmond, VA | Gangplank | Coworking | 121 |
| San Antonio, TX | Blocking Uber operations | Ridesourcing | 89 |
| San Diego, CA | Draft ordinance for Short Term Vacation Rental / Home Sharing Regulations | Short Term Rental | 103 |
| San Francisco, CA | Spinlister | P2P Bike Share | 73 |
| San Francisco, CA | ScootNetworks | Scooter Share | 73 |
| San Francisco, CA | Lift Hero | Ridesourcing | 74 |
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| San Francisco, CA | Partnership with BayShare | Carsharing | 80 |
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| San Francisco, CA | Roost | Shared Storage Space | 109 |
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| Sault Ste. Marie, ON | Gangplank | Coworking | 121 |
| Seattle, WA | Seattle Urban Greenprint | Natural Resources | 63 |
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| Seattle, WA | Required user data-sharing from Car2Go pilot | Carsharing | 77, 185, 211 |
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| Sebastapol, CA | Petaluma Avenue Homes – density bonuses to create below-market housing | Cohousing | 118 |
| **Seoul, South Korea** | **Seoul's Sharing City Initiative** | **Strategic Approach to Sharing City Case** | **164, 200** |
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| Toronto, ON | Wellbeing indicators | Quality of Life | 67 |
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| Toronto, ON | Toronto Incubator | Shared Kitchen Space / Equipment | 154 |

| LOCATION | EXAMPLE | TYPE | PG |
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| Toronto, ON | Toronto Kitchen Library | Shared Kitchen Space / Equipment | 154 |
| Toronto, ON | Canada's first Urban-based commercial-scale wind turbine | Shared Energy | 160 |
| Toronto, ON | Toronto Tool Library in Toronto Public Library | Community Sharing | 174, 177 |
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| Tucson, AZ | Milagro Cohousing | Cohousing | 177 |
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| Vancouver, BC | Cohousing project | Cohousing | 105 |
| Vancouver, BC | Blocking Uber operations | Ridesourcing | 88 |
| Vancouver, BC | Changed bylaw to enable cohousing | Cohousing | 118, 121 |
| Vancouver, BC | The HiVE: Coworking in Vancouver | Coworking | 122 |
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| Vancouver, BC | The Vancouver Incubator Kitchen | Shared Kitchen Space / Equipment | 154 |
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| Vancouver, BC | Vancouver Tool Library | Community Sharing | 166, 177 |
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| Washington D.C. | Bridj | Micro-transit | 75 |
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| Whitehorse, YT | Ride sharing platform on Kijiji | Shared Mobility | 74 |
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# OVERVIEW

This overview provides a summary of the roadmap content, as well as key findings and recommendations.

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For the first time in human history, the majority of people live in urban areas and so it is critical to understand the role cities play in advancing sustainability. The Sharing Economy is growing incredibly fast and has become the growth sector to invest in.[8] For cities that want to advance sustainability, understanding and effectively responding to the Sharing Economy has become a necessity.

As the Sharing Economy has grown and evolved in North America, it has come under increasing criticism for failing to realize its initial promises – reducing overconsumption, enhancing social connectivity and community, and more fairly distributing economic value. Critics blame economic self-interest of the increasingly dominant for-profit innovators, and call for greater emphasis on cooperative and community-oriented models; however, the reality is more complex.

Juliet Schor, Professor of Sociology at Boston College, has been analyzing the Sharing Economy for a number of years and concludes that it is at a "critical juncture in which users organizing for fair treatment, demands for eco-accountability, and attention to whether human connections are strengthened through these technologies can make a critical difference in realizing the potential of the sharing model."[9] Local government, she stipulates, have a critical role to play:

"Outside the US, the impetus to share in transportation, housing, foods, and goods is more integrally tied to city-level goals of carbon emission reduction, informational transparency and genuine democracy. By embedding sharing practices within those larger municipal level movements, the likelihood that the sharing movement can achieve its stated goals is greater."

An initial scan of local government activity across North America early in this project revealed that a number of municipalities are mirroring their international counterparts and using the Sharing Economy to advance various sustainable

> An initial scan of local government activity across North America early in this project revealed that a number of municipalities are mirroring their international counterparts and using the Sharing Economy to advance various sustainable city priorities. Yet there is also tremendous untapped potential.

city priorities. Their efforts are featured in this roadmap and we draw upon their experiences to generate lessons and recommendations for others.

Yet there is also tremendous untapped potential. A lack of clarity about which Sharing activities genuinely advance sustainability goals confuses and inhibits the most effective actions. The pace of growth of the Sharing Economy favours predominantly piecemeal and reactive responses by local government. Many Sharing activities and local government roles that could advance sustainability are overlooked.

This roadmap advises local governments about ways to consciously tap into the Sharing Economy to not only realize its initial promise, but to do so in a manner that advances local sustainability goals. We also recognize that the Sharing Economy is a dynamic and evolving space and that cities make decisions based on their own priorities and resources.

# Approach and Context

One Earth developed this roadmap after a year-long engagement with cities across North America. An Advisory Committee comprised of local government representatives of the Urban Sustainability Directors Network (USDN)[10] was consulted regularly. Other advisors included those from the Sustainable Consumption Research and Action Initiative (SCORAI), Shareable, and the Center for a New American Dream, as well as Sharing Economy experts such as April Rinne and Juliet Schor. The broader USDN membership was also engaged in various ways, including: a workshop session during the USDN's 2014 Annual Meeting led by the City of Vancouver; a USDN Sustainable Consumption User Group conference call; and sessions at the workshop, The Role of Cities in Advancing Sustainable Consumption, co-organized by USDN, SCORAI and the City of Eugene in the fall of 2014.

The roadmap is informed by extensive secondary research supplemented by interviews with city staff. Critical analysis of claims of Sharing Economy impacts was undertaken, while taking into consideration the motivations and funding of the researchers and authors of the sources reviewed.

Four Sharing Economy sectors were analyzed in depth – shared mobility, shared spaces, shared goods and community sharing – with some initial findings in shared food and shared energy. The in-depth areas were chosen because they ranked highly across the following criteria: prevalence in the Sharing Economy, interest by local governments, high number of links to city priorities, potential for local government role and impact, and some opportunities for cutting edge, strategic actions by municipal leaders.

The LGSE project is part of a broader conversation among USDN members about advancing sustainable consumption.

## Sustainable Consumption: A Common Definition

The use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials, as well as emissions of waste and pollutants, over the life cycle of the service or product so as not to jeopardize the needs of future generations. – UN Commission on Sustainable Development.[11]

While a relatively new topic for USDN cities, there is a growing interest in building capacity to address sustainable consumption. There is a USDN Sustainable Consumption User Group and two relevant USDN Innovation Fund projects: 1) a report on measuring sustainable consumption[12] and 2) the October 2014 'break-through' convening workshop held in the City of Eugene mentioned above.[13] At this workshop, many participants experienced a fundamental shift towards a more holistic concept of sustainable consumption that goes beyond the resource conservation frameworks that typically drive municipal efforts. This was a convening of municipal sustainability staff, international researchers, policy experts, and NGO representatives to advance the topic of sustainable consumption from the conceptual phase toward actionable programs and policies within a municipal government context.

The outcomes of this convening are heavily informing the ongoing work with Sustainable Consumption aimed at delivering capacity building workshops for USDN members and releasing a toolkit in 2016. One Earth led the Community Sharing working group that emerged from the Eugene workshop and a project on communicating sustainable consumption. One of the workshop outcomes, the Eugene Memorandum: The Role of Cities in Advancing Sustainable Consumption outlines the consensus achieved about sustainable consumption and guiding principles for local government action.[14] This roadmap applies many of the core elements of the Eugene Memo into the sustainability filter.

## Roadmap Content by Chapter

The roadmap begins in **Chapter 1** by presenting a definition of the Sharing Economy tailored to local government based on our analysis of many existing definitions and our consultations with this project's advisors. Two categories of the Sharing Economy actors are highlighted as having particular relevance to local governments and advancing urban sustainability – community sharing and public sector organizations.

In **Chapter 2** we present the sustainability filter that local governments can use to determine whether Sharing Economy activities advance multiple facets of urban sustainability. Sustainability is defined as advancing quality of life for all equitably while living within ecological means.

**The sustainability filter has six guiding questions that address the ecological, social and economic dimensions of sustainability:**

1. **Living within ecological means**
   Does the Sharing Economy activity support absolute reductions in energy and materials flows to live within our ecological means?
2. **Resilience**
   Does the Sharing Economy activity enhance resilience and climate adaptation?
3. **Natural systems**
   Does the Sharing Economy activity protect and restore natural systems?
4. **Equity**
   Does the Sharing Economy activity advance equity and social inclusion and embrace diversity?
5. **Prosperous local economies**
   Does the Sharing Economy activity advance economic vitality and diversity, a level of self-reliance, and decent jobs?
6. **Quality of life**
   Does the Sharing Economy enhance social connectivity and wellbeing for all?

In **Chapter 3** the sustainability filter is applied to five sectors of the Sharing Economy of greatest interest to our local government project advisors. Shared mobility, spaces and goods are covered in the greatest depth, and then shared food and energy are given an initial analysis with less detail. Sustainability impacts across all areas of the filter are summarized first and then we provide recommendations for advancing urban sustainability, including some that advise local governments on how to get ahead of the curve.

**Chapter 4** addresses Community Sharing, which was identified as a priority area for local government involvement to advance sustainability. Community Sharing innovators are focused at local or neighbourhood scales and currently use information technology more modestly while placing more emphasis on in-person connections and meeting community needs and sustainability goals. Non-monetized transactions dominate. This chapter explores why local governments should care about Community Sharing, as well as how to enable this type of sharing in order to advance sustainability in effective, cost-efficient ways and then measure impacts on city priorities. Finally, recommendations are provided for how local governments can help scale up the actions of Community Sharing innovators.

**Chapter 5** highlights opportunities for local governments to take strategic action in their engagement with the Sharing Economy given limited time and resources. Strategies include: how local governments can focus and align their involvement, lead by example, play enabling roles matching the spectrum of Sharing Economy actors, advance equity, and pursue more systematic and integrated approaches over time.

**Chapter 6** highlights the critical importance of addressing data gaps in order to help local governments understand the impacts of Sharing Economy activities on city priorities. The current data access situation is reviewed and recommendations for further discussion and exploration are provided.

**Chapter 7** provides additional resources including the identification of key Sharing Economy readings and networks.

In **Chapter 8** the roadmap concludes with some final thoughts and next steps, followed by appendices of relevant local government materials such as sample ordinances, surveys and legislation.

## Recommendation Highlights

This section summarizes the key recommendations from this Roadmap for local government to strategically engage with the Sharing Economy in order to advance sustainability. These recommendations are based upon detailed analysis using the roadmap's sustainability filter, which can be found in Chapter 2, as well as additional research and consultations with project advisors.

# SHARED MOBILITY

**Shared mobility is arguably the most rapidly growing and evolving sector of the Sharing Economy. One-way and peer-to-peer carsharing, as well as ridesourcing, are amongst the many new entrants in the short-term, as-needed shared transportation milieu. Is shared mobility an opportunity or a distraction on our journey towards more sustainable and equitable transportation systems?**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- Cultivate a shift toward **integrated mobility planning** that considers a suite of mobility options, with public transportation as its foundation, together with land use planning in order to foster car reduced (and free) lifestyles.
- Facilitate the **expansion of ridesourcing and carsharing into suburban municipalities** in order to fill transit gaps and foster first/last mile integration.
- Explore the use of **ride-splitting** (e.g.UberPool and LyftLine) to scale carpooling, particularly for commuting to work.
- Support the **expansion of electric vehicles in carsharing fleets** by providing grants for EV purchase, public charging stations, and favouring EVs in municipal fleets.
- **Address multiple barriers to the participation of low-income people and vulnerable populations** in shared mobility and explore partnerships between public, non-profit & private actors.

## WHAT TO WATCH OUT FOR:

- **The rebound effect –** for example, people purchasing new cars in order to rent them out through peer-to-peer carsharing companies like RelayRides and therefore adding more cars to the road rather than reducing car ownership and use.
- **Ridesourcing in downtown locations** as there are indications that this is replacing transit, walking and cycling trips and inducing new vehicle trips.
- **High-level conclusions that hide more nuanced findings,** e.g. that carsharing users both increase and decrease their transit usage.
- **Getting distracted –** for example, the debate about whether ridesourcing and taxis are more efficient is less important than shifting people into more sustainable modes.

## TO EXPLORE FURTHER:

See Chapter 3a: Shared Mobility

# SHARED SPACES

**Shared spaces include the sharing of living space for short-term rentals (e.g. Airbnb), storage, and parking, as well as permanent housing options such as cooperatives, co-living and cohousing. There are also co-working sites that allow independent workers or employees (while traveling) to share workspaces, office services and equipment.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- **Thoughtfully regulate short-term rentals**, especially in communities with low vacancy rates, in order to safeguard equity and housing affordability, and to mitigate possible impacts on neighbours, community character, and city resources.
- **Support cooperative housing** directly or by lobbying higher levels of government, and/or by changing local legislation.
- **Encourage cohousing** that locates near transit, emphasizes reducing waste and carbon emissions, and cultivates pro-sustainability behaviours of residents.
- **Promote financial instruments that permit co-ownership.**
- **Explore how to fuse co-working with libraries and business incubators,** prioritizing those whose client businesses show transformative sustainability potential.

## WHAT TO WATCH OUT FOR:

- **The rebound effect –** by providing cheaper accommodation short-term rentals may induce more flying and related consumption, increasing carbon emissions; some people are purchasing accommodations for the sole purpose of earning income through short-term rentals.
- The impact of short-term rentals on **reducing affordable housing supply** in neighbourhoods with low vacancy rates.
- **Shared personal storage and parking spaces** that offer little or even negative sustainability gains by supporting accumulation of goods and greater car use.
- **Shared space options like co-living**, which may not live up to their sustainability promise; monitoring and evaluation is required here.
- **Intervening in areas of the Sharing Economy that are thriving without government support** unless there is specific public good purpose e.g. co-working.

## TO EXPLORE FURTHER:

See Chapter 3b: Shared Spaces

# SHARED GOODS

**Shared goods refers to the exchange, sale or loaning of new or used items among different actors. Equipment, toys, tools, clothing, furniture, appliances, books and electronics are examples of items shared. Goods sharing can take the form of peer-to-peer or business-to-peer transactions – often mediated by online platforms such as eBay – or sharing among businesses or municipalities through platforms like Munirent.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- Adopt relevant recommendations from **Chapter 4 on Community Sharing.**
- Promote the concept of **access over ownership** of goods through targeted policies and other support of Sharing Economy activities.
- Shift from **waste management to materials management** and prioritize support for **Sharing Economy activities at the top of the waste hierarchy (eliminate, reduce, reuse)** that diminish material and energy **throughput the most**.
- **Support Business-to-Business exchange** through initiating and / or supporting online platforms and Industrial Symbiosis pilot projects, including those where local government provides space or acts as an anchor partner.
- **Demonstrate by example** and share equipment and goods with other municipalities and stakeholders.
- **Inventory civic assets** and use them to support Sharing Economy activities that advance sustainability goals; assets might include community centres, parks, office space, and municipal staff expertise.
- Commit to goals and actions for reducing the city's **ecological footprint** and measure **consumption-based accounting of emissions** in climate action plans.

## WHAT TO WATCH OUT FOR:

- **Prioritizing recycling and reusing** – focus instead on waste prevention, materials management and resource reductions.
- Focusing on household goods and **missing out on opportunities to share goods among municipalities, businesses and institutions.**
- **Overemphasizing sharing criteria in purchasing agreements** instead of developing a more fundamental systemic approach to sustainable purchasing.
- **Triggering rebound effects** – avoid investing savings from sharing goods in more goods; instead encourage reinvestment into more sustainable practices and programs.

## TO EXPLORE FURTHER:

See Chapter 3c: Shared Goods

# SHARED FOOD

**Shared Food is the sharing of productive public and private land, idle food, meals, kitchen space and equipment, and farm harvests through digital and in-person means. It involves individuals, farmers, businesses, local government, grassroots organizations, non-profits and cooperatives.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- **Encourage food production in public spaces** by allocating public land, removing zoning barriers, and providing promotion and funding for community organizers.
- **Promote community supported food production** such as CSAs and consider purchasing farm shares to meet municipal needs.
- **Offer landsharing** of backyards, farms and other viable land for food growing as an in-house service or provide promotion or grants to non-profits that provide the service.
- Promote, provide grants and/or access to publicly owned spaces to non-profits for **shared kitchen space and/or equipment**.
- **Provide seed funding for local mealsharing initiatives** that target people having difficulty cooking for themselves and/or focused on organic and/or local food.

## WHAT TO WATCH OUT FOR:

- Violations of zoning and health and safety regulations, particularly for meal sharing activities in private homes; regulations may need to be updated.

## TO EXPLORE FURTHER:

See Chapter 3d: Shared Food

# SHARED ENERGY

**Shared Energy uses digital technologies and web platforms to enable producers to collaborate directly with customers and investors for the creation, storage, and sharing primarily of renewable energy (solar and wind mainly) but also for energy efficiency. A growing number of peer-to-peer models expand participation to those normally excluded by cost or structural barriers.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- Partner with local businesses or non-profits to create or enable **peer-to-peer shared renewable energy marketplaces**.
- Stimulate the renewable energy market through **local government purchasing power or by buying shares in local energy cooperatives**.
- Create municipally owned **renewable or district energy projects**.

## WHAT TO WATCH OUT FOR:

- **Missing out on the opportunity** Shared Energy presents to help cities transition to more renewable energy use and meet deep carbon reduction targets.

## TO EXPLORE FURTHER:

See Chapter 3e: Shared Energy

# COMMUNITY SHARING

**Community sharing innovators offer hope to amplify the best aspects of the Sharing Economy – many explicitly adopt practices that enhance a range of ecological, social and economy sustainability goals. These actors are a diverse set of individuals and organizations focused at more local scales that currently use digital technology more modestly and emphasize in-person connection. Non-monetized transactions are more dominant.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- **Prioritize support for Community Sharing innovators** who promote reuse, borrowing, swapping, repair and maintenance of goods, combined with educational efforts to promote buying less and smarter.
- Enable Community Sharing by **supporting a sharing inventory and web page, promoting events and ideas, and acting as a facilitator and connector.**
- Consider incubating and/or coordinating **Fix-It Clinics.**
- To **scale Community Sharing**, shift to community-based behaviour change, support expansion into new neighborhoods, help innovators get better organized, and provide underutilized public spaces and municipal infrastructure.
- **Consider adopting a more systematic, on-line approach to sharing spaces** for Community Sharing innovators modelled on the UK Space for Growth programme.

## WHAT TO WATCH OUT FOR:

- **Missing out on the opportunity Community Sharing presents** to foster healthy, connected communities while promoting other goals such as more affordable living, reducing eco-footprints, and supporting business and workforce development.
- **Getting too fixated on understanding the impacts on city priorities upfront;** instead tie them into pilot project efforts and/or engage innovators to help measure impacts.

## TO EXPLORE FURTHER:

See Chapter 4: Community Sharing

# ADDRESSING DATA GAPS

**There is a major gap in understanding by local governments about how the Sharing Economy impacts city priorities, which inhibits interest and innovation by cities and somewhat constrains independent research. Sharing Economy businesses are generally reluctant to share data citing concerns over privacy and competition, although there are some exceptions.**

## KEY RECOMMENDATIONS TO ADVANCE URBAN SUSTAINABILITY:

- **Prioritize Sharing Economy research** and forge partnerships to fund this research.
- **Require data sharing when negotiating regulatory agreements**.
- Continue to rely on **data scraping** as an interim measure where legally defensible.[15]
- **Explore giving preferential access** to city markets for Sharing Economy businesses that share relevant data and/or designing local "carrot and stick" systems.
- **Participate in, and ideally, cultivate, collaborations** of public and private sectors to discuss Sharing Economy topics, including data sharing.

## WHAT TO WATCH OUT FOR:

- Stifling positive innovation by expecting Sharing Economy businesses to shoulder too much of the burden for data sharing or research, particularly start-ups.

## TO EXPLORE FURTHER:

See Chapter 5: Addressing Data Gaps

1 http://www.shareable.net/sharing-cities

2 http://www.nlc.org/find-city-solutions/city-solutions-and-applied-research/urban-innovation/sharing-economy/cities-the-sharing-economy-and-whats-next

3 Resources:

Rachel Botsman and Roo Rogers. *What's Mine Is Yours: The Rise of Collaborative Consumption.* (New York: HarperCollins Publications, 2010).

Lisa Gansky. *The Mesh: Why the Future of Business is Sharing.* (New York: Penguin Press, 2010).

Bryan Walsh. "The Sharing Project Bryan Walsh 10 Ideas That Will Change the World: Today's Smart Choice: Don't Own. Share." Time Magazine, 17 March 2011. http://content.time.com/time/specials/packages/article/0,28804,2059521_2059717_2059710,00.html

4 http://www.theneweconomy.com/business/the-sharing-economy-shakes-up-traditional-business-models

5 Sadhu A. Johnston, Steven S. Nicholas and Julia Parzen. *The Guide to Greening Cities* (Washington DC: Island Press, 2013).

6 Rachel Botsman and Roo Rogers. *What's Mine Is Yours: The Rise of Collaborative Consumption.* (New York: HarperCollins Publications, 2010).

7 http://www.forbes.com/sites/homaycotte/2015/05/05/millennials-are-driving-the-sharing-economy-and-so-is-big-data/

8 http://venturebeat.com/2015/06/04/the-sharing-economy-has-created-17-billion-dollar-companies-and-10-unicorns/

9 http://www.greattransition.org/publication/debating-the-sharing-economy

10 The USDN is a peer-to-peer learning exchange among municipal sustainability directors to share ideas and experiences.

11 https://sustainabledevelopment.un.org/topics/sustainableconsumptionandproduction

12 Cascadia Consulting Group, *Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities for the Urban Sustainability Directors Network* (2015) – http://usdn.org/uploads/cms/documents/usdn_measuring_consumption_project_files.zip

13 http://usdn.org/uploads/cms/documents/the_role_of_cities_in_advancing_sustainable_consumption_convening_products.zip

14 http://sspp.proquest.com/archives/vol11iss1/editorial.eugene.html

15 Data scraping is a technique in which a computer program extracts data from publicly available, human-readable output sourced from another program. In this case the program is used to inform a Sharing Economy web platform.

# 1.

# DEFINING THE SHARING ECONOMY

The *Sharing Economy* is a widely used but contested term – not just in terms of what it means, but who should define it – grassroots organizations, journalists, academics, CEOs of "sharing" businesses? Not surprisingly, there are many different (and sometimes contradictory) definitions of the Sharing Economy.

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Defining the Sharing Economy is so challenging that Juliet Schor, Professor of Sociology at Boston College, concluded the following after three years of study:

> *"Coming up with a solid definition of the Sharing Economy that reflects common usage is nearly impossible. There is great diversity among activities as well as baffling boundaries drawn by participants."*[1]

Juliet Schor, Debating the Sharing Economy
http://greattransition.org/publication/debating-the-sharing-economy

How can local governments make sense of the Sharing Economy given this formidable semantic challenge?

We believe that a useful definition of the Sharing Economy for local government must:

- distinguish between what the Sharing Economy should be versus how it actually operates;
- include categories relevant to local government; and
- resist being so expansive that virtually anything fits within it—including the entire public sector and every shared exchange of assets.

## 1.1 SHARING ECONOMY DEFINITION FOR THE LGSE ROADMAP

For the Local Governments and Sharing Economy roadmap, we define the Sharing Economy as a spectrum of actors (non-profit to social enterprise to for-profit) that identify with Sharing Economy beliefs and traits and buy, sell, rent, loan, borrow, trade, swap and barter a broad range of tangible and intangible assets including goods, time, and space. Information technologies and web platforms support necessary trust and reciprocity, and dramatically lower transaction costs.

Sharing Economy actors also include community sharing innovators and public sector entities that align with Sharing Economy characteristics, but with key differences: community sharing innovators focus at local and neighbourhood scales, use information technologies to a more modest degree, and emphasize non-monetized transactions. Public sector organizations act independently or in partnership with other Sharing Economy actors to advance the public interest.

All five categories of actors self-identify with Sharing Economy beliefs and traits, or are identified as aligning with the Sharing Economy by the media or other parties. While beliefs are aspirational and vary greatly across these actors, traits of the Sharing Economy are distinguishable characteristics and include:

- Utilizing information technologies to varying degrees, ranging from essential use by for-profit actors to more modest and incidental use by community sharing innovators;

- Making use of the idling capacity of assets and promoting access over ownership for many, but not all, Sharing Economy transactions;
- Connecting dispersed networks of people and/or assets through information technology and/or in-person meetings and events;
- Providing opportunity for trust building, reciprocity and social connectivity to varying degrees; community sharing innovators emphasize this component the most; and
- Embracing the commons to varying degrees ranging, for example, from jointly used proprietary software or goods to those that are "open source" and freely available to all.

## 1.2 A RANGE OF SHARING ECONOMY DEFINITIONS AND VIEWS

Differences in definitions and views about the Sharing Economy stem from at least two key factors:

1. Variations in values and beliefs about ideal ways to organize human life, and the promise of the Sharing Economy to realize those ideals.
2. Perspectives of what the Sharing Economy should be versus how the Sharing Economy actually operates.

In this Chapter, we provide a sampling of some definitions and categorizations of the Sharing Economy, with our comments in terms of their value to a local government definition. Depending on which Sharing Economy actor you're engaging with, the Sharing Economy can advance a range of beliefs.

# RANGE OF SHARING ECONOMY BELIEFS

Creates a windfall of new business opportunities, because it significantly expands opportunities to sell new goods and services.

Is key to reducing our consumption and environmental footprint, because it reduces the need to make new goods and directs consumer demand to rented or used goods.

Helps people save time and money.

Helps people exchange valuable goods and services without spending any money at all.

Makes it easier and cheaper for people to fly all over the world.

Makes our vacations more environmentally friendly and fosters genuine connections with locals.

Means we don't have to spend time getting to know people or trading information first to exchange goods and services with them.

Creates new opportunities for trusting relationships between people exchanging items.

Opens up possibilities to tap a potentially huge, affordable, and more flexible pool of labour that doesn't require contracts or benefits.

Creates rewarding, flexible new jobs and livelihoods and opportunities for 'micro-entrepreneurs'.

Offers a wealth of opportunities for anyone to make money.

Offers financially stressed people a way to keep their heads above water.

Makes it easier to impress by looking like we can afford to own expensive items or access exclusive experiences or services.

Means people can get the same benefits of owning stuff by accessing it occasionally, and contributing to a less materialistic society.

# SAMPLE SHARING ECONOMY DEFINITIONS AND COMMENTS

## Making Sense of the UK Collaborative Economy (Nesta, 2014)[2]

Five Collaborative Economy Traits:

1. Enabled by internet technologies;
2. Connecting distributed networks of people and/or assets;
3. Making use of the idling capacity of tangible and intangible assets;
4. Encouraging meaningful interactions and trust;
5. Embracing openness, inclusivity and the commons.

Comment

(Value) the list is simple and spurred the creation of the Community Sharing Working Group. (Shortcomings): Point 1 debated – is all valuable sharing internet enabled? Point 2 not easily understood. Point 3 debated – does all sharing use idle assets? Points 4 and 5 more aspirational than actual, particularly in sharing that is exclusively digitally enabled.

## Collaborative Economy Honeycomb Graphic created by Jeremiah Owyang[3]

**"Many are excited about the new collaborative economy, where people use common technologies to get what they need from each other. This has created disruptions for some industries, but overall, holds much business opportunity for progressive companies."[4] The original Honeycomb graphic [of the Collaborative Economy](May 2014) contained six families of industries that are being impacted by P2P [Peer-to-Peer]commerce, including: 1) Goods, 2) Food, 3) Services, 4) Transportation, 5) Space, and 6) Money. Jeremiah felt obliged to update the graphic (Dec 2014), as it's quickly expanded into many other industries and verticals. While many of these startups have been around for years, the new Honeycomb contains additional startups in the six original hexes, as well as noting expansion into these areas:**

1. **Health & Wellness: For example, Helparound.co enables P2P diabetes care, including sharing of insulin and pumps.**
2. **Logistics: For example, Postmates enables the final mile of delivery, and Roost enables P2P home storage.**
3. **Corporate: Now corporations can have their own Uber-like experience with LocalMotion or build their own Airbnb with Near-me.**
4. **Utilities: Power sharing with Vandebron, crowdfunded solar with Solar Mosaic, and Wi-Fi sharing with Fon.**
5. **Municipal: Cities are sharing street cleaning vehicles on Munirent, and public bike systems are heavily funded with Velib.**
6. **Learning: Numerous startups enable students to share books on Chegg, as well as online training led by instructors and peers.**

Comment

(Value): Shows the breadth of the Sharing Economy with relatively distinct families and classes; linked to a searchable on-line Mesh Directory[5] of start-up examples. (Shortcomings): The Mesh definition is almost purely about technology; some start-up examples are traditional businesses simply using internet technology to sell assets more effectively; no filter for relevance of start-up examples to local government; misses Community Sharing; the Municipal family is too narrow.

## The Sharing Project

**"We set out to understand what sharing means to people. Results from our interviews and focus groups indicated that people define sharing to include lending & borrowing, swapping, trading and more...The term most associated with sharing was donating. This echoes sentiments that we heard in our focus groups with Sharers, where sharing was often associated with the act of giving to others. Older survey respondents reported a stronger association between sharing and donating than younger survey respondents did. Respondents' strong association between sharing and communal resources and public goods may stem from what they are currently involved in sharing. Physical Media (ie: books) and Space (ie: parks and community centres) topped the list of what people are currently sharing."**

Comment

(Value): This report measures people's interest in sharing at a municipal scale, focuses on the opportunity for social connection and sharing with people we know, emphasizes the value of public goods, and makes a useful distinction between sharing, donating, lending, and renting and held perceptions of each term. Shortcomings: The survey and research was conducted as the Sharing Economy was emerging so many respondents were not familiar with or using the new sharing enterprises and online platforms.

## Rachel Botsman, "What's Mine is Yours" (2010)

Definition: An economic model based on sharing underutilized assets from spaces to skills to stuff for monetary or non-monetary benefits. It is largely focused on Peer to Peer (P2P) marketplaces and includes three categories: Collaborative Lifestyles (e.g. Airbnb or TaskRabbit); Product Service Systems (e.g. Car2Go or Netflix) and Redistribution Markets (e.g. Craigslist or Neighborhood Swaps).

Comment

(Value): the emphasis on underutilized assets fits well with urban sustainability, as does the inclusion of non-monetary sharing. (Shortcomings): not always easy to determine which of the three categories a specific Sharing Economy example fits into; focusing the Sharing Economy on P2P transactions only – as distinct from the Peer Economy and Collaborative Economy – is challenging and time consuming to understand with questionable relevance.

## Juliet Schor – Debating the Sharing Economy – Great Transition Initiative[6]

Notes the practice of defining the Sharing Economy in the following way: Self-definition by the platforms and the press who together define who is in and who is out of the Sharing Economy.

"The operation and the long-term impacts of [Sharing Economy]platforms are shaped by both their market orientation (for-profit vs. non-profit) and market structure (peer-to-peer vs. business-to-peer). These dimensions shape the platforms' business models, logics of exchange, and potential for disrupting conventional businesses." She provides examples for each combination in a 2x2 matrix:

- Peer to peer / non-profit – Food swaps, time banks
- Peer to peer / for-profit – Relay Rides, Airbnb
- Business to peer / non-profit – Makerspaces
- Business to peer / for-profit – Zipcar

Schor also highlights four functional categories that emerged over time (note: there are non-sharing examples in these categories such as yard sales under the category: 'Recirculation of goods'):

- Recirculation of goods (e.g. eBay, CraigsList);
- Increased utilization of durable assets (e.g. Zipcar, Airbnb);
- Exchange of services, (e.g. time banks), and;
- Sharing of productive assets (e.g. cooperatives).

It is a new sharing Economy because sharing often occurs amongst total strangers, is based on crowd sourced information and the internet has lowered the cost and increased the convenience of sharing, allowing it to scale.

Comment

(Value): categories begin to bring in sustainability concepts such as increasing the utilization of durable goods; the distinction between old vs. new Sharing Economy is useful to answer the question: aren't we already sharing? (Shortcomings): leaving the Sharing Economy loosely defined does not help local governments with the semantic challenge. Peer-to-peer and Business-to-peer distinctions did not resonate with local governments advising this roadmap – they preferred a focus on a spectrum of Sharing Economy actors (for-profit, non-profit, community sharing etc.).

## Neal Gorenflo – Shareable[7]

Neal distinguishes two types of sharing:

- **Transactional sharing:** typically profit-driven, and primarily about the efficient operation of existing systems, resource efficiency and cost sharing but does not impact existing power structures.
- **Transformational sharing:** the same characteristics as transactional but also involves a shift in power and social relations. Shared ownership models that more equitably distribute economic value, strengthen communities, and reduce ecological footprints are favoured e.g. gift economy, social enterprise and non-profit models.

Comment

(Value): promotes critical thinking about the Sharing Economy and raises many points relevant to sustainability; draws attention to alternative ownership models and non-monetized sharing; and is useful for exploring divisions within the Sharing Economy. (Shortcomings): presented in a manner too radical for many local governments to absorb; appears to rule out Sharing actors like for-profit carsharing that link with key city priorities; is an outcome-based defintion so it is not operational for cities; categorization can only be determined after the fact whether an activity is transactional or transformational – needs clear criteria for distinguishing between the two categories.

## 1.3
## SHARING ECONOMY ACTORS

The definition of the Sharing Economy offered in this Roadmap includes five categories of actors. Table 1.1 provides a summary and we then provide further explanation of each of the five categories and their activities.

Sharing Economy actors self-identify with the Sharing Economy and/or are identified with it by the media or others. They both identify with Sharing Economy beliefs and core traits as listed in our definition of the Sharing Economy above, as well as derive some benefit from being associated with the Sharing Economy.

It is important to note that individuals are also key Sharing Economy actors as providers or consumers / users of Sharing Economy activities and platforms. Individuals engage with the Sharing Economy for a range of reasons including increased convenience, lower costs, access to desired goods and services, opportunities to supplement their income, and, in some cases, access to goods and services of superior value. Some transactions between individuals are 'peer-to-peer' – from individual to individual – including exchanges between total strangers supported by information technology. Others are 'business-to-peer' and occur between individuals and a Sharing Economy business or organization.

In conversation with the LGSE project Advisory Committee of local governments, we found 'peer-to-peer' and 'business-to-peer' categorizations less useful than exploring local government roles in relation to a spectrum of actors defined primarily by their ownership and/or organizational models. The first three rows of Table 1.1 – For-profit, Social Enterprise/ Co-operative, and Non-profit – are actors that are dominant in the media and more strongly aligned with the aspects of the Sharing Economy that use information technologies, a key driver of the rapid scaling of Sharing Economy activities. Our scan of local government involvement with the Sharing Economy across North America led us to highlight two other categories – Community Innovators and Public Organizations – who generally use information technology more modestly, if at all, yet still self-identify with the Sharing Economy beliefs and traits.

## Table 1.1
### SHARING ECONOMY ACTORS

| ROLE | DEFINITION | EXAMPLES |
|---|---|---|
| For-profit | Profit-oriented actors who buy/sell, loan/borrow, rent, barter, trade/swap, invest, donate/receive donations with the aid of information technologies that significantly lower transaction costs and enable exchange among strangers. | · Airbnb<br>· Homeaway<br>· Ebay<br>· Craigslist[8]<br>· Uber<br>· Car2Go<br>· Zipcar<br>· OpenDoor[8] |
| Social Enterprise/ Cooperative | Same definition as for-profit actors EXCEPT social and/or environmental motivations are given higher priority, relative to profit making. | · Cooperative carsharing companies e.g. Modo<br>· Cooperative tool libraries with web platforms & computerized inventory<br>· Swapsity<br>· CoHousing focused on market-rate housing<br>· Centre for Social Innovation (Toronto) |
| Non-profit | Same definition as for-profit and social enterprise actors EXCEPT they are non-business actors where the primary motivation is advancing their mission or purpose. | · Freecycle<br>· The Hive<br>· Non-profit [non-coop]tool libraries<br>· Non-profit carsharing organizations e.g. eGo Carshare (Denver)<br>· Non-profit CoHousing, e.g. O.U.R. Ecovillage |
| Community | Actors focused at the local or neighborhood scale with varied structures yet non-profit and informal models dominate. Most transactions are non-monetized. The use of information technology is more modest with a greater emphasis on in-person connection. Often-explicit emphasis on meeting local needs and sustainability goals. | · Community swaps<br>· Fix-it clinics/repair workshops<br>· Toy libraries<br>· Seed libraries<br>· Food buying clubs<br>· Community gardens<br>· Community kitchens<br>· Timebanks |
| Public-sector | Unlike the other actors above, public-sector organizations are subject to highly developed standards of accountability, transparency, and legitimacy. They use their relatively sophisticated infrastructure to support or forge partnerships with any of the actors above to promote innovative forms of sharing, but are ultimately answerable to citizens who are not necessarily involved in these exchanges, and to their governing bodies. | · Public libraries offering space (and potentially cataloguing systems) to items other than books-- tools, seeds, fishing equipment<br>· Municipal governments that run bike-sharing organizations<br>· Publicly-owned community centres hosting community kitchens, community gardens, swap meets<br>· Municipal purchasing favouring Sharing Economy actors |

## 1.3.1
## FOR-PROFIT, NON-PROFIT, AND COOPERATIVE/SOCIAL ENTERPRISE

While the business models and key motivations differ, for-profit, non-profit, and social enterprise / cooperative Sharing Economy actors engage in some or all forms of exchange of goods and services that humans have done for millennia: buying/selling, loaning/borrowing, renting, bartering, trading/swapping, investing, and donating/receiving donations. What distinguish these actors from "the rest" of the economy are the scale, frequency, volume, and nature of these exchanges that has changed markedly over the past decade due to the use of information technologies.

**Technologies Used By Prominent Sharing Economy Actors**

Information technologies used by Sharing Economy actors include social media; easy online payment; crowd-based ratings and reputation systems; database querying that allows instantaneous matching of supply and demand; real-time inventory updates; advanced marketing techniques; software that allows transactions among participants to be brokered by a third party on a digital information platform; online platforms that reduce or eliminate the role of traditional 'gatekeepers' to exchange (such as licensing bodies); real-time, online bidding/auctions; integration of publicly available data sets, such as geographic information system data sets; advanced marketing techniques that construct detailed profiles of individual and group preferences); smartphone apps that allow Sharing Economy participants to complete transactions from anywhere.

These technologies radically lower what economists call transaction costs—that is, all of the usual costs associated with the successful exchange of goods and services. In the traditional economy, branding and business reputation and regulation are key for reducing transaction costs. In the Sharing Economy, crowd-sourced information and information technology are key for reducing these costs.

**Defining Transaction Costs**

Transaction costs, as used in the field of economics, include not just costs but also effort and risks borne by participants in any exchange of goods or services. Accessing information is an important transaction cost. This could include: finding people to exchange assets with; being accountable to each other; delivering payment and/or the goods or services; keeping inventory information up-to-date; or clearing hurdles posed by gatekeepers and regulators--such as the need to get a license or credential. Note this is not the same as the 'transactional' element in the definition of the Sharing Economy by Shareable. [Note that 'transaction' in this case does not refer to the distinction made in the quote made by Neal Gorenflo in "Sample Sharing Economy Definitions and Comments" between transactional and transformational Sharing Economy.]

Radically lowered transaction costs means that exchanges that were barely imaginable only a decade ago are now easy, relatively secure, and rapidly scalable. This opens the door to a much wider range of business and organizational models. For example, businesses can coordinate a huge number of exchanges while collecting a commission on only a tiny fraction of them and still remain viable – for example, Craigslist – a classified advertisements website. New digital platforms allow entrepreneurs and non-profits to bypass traditional gatekeepers, like banks and granting organizations, and connect with would-be investors and donors with little more than a web-page and a creative video pitch. Reduced transaction costs allow people to enter and exit markets easily--and to quickly ramp operations up to a full-scale business or scale them down to one's personal labour of love.

A key issue in used goods markets or in risky situations (renting private homes and cars) is information including about the goods or the people. This is at the core of what the ratings and reputations systems support. They get the information to users and Sharing Economy actors by spreading out the costs across many people, so that the risk and evaluation is not just borne by the would-be transactor.

## 1.3.2
## COMMUNITY SHARING INNOVATORS AND PUBLIC SECTOR ORGANIZATIONS

Many defensible definitions of the Sharing Economy would stop at this point and exclude all other exchange that is not digitally mediated – even if the participants in these exchanges identify themselves with the Sharing Economy. As noted above, we view two additional categories of actors —community sharing innovators and public sector organizations — as valuable and relevant to understanding the role of local government in the Sharing Economy, particularly in advancing urban sustainability.

**Community Sharing** includes a diverse set of individuals and organizations that operate at more local scales that may or may not employ transaction-cost-lowering information technologies. Many embrace sharing in a traditional sense and adopt practices that coherently and explicitly promote sustainability. We consider these actors as a component of the Sharing Economy not only because they see themselves as part of it, but because they demonstrate potential to advance sustainability. They offer hope to amplify its best aspects.

The following are key traits that distinguish Community Sharing:

- Focused at a local or neighborhood scale
- Use of information technology to lower transaction costs is more modest and less sophisticated but this is evolving
- Varied structures – non-profit or informally organized models dominate but can also be for-profit, cooperative or social enterprise
- More emphasis placed on in-person connections
- Non-monetized transactions are more dominant e.g. swapping and bartering
- Greater, explicit emphasis on meeting local needs and sustainability goals

Some of the most common types of Community Sharing include:

- Community swap meets of clothing, toys, crops, seeds, clothing, baby food, media and more[10]
- Local lending libraries for tools,[11] clothing, toys,[12] seeds, cars
- Timebanking[13] – a reciprocity-based work trading system in which hours are the currency.
- Repair Cafes/Fix-It Workshops[14] where people bring broken appliances, clothes, computers and more to be repaired by volunteer 'fixers"
- Food-related sharing including[15] food buying clubs,[16] kitchen shares and community gardens.

Many of these are described in more detail in the Center for a New American Dream's Guide to Sharing. Community swaps provide an illustration of the features of Community Sharing and are the subject of Box 1.1 Community Swaps.

### BOX 1.1: COMMUNITY SWAPS

At community swaps people give away or barter everything from used clothing, seeds, homemade food and original art, to services such as music lessons and massage. Some are held in people's homes or backyards, and others are hosted in larger facilities such as community centres, church halls or fairground buildings.

Swaps are usually organized by a small group of individuals, who may also have support and assistance from local non-profits such as Goodwill, private companies (e.g. Medical Centers supporting food swaps), or public sector entities. For example, SwapSity media swaps have been supported by the City of Toronto Environment Office.[17]

There are also larger swapping organizations – many volunteer-based – such as Share Tompkins[18] in Ithaca, NY, or social enterprises such as SwapSity[19] in Toronto that facilitate swapping. They host websites that include online swap platforms, event listings and a range of resources including advice on organizing a swap. They also organize and host large swap meets.

Social interaction and relationship building is a significant component of community swaps, even those held on-line. Physical swaps involve indirect person-to-person interaction, and some focus significantly on social activities including potluck food, music and crafting.

According to Share Tompkins, a volunteer-run group based in Ithaca, NY, formed in May 2009 to help people share and trade goods and services:

"All kinds of creative arrangements have emerged from these events. At one swap, three different families said they needed help moving. They ended up arranging a three-way swap where they all helped each other on moving day. And another person at the swap lent them his truck in exchange for a hand-knitted hat and gloves. My partner and I have been able to exchange video production and web design for local, organic produce and the supplies we needed to start our own downtown container garden."

While transactions in virtual swaps happen on-line, there are often efforts to encourage off-line interaction. For example, the volunteers on the food exchange team of the Portland Food Exchange[20] "try to meet up for a few microbrews every couple of weeks to go over ideas. While the internet definitely has a place in all of this, it is so much more meaningful to talk to someone about the Portland Food Exchange while standing waist deep in a pumpkin patch!"[21]

**Public sector organizations** are government bodies as well as bodies that are created by, funded by, and controlled by government. Typical examples include municipalities, public libraries and community centres. Recognizing that these organizations operate at many scales and have many departments, we are referring here to those that explicitly subscribe to some of the Sharing Economy beliefs in the table in Section 1.2 and traits listed in our Sharing Economy definition at the beginning of this Chapter. They may also seek to innovate by applying some of the insights, practices or technologies of the digital Sharing Economy in potentially transformative ways. With their well-developed infrastructure, mandate to serve the public good, built-in accountability mechanisms, and wide reach, these organizations are powerful allies of the Sharing Economy. Examples include:

- Public libraries that incorporate tools libraries, seed libraries – (further details in Chapter 4 on Community Sharing)
- Community centres that include community gardens or kitchens
- Public procurement practices by municipalities that engage aspects of the Sharing Economy including collective ownership and sharing of goods, space, and transport
- Municipal equipment sharing, (e.g., Munirent which is a private sector, for-profit platform supplying government This Chapter outlines diverse local as customers the opportunity to share municipal equipment)

Local governments also play roles in facilitating and enabling other actors in the Sharing Economy. This Chapter outlines diverse local governments roles and the roadmap outlines these in more detail.

## 1.4 SHARING ECONOMY ACTIVITIES

There is a great deal of variation in the activities of each of these actors and even among categories of actors. Not all Sharing Economy activities fall within the realm of those that might reasonably involve local government. The following variables are considerations which local governments can take into account when determining whether to engage in Sharing Economy activities:

- Scale and size of the Sharing Economy activity
- Visibility of the activity to the appropriate regulatory body
- Potential of the activity to generate "spillover" effects for people (including those not directly involved in Sharing Economy exchange) and the environment e.g. contributing to climate change
- Potential of the activity to decrease or increase our ecological footprint
- Impact of the activity on community values, such as inclusiveness and safety
- Degree to which the activity may impact local government tax base, wages and profits in local industries, and economic diversity
- Potential for cooperation between actors and local governments in service of sustainability goals.

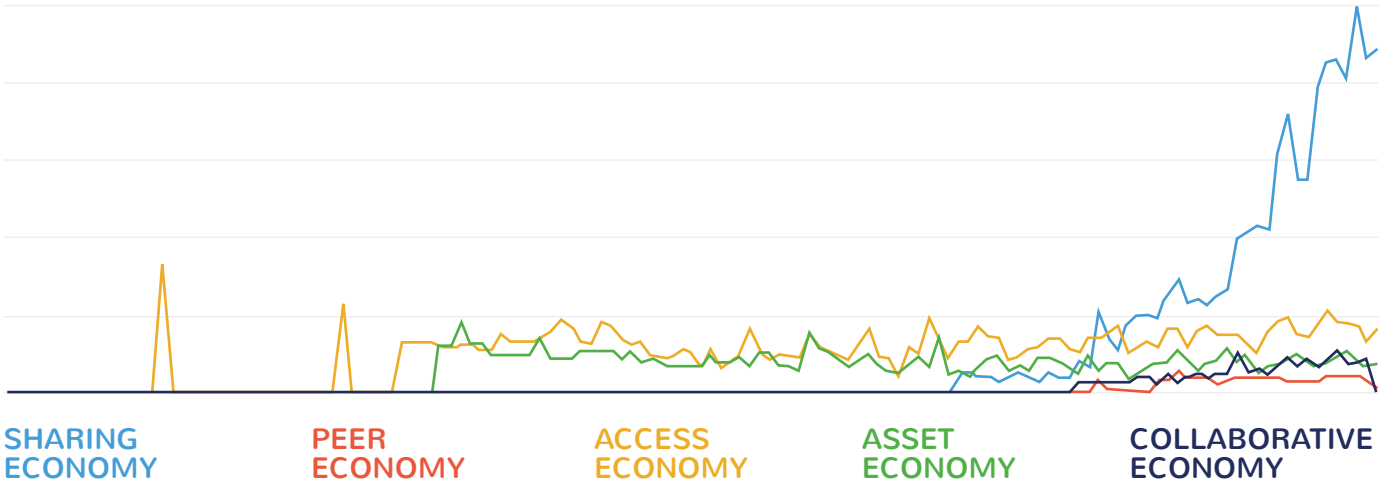
How do local governments sift through the mass of Sharing Economy activity in their city or community to identify a course of action to capitalize on Sharing Economy opportunities and minimize negative outcomes? We start to explore this in the next chapter on the Sustainability Filter, which supports local governments in analyzing which Sharing Economy activities advance urban sustainability.

## 1.5
## CHOOSING SHARING ECONOMY OVER OTHER TERMS

A number of terms have competed with Sharing Economy to describe a substantially similar set of actors and activities that we include in our definition. These include terms like the mesh economy, the access economy, the collaborative economy, and collaborative consumption. Each of these terms has strengths and weaknesses as a means of describing what proponents of a more sustainable society would like the Sharing Economy to be. Each one reflects different values and understandings of ideal ways to arrange human and economic life. All are grounded in at least some of the beliefs and traits of the Sharing Economy as described in this chapter.

But for the purposes of a convening a conversation among municipalities with a wide range of politics and perspectives on sustainability, it makes sense to ground our Sharing Economy definition in how it's seen and characterized by the people who identify with it (and are identified with it), rather than on how we want it to be. This suggests choosing the most widely recognized of these terms, and as the Google trend analytics reveals, this is *Sharing Economy*.

### SEARCH TERM INTEREST OVER TIME




This image, taken from a Google Trends analysis conducted for the LGSE Project, shows that the term "Sharing Economy" is by far the most common term used to describe this field.[22]

That said, we are fully aware of the limitations of the term Sharing Economy. For example, most of what is currently being described as Sharing Economy activity is not actually sharing, in the sense of taking part in something jointly or dividing, distributing or according a share with another or others. It is arguable that including all of the forms of exchange in the umbrella term sharing obscures tough questions about consumption, and colours our thinking about how to approach the Sharing Economy. The diverse activities captured by the term Sharing Economy offer potential for us to lighten our footprint and craft a more equitable society, but offer no inherent guarantee of this outcome. Time will tell if the descriptor we've chosen has staying power, or if it will end up as dated as terms like "information superhighway".

### 1.5.1
### CHOOSE YOUR OWN TERM

The term Sharing Economy was selected for this report, but another may resonate better in your community. Be aware that all of the terms discussed above are associated with specific analysts and belief sets about what the Sharing Economy should be, and any term may colour the way we think about it – so we recommend that you make sure the term and its associations are a good fit.

# LOCAL GOVERNMENT ACTIONS AND ROLES

## Spectrum of Actions, Roles and Effort

There is a spectrum of roles local governments play in the Sharing Economy. The following table outlines these roles in terms of their level of effort and their alignment with four clusters of action types: no action; facilitative actions; preparatory actions; and implementation actions.

1. **No Action** – it is critical that local governments identify those aspects of the Sharing Economy where there is currently no or very limited role for city governments.
2. **Facilitative Actions** are roles which local governments play to highlight, support and partner on community-led Sharing Economy activities. Community-led includes for-profit, social enterprise, non-profit, community and other non-city-led activities.
3. "**Preparatory Actions** are foundational steps that a community should take first to assess the community's needs and trends, identify and execute policy and regulatory changes, and strengthen partnerships and collaborations in order to effectively deploy resources and investments."[23]
4. "**Implementation Actions** are the programs and services, enforcement and incentive mechanisms, and infrastructure investments a community makes in order to efficiently and equitably move the needle towards desired outcomes."[23]

These actions can be arranged on a spectrum from low level of effort or commitment from the city to high level of effort and from community-led to city-led initiatives.

The following table provides a list of roles that align with each category of this spectrum and the subsequent table provides examples of Sharing Economy activities and actors according to the different roles local government have played.

## Table 1.2
### LOCAL GOVERNMENT EFFORT, ACTIONS AND ROLES

| LEVEL OF EFFORT OF LOCAL GOVT. | LOCAL GOVT. ACTION TYPE | LOCAL GOVT. ROLES |
|---|---|---|
| LOW ↑ **COMMUNITY-ONLY** | No action | **No role for Local Government** |
| **COMMUNITY-LED** FOR-PROFIT, NON-PROFIT, COMMUNITY | Facilitative actions | · **Monitor**<br>· **Inventory** – assess, survey, map, identify gaps<br>· **Promote** – celebrate, profile<br>· **Fund** – provide grants<br>· **Support** – other resources including space, in-kind advice, capacity building, leveraging others to provide support<br>· **Make minor policy adjustments** – business as usual policies (including permits) adapted to sharing economy activities<br>· **Convene** – bring together stakeholders<br>· **Partner / collaborate** |
| **CITY-LED** | Preparatory actions | · **Educate/outreach**<br>· **Advocate** – to higher levels of government<br>· **Develop plans**<br>· **Make major policy and code adjustments** |
| HIGH ↓ **CITY-LED** | Implementation actions | · **Demonstrate** – lead by example<br>· **Develop programs / services**<br>· **Improve facilities / infrastructure**<br>· **Own** – manage and operate<br>· **Regulate** – mandate, incentivize<br>· **Enforce** |

...level of effort for local governments...

## Table 1.3
### EXAMPLES OF SHARING ECONOMY ACTIVITIES BY LOCAL GOVERNMENT ROLES

| | ROLE | EXAMPLES | LOCATION |
|---|---|---|---|
| LOW EFFORT | **NO ROLE** | Craigslist | Multiple cities |
| | **LOW EFFORT FOR LOCAL GOVERNMENT** | **COMMUNITY-LED** | **FACILITATIVE ACTIONS** |
| | Monitor | Airbnb impacts | Multiple cities |
| | Inventory | Community sharing assets | Portland and Flagstaff |
| | Promote | · Uber for first/last mile transit trips at St. Patrick's Parade<br>· Websites, social media, city publications promote Community Sharing | Dallas<br>Portland, Flagstaff, Hennepin County (MO) |
| | Fund | Tool library | Vancouver |
| | Support | · Pop-up retail<br>· Provide space for tool libraries in public libraries and community centres<br>· Research through The Sharing Project[24] | New York<br>Multiple cities<br>Vancouver |
| | Make minor policy adjustments | Kitchen incubator<br>Short-term Rental Accommodation permit system and ordinances | Toronto<br>Portland, Austin |
| | Convene | Local government staff convene Portland State University, SoMa EcoDistrict and the Neighbourhood Coalition to scale reuse | Portland |
| | Partner / Collaborate | · BeResourceful partners with LocalWork and GoodWill<br>· Bayshare partners with Department of Emergency Management<br>· Carsharing partnerships for stations at suburban transit centres | Flagstaff<br>San Fransisco<br>Multiple cities |
| | **MEDIUM EFFORT FOR LOCAL GOVERNMENT** | **PREPARATORY ACTIONS** | **CITY-LED** |
| | Educate / Outreach | · How to run a Fix-It Clinic<br>· Blogs and Facebook posts about how to buy smart, reuse, borrow and share, fix and maintain | Hennepin County (MO)<br>Portland and Flagstaff |
| | Advocate | City advocates that ridesourcing regulation should happen at local level | Houston |
| | Develop plans | (Under development) Integrated Mobility Plans | US cities – guidance from Shared Use Mobility Centre |
| | Make major policy adjustments | Short-term Rental permit system and ordinances | Portland, OR; Austin, TX |
| | **HIGH EFFORT FOR LOCAL GOVERNMENT** | **IMPLEMENTATION ACTIONS** | **CITY-LED** |
| HIGH EFFORT | Demonstrate | · City governments join carsharing<br>· Sharing city data for transportation apps<br>· Catalyzing new snow removal app | Multiple cities<br>New York City; Portland<br>Montreal |
| | Develop programs / services | Resourceful PDX | Portland |
| | Improve facilities/ infrastructure | Electric charging stations open to carsharing organizations | Vancouver |
| | Own | Bikeshare | Multiple cities |
| | Regulate | Short-term rentals and ridesourcing | Multiple cities |
| | Enforce | Short-term rental regulations<br>Ridesourcing regulations | New York City & others<br>Houston & others |

It is important to note that local government roles change over time in response to a number of factors including:

- Shifting priorities and capacities of local government,
- Identification of new risks or benefits,
- Changing landscape of Sharing Economy actors and activities, and
- Evolution and maturation of each Sharing Economy activity.

This evolution of local government roles is explored in more detail in Chapter 6, Strategic Opportunities. This framework of the spectrum of roles serves as a basis for our analysis in the upcoming sections and for our recommendations as to how local government can respond to the Sharing Economy.

1 http://greattransition.org/publication/debating-the-sharing-economy

2 http://www.nesta.org.uk/event/making-sense-uk-collaborative-economy

3 http://www.web-strategist.com/blog/2014/12/07/collaborative-economy-honeycomb-2-watch-it-grow/

4 http://www.virgin.com/entrepreneur/is-the-crowd-a-disruption-or-an-opportunity-for-large-companies

5 http://meshing.it/

6 http://www.greattransition.org/publication/debating-the-sharing-economy

7 http://www.shareable.net/

8 Craigslist is a business, not a non-profit, but the technologies they use make the site valuable to all users and raises its profile by allowing a huge number of "free" exchanges by participants. Craigslist is a broker of exchange and makes enough profit on these exchanges to employ a small staff. Plus Craigslist enables a large number of businesses and bartering exchanges as well as the exchange of "free" stuff.

9 OpenDoor creates urban, collaborative living spaces. See: http://opendoor.io

10 http://www.shareable.net/blog/how-to-throw-a-community-swap-meet

http://www.shareable.net/blog/how-to-stage-a-media-swap

http://www.shareable.net/blog/how-to-throw-a-toy-exchange

http://www.shareable.net/blog/how-to-host-a-seed-swap

11 http://www.shareable.net/blog/how-to-start-a-tool-library

12 http://www.shareable.net/blog/how-a-denver-toy-library-has-helped-kids-share-for-35-years

13 http://www.shareable.net/blog/just-in-time

http://www.shareable.net/blog/how-to-share-time-through-timebanking

14 http://www.shareable.net/blog/how-to-start-a-repair-café

15 Many examples can be found in the Shared Food section of the LGSE Roadmap.

16 http://www.ehow.com/how_2242161_groceries-starting-food-buying-club.html

17 http://www.swapsity.ca/posts/view/swapsity_at_live_green_toronto_festival

18 https://sharetompkins.wordpress.com

19 http://www.swapsity.ca/landing

20 http://www.portlandfoodexchange.com

21 http://www.shareable.net/blog/how-to-start-a-crop-swap

22 Taken from Google Trends, searching the terms "Sharing Economy", "Peer Economy", "Access Economy", "Asset Economy", and "Collaborative Economy" as of August 2015.

https://www.google.com/trends/explore#q=Sharing%20Economy%2C%20Peer%20Economy%2C%20Access%20Economy%2C%20Asset%20Economy%2C%20Collaborative%20Economy&cmpt=q&tz=Etc%2FGMT%2B7

23 The terms 'preparatory actions' and 'implementation actions' are drawn from the STAR Community Rating System – built by and for local governments and their communities as a certification system to recognize sustainable communities.

Sustainabilty Tools for Assessing and Rating Communities (STAR Communities). *STAR Community Rating System, Version 1.2*, March 2015. http://www.starcommunities.org/rating-system/download/

24 http://ponderresearch.co/projects/the-sharing-project/

# 2.

# SUSTAINABILITY FILTER

How do we create better cities – ones that are liveable, just, prosperous, resilient, healthy, and support quality of life for all within the Earth's ecological means? This filter provides a guide for local governments to analyze Sharing Economy activities in order to identify those that foster more sustainable cities.

CHAPTER AUTHORS:
Vanessa Timmer (lead) with Rosemary Cooper

# Defining Sustainability

## 2.1
## WHAT IS SUSTAINABILITY?

Sustainability is advancing quality of life for all equitably while living within ecological means. Advancing sustainability has been on the international agenda for decades as a dynamic process of advancing human and ecological wellbeing in ways that are green, prosperous, healthy and just.[1] Sustainability is rooted in a whole systems approach, which requires a broader and more integrated way of meeting social, ecological, economic and cultural needs within a longer-term, inclusive perspective. It is about equity now and intergenerational equity into the future. It is an ideal toward which humanity is striving, and a mindset – a way of perceiving our world and the systems within which we are embedded.

Through a sustainability lens, we see cities differently. Their physical borders no longer bind them but rather include all supporting external systems and resources.[2] In our global economy, this means that cities are dependent on productive land, often on foreign shores, to both meet the needs of their inhabitants and to receive their waste streams.

Cities are also hubs of cultural activity and economic innovation influenced by, and influencing, those outside their jurisdictional boundaries. Advancing urban sustainability is by definition a global endeavour and increasingly city governments are collaborating together in networks such as the Urban Sustainability Directors Network and C40 Cities Climate Leadership Group in order to "accelerate effective urban sustainability at scale."[3]

An example of collaboration among cities and other partners is the STAR Communities Rating System built by and for cities and local communities across North America as a certification program to recognize sustainable communities.[4] STAR is an acronym for Sustainability Tools for Assessing and Rating communities. The Rating System notes that cities advance sustainability for a variety of reasons including to:

- **Demonstrate commitment** to local sustainability;
- **Receive national recognition** for leadership and achievements;
- **Gain competitive advantage** and attract funding;
- **Improve transparency** and accountability and showcase results;
- **Communicate resilience and risk management** to municipal bond agencies; and
- **Build and strengthen partnerships** within government and with community

The STAR Community Rating System is an evaluation guide for cities interested in advancing sustainability outcomes. In this Chapter, we draw on STAR and other sustainability frameworks to develop a filter with six areas of consideration for analyzing Sharing Economy activities.

> *"The path to sustainability is different for every community – but the common elements are a healthy environment, a strong economy and the well-being of the people living in the community. When sustainability areas are addressed in tandem with each*

*other, they have a powerful, positive effect on the quality of life and future of a community. By overlapping work in these areas, efficiencies emerge and better results are achieved. It's an approach that solves local problems while being innovative about progress."*

**– STAR Community Rating System – Version 1.2 – March 2015**

## 2.2 WHY SUSTAINABILITY?

There are three key reasons for this sustainability filter:

1) to align with local government priorities;
2) to take action on global trends that demand urgent responses; and
3) to respond to a growing interest in viewing the Sharing Economy from a sustainability perspective.[5]

**Alignment with Local Government Interest**

The main audience and Advisory Committee for this Roadmap are city staff who are part of the Urban Sustainability Directors Network (USDN). USDN member cities highlight different aspects of sustainability depending on their priorities such as affordability, economic development or waste reduction. Yet all are doing so within a broader, systemic concept of sustainability. This is reflected in the formation of the new USDN User Group on Sustainable Consumption and expressed in the 2015 Eugene Memorandum on the role of cities in advancing sustainable consumption, which includes a number of USDN members as signatories.[6] The sustainability filter is a response to this interest and alignment.

*"The sustainable city – once an idea, an aspiration, an imperative, a challenge – is taking shape as a remarkably broad set of practices, policies, technologies, tools, programs, performance standards, and organizational models that are spreading throughout North America's cities, large and small, old and new, coastal and interior."*

**– Pete Plasterik with Julia Parzen, Toward a Sustainable City: The State of Innovation in Urban Sustainability, September 2013.**

**Global Trends**

The scope and urgency of our integrated social, economic and environmental problems also provide impetus for analyzing Sharing Economy activities through a sustainability filter. Globally, we are facing growing and interconnected challenges including resource constraints, ecosystem degradation, growing social inequality, financial uncertainty, and increasing climate variability. These complex, global challenges require a reassessment of conventional solutions which are not enough to reverse the scale and depth of the problems. We must not simply address symptoms but rather act upon underlying forces and dynamics – such as recognizing that highly unequal societies are less sustainable and that continuous growth in material and energy consumption is fundamentally at odds with the constraints of a finite Planet.[7]

**Is the Sharing Economy advancing sustainability?**

Local governments are also confronting the fact that the rapid expansion of the Sharing Economy does not always advance the public interest. As Demailly and Novel note in their report on the Sharing Economy: "Sharing is not sustainable by nature,: make it sustainable."[8] This filter is designed to help cities that are pursuing sustainability to identify which activities to encourage and which ones are possible causes for concern.

# Sustainability Filter

## 2.3 TIPS ON HOW TO USE THE FILTER

The sustainability filter serves to support local governments interested in advancing sustainability as they make decisions about how to engage with different Sharing Economy activities and actors. There are six areas of consideration covering environmental, social, and economic

dimensions of sustainability that can help cities prioritize their engagement. Each area has a main question and three sub-questions.

**When using this filter:**

- Consider the sustainability questions in an integrated way in order to find opportunities for advancing multiple objectives and achieving synergistic benefits;
- Make use of cost-benefit analysis and other tools for assessing trade-offs amongst different priorities;[9] and
- Use terms and approaches that align with city priorities and interests.

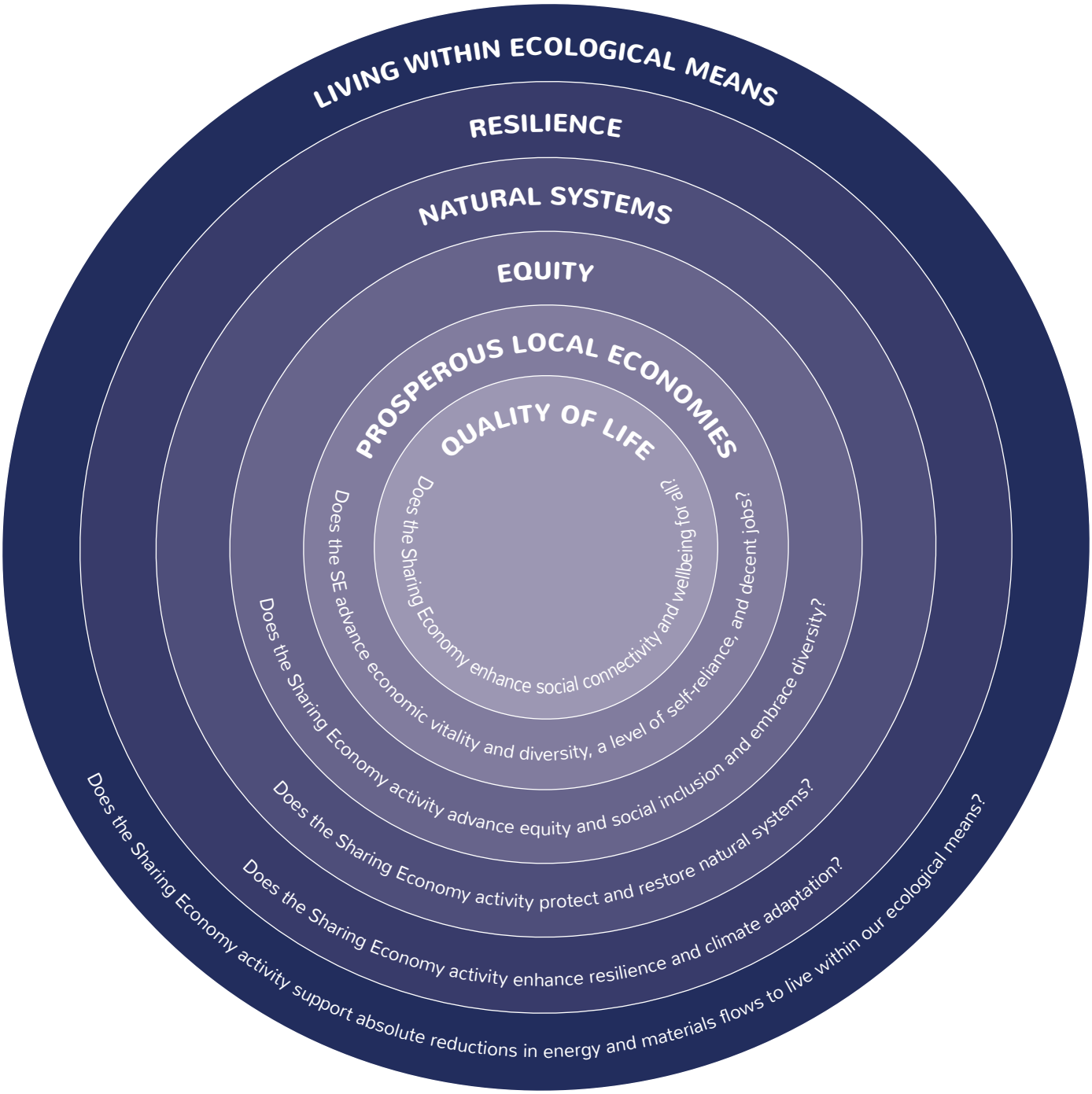
Additional recommendations on strategic approaches to the Sharing Economy can be found in Chapter 6.

> *"Sustainability is most usefully regarded as a guiding principle, rather than a specific set of ideas applied in a single area such as environmental policy. The essence of sustainability thinking is to recognize that there are assets, costs and benefits not accounted for in market decisions and values. Sustainability looks to the public interest beyond narrow market outcomes, taking a wide view across sectors and peering across time with a long view."*
>
> **– External Advisory Committee on Cities and Communities – June 2006 – From Restless Communities to Resilient Places: Building a Stronger Future for all Canadians**

Even though we advocate for an integrated and comprehensive approach to sustainability, city priorities differ from place to place depending on political cycles and community needs. Our suggestion is for local governments to align their decision-making according to their city's most pressing goals or priorities. If a city is focused on overcoming isolation among its residents then Sharing Economy activities that promote social connection can be priorioritized. However, if addressing economic downturn is paramount, then Sharing Economy activities that promote affordable living and create quality jobs can instead be favoured by local government.

## 2.4
## SIX SUSTAINABILITY CONSIDERATIONS

The sustainability considerations of Sharing Economy activities can be examined by local government by using a set of six guiding questions and related sub-questions as outlined in Table 2.1.



# Table 2.1
## SUSTAINABILITY FILTER: GUIDING QUESTIONS

| KEY QUESTION | SUB-QUESTIONS |
|---|---|
| **1. LIVING WITHIN ECOLOGICAL MEANS**<br>Does the Sharing Economy activity support absolute reductions in energy and materials flows to live within our ecological means? | **1a. EFFICIENCY GAINS**<br>Does the Sharing Economy activity reduce the quantity of material and energy flows? |
| | **1b. ABSOLUTE REDUCTIONS**<br>Does the Sharing Economy activity enable absolute reductions in material and energy flows? |
| | **1.c. ADDRESSES REBOUND**<br>Does the Sharing Economy activity enable reinvestment to further advance urban sustainability? |
| **2. RESILIENCE**<br>Does the Sharing Economy activity enhance resilience and climate adaptation? | **2a. INFRASTRUCTURE**<br>Does the Sharing Economy activity support infrastructure development and upgrades adapted to future climate change, emergencies and unanticipated events? |
| | **2b. EMERGENCY PLANNING**<br>Does the Sharing Economy activity advance emergency planning and preparedness? |
| | **2c. VULNERABILITY**<br>Does the Sharing Economy activity enable resilience for vulnerable constituencies in the face of emergencies, unanticipated events and climate adaptation? |
| **3. NATURAL SYSTEMS**<br>Does the Sharing Economy activity protect and restore natural systems? | **3a. NATURAL CAPITAL**<br>Does the Sharing Economy activity protect natural systems including air, water, soil, material resources, energy and food? |
| | **3b. REDUCED TOXICITY**<br>Does the Sharing Economy activity reduce levels of toxicity and advance toxics-free solutions? |
| | **3c. REGENERATIVE**<br>Does the Sharing Economy activity catalyze net positive gains in ecological integrity? |
| **4. EQUITY**<br>Does the Sharing Economy activity advance equity and social inclusion and embrace diversity? | **4a. ACCESS**<br>Can the Sharing Economy activity be accessed by lower-income persons and used as a means to improve standards of living? |
| | **4b. EQUITABLE DISTRIBUTION**<br>Does the Sharing Economy activity contribute to more equitable distribution of economic value? |
| | **4c. ENGAGEMENT**<br>Does the Sharing Economy activity build on a foundation of authentic community engagement and continue to diversify the Sharing Economy, create new partnerships, and expand the use of equity measures and support? |
| **5. PROSPEROUS LOCAL ECONOMIES**<br>Does the Sharing Economy activity advance economic vitality and diversity, a level of self-reliance, and decent jobs? | **5a. LOCAL ECONOMY**<br>Does the Sharing Economy activity strive toward local and regional self-reliance and take full advantage of, and nurture, local / regional food production, economy, power production and many other activities that sustain and support their populations? |
| | **5b. DECENT JOBS**<br>Does the Sharing Economy activity reduce unemployment? Does it provide jobs whose wages and labour practices support decent livelihoods? |
| | **5c. ECONOMIC DIVERSITY**<br>Is there a diversity of sharing economy entities so that there is a healthy level of competition? |
| **6. QUALITY OF LIFE**<br>Does the Sharing Economy activity advance social connectivity and wellbeing for all? | **6a. SOCIAL CONNECTIONS**<br>Does the Sharing Economy activity enhance social connectivity? |
| | **6b. LIFESTYLES**<br>Does the Sharing Economy activity facilitate healthier, sustainable lifestyles and a higher quality of life within liveable communities? |
| | **6c. WELLBEING**<br>Does the Sharing Economy activity advance wellbeing for individuals and their communities? |

The following provide some further detail on each of the six areas of the sustainability filter, including sample metrics that cities are already using to measure impacts.

## 1. LIVING WITHIN ECOLOGICAL MEANS

DOES THE SHARING ECONOMY ACTIVITY SUPPORT ABSOLUTE REDUCTIONS IN ENERGY AND MATERIALS FLOWS TO LIVE WITHIN OUR ECOLOGICAL MEANS?

Sub- questions:

### 1A. EFFICIENCY GAINS

DOES THE SHARING ECONOMY ACTIVITY REDUCE THE QUANTITY OF MATERIAL AND ENERGY FLOWS?

### 1B. ABSOLUTE REDUCTIONS

DOES THE SHARING ECONOMY ACTIVITY ENABLE ABSOLUTE REDUCTIONS IN MATERIAL AND ENERGY FLOWS?

### 1C. ADDRESSES REBOUND

DOES THE SHARING ECONOMY ACTIVITY ENABLE REINVESTMENT IN ADVANCING FURTHER URBAN SUSTAINABILITY?

Although cities occupy 3% of the Earth's surface, they house half of the Earth's population and use 60-80% of global energy consumption and 75% of the world's carbon emissions and of natural resource use.[10] The current consumption of resources including materials and energy and production of waste is 1.5 times what the Earth's living systems can sustain.[11] As Timothy Beatley outlines in his work on green cities, "cities that strive to live within ecological limits, fundamentally reduce their ecological footprints, and acknowledge their connections with and impacts on other cities and communities and the larger planet."[12] The STAR Community Rating System identifies 'living within ecological means' as a characteristic of a sustainable community defined as follows:

> *"Sustainable communities steward natural resources so that future generations have as many opportunities available to them as we do today. They also recognize that resources exist for the benefit of life forms other than humans. Local governments in these communities assess resources, track impacts, and take corrective action when needed so that they meet the needs of today without depleting what they leave for future generations."*[13]

Cities committed to the necessary scale of change are already emerging, including the March 2015 launch of the Carbon Neutral Cities Alliance. The Alliance's 17 member cities aim to reduce greenhouse gas (GHG) emissions by at least 80 percent by 2050 or sooner – the most ambitious GHG emission reduction targets undertaken by any cities across the globe.[14] Other promising solutions focus on: life-cycle or 'circular economy' approaches; waste minimization and prevention through reducing the demand for raw materials at source; product design for reuse and long-lasting durability; and the cultivation of a culture of sufficiency.

Reductions in material and energy flows can be supported through efficiency gains by using less material and energy per good produced. Yet, technological advances are not sufficient, particularly because efficiency gains are offset by growing human demand which contributes to a 'rebound effect'. As the 2015 USDN report on Sustainable Consumption and Cities notes:

> *"When a person saves money through a sustainable consumption activity, what happens to those cost savings? Do they remain in savings, or is it spent on more of the product (e.g., buy more used clothing) or on a different product or service (e.g., cell phone, food, or entertainment)? Services are generally expected to have lower impacts than products, but where do the savings go and how do the impacts compare?."*[15]

The 'rebound effect' occurs when benefits from a sustainable improvement are undermined by new problems that emerge from the improvement itself.[16] An example is increased driving as a result of cars and roads becoming better, cheaper and more widely available. MIT Professor John Sterman provides another example:

> *"Sustainability programs are subject to similar rebound effects: reducing the waste and energy embedded in a product lowers costs and prices, stimulating demand for the more efficient product (the direct rebound effect) and increasing people's disposable income, so that overall consumption rises (the indirect rebound effect). Population growth, rising incomes and consumption per capita and rebound effects can overwhelm even large improvements in ecoefficiency."*[17]

Because of the rebound effect, the challenge is to not only use less natural resources but also to reduce in absolute terms the quantity of material and energy flows and waste throughout the economy. The International Energy Agency emphasizes that absolute reductions are needed in overall demand for energy in order to support a transition to renewable energy.[18] A 2011 report of the International Resource Panel (IRP) confirmed that 'absolute decoupling' – achieving greater wellbeing with the same or fewer resources and fewer negative environmental impacts – is possible but hardly happens because available policy approaches and technologies remain untapped.[19] This 2011 report and a 2013 IRP report on City-Level Decoupling highlights the key role that cities play in contributing to absolute reductions because they serve as "societal 'nodes' in which much of the current unsustainable use of natural resources is socially and institutionally embedded - but also as centers for knowledge, financial, social and institutional resources, where the greatest potential exists for sustainability-oriented innovations."[20] Harnessing the potential of cities requires targeted reinvestment of any financial or efficiency gains into further sustainability efforts rather than increased consumption. This Roadmap asks cities to consider absolute reductions and reinvestment when taking action and engaging with Sharing Economy activities.

Sample metrics for 'Living within Ecological Means' from the STAR Community Rating System:[21]

- Climate and Energy – Waste Minimization – Total Solid Waste – Demonstrate incremental progress towards achieving a 100% reduction by 2050 in total solid waste generated within the jurisdiction that is disposed of via landfill, waste-to-energy facility, or incinerator.[22]
- Climate and Energy – Resource Efficient Buildings – Energy Efficiency – Demonstrate incremental progress towards achieving an 80% reduction by 2050 in the energy use intensity of the community's building stock.[23]
- Natural Systems – Green Infrastructure – Facility and Infrastructure Improvements – Increase the percentage of funding invested in green infrastructure.[24]

## 2. RESILIENCE
### DOES THE SHARING ECONOMY ACTIVITY ENHANCE RESILIENCE AND CLIMATE ADAPTATION?

Sub- questions:

**2A. INFRASTRUCTURE**
DOES THE SHARING ECONOMY ACTIVITY SUPPORT INFRASTRUCTURE DEVELOPMENT AND UPGRADES THAT ARE ADAPTED TO FUTURE CLIMATE CHANGE AND OTHER EXTREME EVENTS?

**2B. EMERGENCY PLANNING**
DOES THE SHARING ECONOMY ACTIVITY ADVANCE EMERGENCY PLANNING AND PREPAREDNESS?

**2C. VULNERABILITY**
DOES THE SHARING ECONOMY ACTIVITY ENABLE RESILIENCE FOR VULNERABLE CONSTITUENCIES IN THE FACE OF EMERGENCIES, UNANTICIPATED EVENTS AND CLIMATE ADAPTATION?

Cities are faced with complex challenges that require them to be resilient and cope with unprecedented change. Resilience is the capacity to anticipate and respond to risks and sudden shocks as well as to adapt to new knowledge, changed circumstances, and external challenges including climate change, geopolitical unrest and economic crises. Resilience is not just bouncing back from disturbance but 'bouncing forward' – using disruptions as an opportunity for improvement – to create more just, sustainable and liveable communities.[25] For example, Greensburg Kansas rebuilt their town after a tornado with upgraded public buildings of a LEED Platinum standard, decentralized wind power, and a walkable town centre.[26] In 2013, the Rockefeller Foundation launched the 100 Resilient Cities initiative to support cities - including Boston, Montréal, Chicago, and New Orleans - committed to building their capacity to navigate challenges and transform disruptions and catastrophes into opportunities.[27] The 100 Resilient Cities initiative views resilience as the ability of cities to respond to "not just the shocks – earthquakes, fires, floods, etc. – but also the stresses that weaken the fabric of a city on a day to day or cyclical basis" including high unemployment, inefficient transportation systems, violence, and food and water shortages.[28]

The STAR Community Rating System notes that sustainable communities "instill resiliency" defined as:

> *"Sustainable communities possess a strong capacity to respond to and bounce back from adversity. Local governments in these communities prepare for and help residents and institutions prepare for disruptions and respond to them swiftly, creatively and effectively."*[29]

Typically, building urban resilience is about buffering cities from change and is focused on protecting infrastructure, emergency preparedness and risk management. However, urban resilience can also be defined in broader terms. There is a growing emphasis on building 'adaptive capacity' in order to generate solutions and creatively reorganize while preserving valuable assets and relationships.[30] It is about "the capacity of a city's economic, social, political and physical infrastructure systems to absorb shocks and stresses and still retain their basic function and structure."[31] Urban resilience is about ensuring social, cultural, community and economic resilience.

The section below on prosperous, local economies emphasizes economic diversity and increased local self-reliance as a means to foster resilience. This is supported by the findings of the International Resource Panel report on cities, which recommends strengthening economic resilience "by reducing dependence on carbon intensive growth, stimulating efficiency in resource use, expanding skills for work in the green economy."[32] Principles for resilience also include designing for diversity, redundancy, modularity and independence of systems components, and feedback sensitivity,[33] combined with collaborative governance systems and asset management.[34]

Cities are incorporating resilience into their emergency preparedness and climate adaptation plans. For example, the City of Denver's Climate Adaptation Plan (2014) states: "A resilient community will be able to enjoy economic opportunity, parks, open spaces, recreational activities, and an environment conducive to support resident's health and well being" and has the following goals:

- Reduce vulnerability to building energy supply disruptions
- Reduce vulnerability of buildings to extreme weather
- Safeguard health of Denver residents in the context of climate impacts
- Improve mobility within the City and its communities
- Prepare and enable urban infrastructure to adapt to climate impacts
- Increase food security

Similarly, the vision of a 'healthy and resilient' City of Portland in its Climate Action Plan is one in which "the region's buildings, infrastructure, and natural and human systems are prepared to recover quickly from changing climate such as flooding, landslides and heatwaves."

The resilience strategies of the City of Calgary Emergency Management Agency were put to the test during the 2013 Southern Alberta floods. [35] An independent review by the Conference Board of Canada confirmed a highly effective emergency response by the City because of factors including "learning lessons from previous disasters;

investing in emergency preparedness; and having a good grasp of communications and social media use, a unified leadership, and a strong sense of community."[36] The emergency response strategies also supported local businesses in developing and successfully implementing their own contingency plans through a partnership between CEMA and the Chamber of Commerce.[37] Augmenting private sector preparedness and developing a comprehensive volunteer framework were cited as areas for improvement.

There is growing evidence that social connectivity and strong social ties are very important to more resilient cities and communities. Research on disaster recovery in Japan after an earthquake, in New Orleans after Hurricane Katrina, and in Chicago in terms of emergency preparedness highlights the critical role that social capital and neighbourhood connectivity can play to enhance social resilience.[38]

Julian Agyeman, Professor at Tufts University, is finding that social connectivity and resilience is already present among many vulnerable populations. "Those who have fewer resources – and more sharing – have more social contacts with their neighbours and within their community, and those with more resources have less."[39] These social ties can be supported by cities. In addition, urban resilience strategies need to recognize that sudden disruptions and stresses can have a disproportionate impact on vulnerable people, thus requiring a greater commitment to social equity. A May 2015 report by the Kresge Foundation and Island Press outlines some promising strategies, including: building on the strengths of low-income communities; supporting efforts spearheaded by local community groups; and advancing solutions to multiple challenges such as energy efficiency for housing affordability and public health. The report also highlights that resilience is about living within planetary limits in order "to avoid further destabilizing natural systems."[40]

Sample metrics for 'Resilience' from the STAR Community Rating System:[41]

- Climate and Energy – Climate Adaptation – Vulnerability Reduction – Demonstrate a measurable reduction in vulnerability in each of the 4 core areas (Built Environment, Economic Environment, Natural Environment, Social Environment) identified locally[42]
- Climate and Energy – Greening the Energy Supply – Electrical Energy Supply – Demonstrate that the community receives a portion of its overall energy supply from renewable energy sources[43]
- Health & Safety – Emergency Prevention & Response – Plan Development – Adopt a local comprehensive plan for emergency response that include provisions for evacuating low-income, disabled, and other persons likely to need assistance[44]

## 3. NATURAL RESOURCES
## DOES THE SHARING ECONOMY ACTIVITY PROTECT AND RESTORE NATURAL SYSTEMS?

Sub-questions:

### 3A. NATURAL CAPITAL
DOES THE SHARING ECONOMY ACTIVITY PROTECT NATURAL SYSTEMS INCLUDING AIR, WATER, SOIL, MATERIAL RESOURCES, ENERGY AND FOOD?

### 3B. REDUCED TOXICITY
DOES THE SHARING ECONOMY ACTIVITY REDUCE LEVELS OF TOXICITY AND ADVANCE TOXICS-FREE SOLUTIONS?

### 3C. REGENERATIVE
DOES THE SHARING ECONOMY ACTIVITY CATALYZE NET POSITIVE GAINS IN ECOLOGICAL INTEGRITY?

Humans are one species in the web of life. We are an integral part of the Earth's ecosystem and draw benefits from its ecological services. We depend on the Earth for provisioning services such as food, medicine, fuel and water; regulating services such as flood protection, pollination and climate regulation; cultural services such as recreational, aesthetic and spiritual benefits; and habitat or supporting services such as photosynthesis, soil formation, nutrient cycling and maintenance of genetic diversity.[45]

The Millennium Ecosystem Assessment Report provides detailed evidence of how humans have changed ecosystems in unprecedented and rapid ways in the past 50 years. Although this change has contributed to gains in human

wellbeing, "approximately 60% (15 out of the 24) of the ecosystem services evaluated in this assessment are being degraded or used unsustainably."[46] The impact on human wellbeing is significant, particularly for poor and vulnerable populations, and there is a greater likelihood of nonlinear, and possibly irreversible, changes in ecosystems. What is the role of cities in protecting natural systems, reducing toxicity and pollution, and restoring ecosystem services?

Cities are dense urban settlements whose concentration of population and economic activity provides increased opportunities for sustainability actions when compared to lower-density living. However, current urbanization practices are placing an unsustainable load on supportive ecosystems inside and outside their boundaries. This results in biodiversity loss, land and water degradation, nutrient loading, greenhouse gas accumulation and fisheries collapse. As noted in the section above on 'Living Within Ecological Means', the human enterprise is exploiting the global ecosystem at rates that surpass its regenerative capacity.. As urban populations grow, we use more and more resources and produce more and more waste.. William E. Rees, Professor Emeritus at the University of British Columbia and founder of ecological footprint analysis, underscores that city-dwellers are not acknowledging their inherently unsustainable parasitic relationship with the Earth. He writes:

> *"Cities increasingly define the human ecological niche. They comprise the major habitat of the dominant species on the planet and make unmatched biophysical demands on the ecosphere. In short, cities have become a critical structural, functional and spatial expression of human ecological reality. It is the more remarkable, therefore, that the very concept of cities as ecological entities remains below most people's cognitive radar... Thus, while the ecosphere evolves and maintains itself by 'feeding' on an extra-terrestrial source of energy, and by continuously recycling matter, cities grow and maintain themselves by 'feeding' on the rest of the ecosphere and ejecting their wastes back into it....In short, humans are de-structuring and dissipating critical resource ecosystems, polluting most others, and disrupting life-support functions essential to our own survival."*[47]

Rees recommends a number of approaches to address this problem including:

- Explicitly treating cities as ecosystems;
- Consolidating the city's eco-footprint within the natural eco-region surrounding the urban core;
- Densifying the urban core;
- Creating redundancy in terms of food, energy and water sources; and
- Shifting from a resource-depleting system to a "self-sustaining circular flows ecosystem. For example, animal and human domestic wastes would be treated and recycled on the eco-region's farm-and forest lands, improving soil quality, reducing the need for artificial fertilizers, and simultaneously reducing ground and surface water contamination."[48]

There is a growing understanding about the nature and value of ecological services[49] and, according to the International Resource Panel, cities can "harness the benefits of natural systems."[50] Cities are already protecting their rural areas from urban expansion, which are rich in both resources and natural assets. Examples include the Ontario greenbelt and Metro Vancouver's Agricultural Land Reserve.[51] The natural health of a city is also determined by levels of toxins, including air and water pollution. The World Health Organization analyzes air quality globally and in 2014 identified Whitehorse in the Yukon, Santa Fe, New Mexico and Honolulu, Hawaii as having some of the cleanest air because of city policies including strict regulations on emissions and public transit.[52]

The concept and practice of biomimicry – design that is inspired by the form and functions of nature – is being applied at the city scale.[53] Biomimicry 3.8 founder Janine Benyus believes biomimicry methods can increase the resilience and livability of cities: "if you were to actually make a city that functioned like the native ecosystem next door, it would produce ecosystem services."[54] Biomimicry 3.8 is partnering with design firm HOK to design from scratch an industrial city of 2 million people in India with nature's design principles at its core.[55] One group in the Puget Sound Area is trying this practice in Seattle. The Seattle Urban Greenprint project is identifying strategies from nature to support carbon flows, biodiversity and water flows in the city and connecting community partners and efforts to re-establish healthy ecosystem functions.[56]

There are also efforts to define an 'eco-city.' The non-profit, EcoCity Builders, is leading an effort with partners to implement their International EcoCity Framework and Standards. This includes creating specifications on bio-geo-physical conditions such as clean air and healthy soil, as well as ecological imperatives such as healthy biodiversity and ecological integrity.[57]

As cities explore what they can do to get ahead of the curve, the opportunity is to not only 'do less harm' but to rebuild natural systems through regenerative development and design.[58] This approach is more than ecosystem restoration or renewal – it is also rooted in the story of a place and the science of living systems.[59] Regenerative sustainability is not a one-time intervention but includes building community capability to adapt over time.[60] What does this mean in practice? One aspect is reinvestment. Rees recommends using revenues gained from other sustainability programs, such as carbon taxes, to "invest in rebuilding local / regional natural capital stocks (e.g. fisheries, forests, soils, biodiversity reserves, etc.) that have been traded away."[61] Another aspect is a shared vision of regeneration. For example, the community of Willow Springs in Pinal County Arizona created a guiding vision statement to "increase the vitality of the land and support its continuing evolution" with the aim of developing in a way that simultaneously enhances community and ecosystem health.[62]

Sample metrics for 'Natural Resources' from the STAR Community Rating System:[63]

- Natural Systems – Natural Resource Restoration – Restoration – Reduce the difference between the actual acreage restored and targeted acreage established in the natural systems plan or land conservation plan[64]
- Natural Systems – Outdoor Air Quality – Concentration and Emissions – Achieve attainment or maintenance status for all measured criteria pollutants[65]
- Natural Systems – Water in the Environment – Chemical Integrity – Pollutants – Demonstrate pollutant loadings below Total Maximum Daily Load (TMDL) level[66]

## 4. EQUITY
## DOES THE SHARING ECONOMY ACTIVITY ADVANCE EQUITY AND EMBRACE DIVERSITY?

Sub-questions:

### 4A. ACCESS
CAN THE SHARING ECONOMY ACTIVITY BE ACCESSED BY LOWER-INCOME PERSONS AND USED AS A MEANS TO IMPROVE STANDARDS OF LIVING? DOES THE SHARING ECONOMY SUPPORT CAPACITY BUILDING?

### 4B. EQUITABLE DISTRIBUTION
DOES THE SHARING ECONOMY ACTIVITY CONTRIBUTE TO MORE EQUITABLE DISTRIBUTION OF ECONOMIC VALUE?

### 4C. ENGAGEMENT
DOES THE SHARING ECONOMY ACTIVITY BUILD ON A FOUNDATION OF AUTHENTIC COMMUNITY ENGAGEMENT AND CONTINUE TO DIVERSIFY THE SHARING ECONOMY, CREATE NEW PARTNERSHIPS, AND EXPAND THE USE OF EQUITY MEASURES AND SUPPORT?

People live in cities in part because they are centres for development and provide access to services such as education, employment, and health care. However, these services and goods are typically not equally accessible or equitably distributed among city inhabitants. As the STAR Communities Framework outlines, a characteristic of a sustainable community is that it "ensures equity" which includes allocating resources and opportunities fairly. This requires that local governments actively eliminate barriers to full participation in community life and work to correct past injustices.[67]

This roadmap explores opportunities and challenges for local governments to advance equity in Chapter 6. A commitment to equity is a commitment to building the capacity of communities, to sharing power, to preventing regressive impacts on vulnerable populations, and to ensuring fair sharing of, and access to, the world's ecological and economic output and value. Cities have a central role to play in reversing growing inequality. The relatively wealthy are consuming far more than their share, while others are left without the basics. In fact, total net increases in national wealth in Canada, the US and globally are being captured by the already affluent.[68] There is evidence that social equity and more equitable distribution of resources is "better for everyone"[69] resulting in, for example, improved community health and less unproductive status competition. This roadmap explores opportunities for increasing equity through Sharing Economy activities.[70]

In a 2013 Urban Sustainability Directors Network review of the state of innovation, authors Pete Plastrik with Julia Parzen note that urban sustainability is "dramatically morphing" from a focus on environmental issues to adding new concerns including equity. According to USDN member Jennifer Green from the City of Burlington, a focus on equity is "where sustainability is heading" and she notes the following:

> *"A key trend is the emphasis on diversity, access and equity. Sustainability and greening cities will be about equity and diversity and ensuring that all people are part of the dialog and empowered to make change."*

The City of Austin focuses on "promoting prosperity for all" and "tackling the ethnic divide" as key parts of its 2012 Comprehensive Plan,[71] and Portland and Seattle are "enhancing equity through climate action" through their Climate Action Plans.[72] The City of Calgary 2020 Sustainability Direction highlights equity too in the following goal:

> *"Calgary maintains and champions each person's right to a sustainable life and a sustainable environment in which to live. Diversity is valued and all voices are considered in the decision-making process. Factors such as language, age, race, culture, gender, sexual orientation, time, finances, ability, knowledge and health are not barriers to publicly provided goods and services. Each decision results in the most effective and fair method of achieving mutually beneficial objectives. All decision-making enhances the value, vitality and sustainability of human and natural systems in both the present and future."*[73]

The USDN's Working Group on Social Equity defines social equity as "fair access to basic environmental health and safety, opportunities for livelihood and economic wellbeing; educational, social and environmental resources; full participation in the political and cultural life of the community; and self-determination in meeting fundamental needs and achieving one's full potential."[74] Strong interest in this topic among USDN city members has led to a number of activities including a social equity workshop and sessions at the USDN annual meeting in 2013, Innovation Fund proposal area of interest in 2013, and allocated grants.[75]The USDN also commissioned a scan of equity practices by Angela Park, Executive Director and Founder of Mission Critical, who highlights a number of good practices within cities in terms of defining equity and incorporating equity into sustainability programming, innovative tools and lessons. These include:

- Integrating equity into framing and communication of sustainability;
- Using data, metrics, and analysis to set goals and build accountability for progress on equity;
- Building sustainability efforts on a foundation of community engagement, ongoing capacity building, and collaboration, including through strengthening community partnerships across sectors to accelerate progress on equity; and
- Expanding the capacity and infrastructure for equity in local government decision-making and operations such as through professional development opportunities.[76]

The 2015 USDN Strategic Plan established 'strengthening equity initiatives' as a key short-term objective and encourages USDN members to build on the good practices outlined in the Equity scan and "to address equity as a foundational component of sustainability."[77]

Sample metrics for 'Equity' from the STAR Community Rating System:[78]

- Education, Arts & Empowerment – Social & Cultural Diversity – Diverse Community Representation – Demonstrate that appointments to local advisory boards and commissions reflect the racial and ethnic diversity of the community[79]
- Equity & Empowerment – Civil and Human Rights – Resolution of Complaints – Demonstrate that all civil and human rights complaints in the past 3 years have been investigated and violations redressed in a timely manner[80]
- Equity & Empowerment – Environmental Justice – Policy and Code Adjustment – Incorporate environmental justice criteria and priorities into zoning, land use planning, permitting policies, and development of new projects[81]

## 5. PROSPEROUS LOCAL ECONOMY
## DOES THE SHARING ECONOMY ACTIVITY ADVANCE ECONOMIC VITALITY AND DIVERSITY, A LEVEL OF SELF-RELIANCE, AND DECENT JOBS?

Sub-questions:

### 5A. LOCAL ECONOMY
DOES THE SHARING ECONOMY ACTIVITY STRIVE TOWARD LOCAL AND REGIONAL SELF-RELIANCE AND TAKE FULL ADVANTAGE OF AND NURTURE LOCAL / REGIONAL FOOD PRODUCTION, ECONOMY, POWER PRODUCTION AND MANY OTHER ACTIVITIES THAT SUSTAIN AND SUPPORT THEIR POPULATIONS?

### 5B. DECENT JOBS
DOES THE SHARING ECONOMY ACTIVITY REDUCE UNEMPLOYMENT? DOES IT PROVIDE JOBS WHOSE WAGES AND LABOUR PRACTICES SUPPORT DECENT LIVELIHOODS?

### 5C. ECONOMIC DIVERSITY
IS THERE A DIVERSITY OF SHARING ECONOMY ENTITIES SO THAT THERE IS A HEALTHY LEVEL OF COMPETITION?

There are at least two ways of defining 'sustainable economic development' (SED) according to the 2015 SED toolkit developed by EcoNorthwest for the Urban Sustainability Directors Network.

"The broad view places economic development in the context of the overall well-being or quality of life of the people that economic development is trying to benefit....

The narrower view focuses on the economic prosperity component of quality of life. This view emphasizes job creation and, in turn, income generation as the primary path to economic prosperity and development."

Departments of economic development within cities frequently take the narrower view for their own department as the broader view is advanced in collaboration with other departments and agencies, including health, transportation, and education. Economic development departments focus on business creation, growth and retainment with the aim of creating jobs and income for household economic wellbeing.

According to EcoNorthwest, local governments play a number of roles in attracting businesses and supporting their profitability including:

- Ensuring an adequate supply of developable land and built space;
- Investing in local infrastructure and services to support industrial, commercial and residential development;
- Supporting the development of an educated and skilled labour force through access to training and education, placemaking to make a region more attractive, and access to opportunities for diverse groups; and
- Providing effective regional branding and marketing to improve interactions with suppliers and consumers.[82]

Integrating sustainability into economic development requires the simultaneous consideration of social, economic and environmental factors in an integrated way while adopting a longer time horizon for decision-making.[83] Prosperity in this context is about security of employment and market stability that both meets the needs of life, such as food and shelter, and also provides human services that improve our quality of life such as social care, education, recreation, natural and physical assets.[84] Promising approaches to sustainable economic development and prosperity include a level of re-localization, commitment to

decent jobs, and diversity of economic activity.

There are a number of reasons why re-localizing the economy and seeking greater self-reliance is strategic: cities experience

1. reduced vulnerability to global change including rising energy prices and to dependency on production of basic needs elsewhere;
2. greater affinity among city dwellers to a local economy; and
3. capacity to manage and adjust to 'surprises'.[85]

It is important to note that localized economic activity does not replace international trade – there remains value in maintaining trade as a buffer for local shortages and as a provider of vital goods not produced in a community. However, there is a re-balancing that is critical in order to place a greater emphasis on local economic production rather than on global trade. Current global economic integration, specialization and restructuring reduces economic diversity and resilience, can de-value and de-skill a local population, and lead to local depletion of natural resources and increased pollution that increases risks globally.[86] Advancing urban sustainability is supported by an increase in economic self-reliance for essential resources such as food and energy, by strengthened domestic markets, and by diversification of economic activities.

In addition, a prosperous local economy requires a strong job market and skilled labour with jobs that support decent livelihoods within safe and healthy workplaces. In the context of sustainability, work is not just a 'livelihood' but as Jackson and Victor note "is also a vital ingredient in our connection to each other — part of the "glue" of society. Good work offers respect, motivation, fulfillment, involvement in community and, in the best case, a sense of meaning and purpose in life."[87] Sharing Economy activities can be assessed as to whether they provide decent work, or whether it is leading to "a 'gig economy' where skilled jobs are replaced with low–paid casual work."[88] As Juliet Schor writes, our assessment needs to be considered in light of the fact that this is "a period of high unemployment and rapid labor market restructuring" with eroding working conditions and protections, declining wages and decline in labor's share of national income in the US.[89] There is also evidence that labour conditions are worsening with certain practices including not affording workers 'employee status', which reduces rights including minimum wage, benefits, and compensation from unfair dismissal.[90] According to Schor, labour conditions can be improved through sharing platforms by providing more employment alternatives and greater autonomy and allocation of income; however, Schor emphasizes the need to ensure decent jobs.

Sample metrics for 'Prosperous Local Economy' from the STAR Community Rating System:[91]

- Economy & Jobs – Business Retention & Development – Businesses – Demonstrate an increased number of business establishments in the municipality over time[92]
- Economy & Jobs – Local Economy – Community Self-Reliance – Demonstrate that 50% of import sectors have increasing location quotients over the past 3 years[93]
- Economy & Jobs – Quality Jobs & Living Wages – Education and Outreach – Support a Best Places to Work campaign to recognize local businesses that support employees and their families[94]

## 6. QUALITY OF LIFE
## DOES THE SHARING ECONOMY ACTIVITY ADVANCE SOCIAL CONNECTIVITY AND WELLBEING FOR ALL?

Sub-questions:

### 6A. SOCIAL CONNECTIONS
DOES THE SHARING ECONOMY ACTIVITY PROMOTE AND ENHANCE SOCIAL CONNECTIVITY?

### 6B. LIFESTYLES
DOES THE SHARING ECONOMY ACTIVITY FACILITATE (AND ENCOURAGE) MORE HEALTHY, SUSTAINABLE LIFESTYLES AND HIGHER QUALITY OF LIFE WITHIN LIVEABLE COMMUNITIES?

### 6C. WELLBEING
DOES THE SHARING ECONOMY ACTIVITY ADVANCE WELLBEING FOR INDIVIDUALS AND THEIR COMMUNITIES?

The ultimate aim of urban sustainability is to ensure quality of life and wellbeing for city inhabitants.[95] As mentioned in

the section above, in EcoNorthwest's Sustainable Economic Development Toolkit developed for the Urban Sustainability Directors Network, economic development more broadly defined is about improving wellbeing "not just through economic activity, but also through improvements in the wider social and natural environment that strengthen the economy."[96] Our understanding and evaluation of wellbeing is developing in significant ways and is revealing insights for urban design and policy.

What have we learned about measuring wellbeing? According to Italian economist and OECD statistician Enrico Giovannini, a useful distinction can be made between wellbeing and happiness.[97] Wellbeing is enabled through policies and context and can be measured objectively across specific domains including living standards, health, mental health, community vitality, cultural vitality, governance environmental quality, education, and work satisfaction. In contrast, happiness is measured subjectively using surveys in which people rank their level of experienced happiness, and supported by the development of 'happiness skills' such as compassion, sociability, altruism, kindness, and delayed gratification developed in religious traditions, positive psychology and neuro-science.[98] Generosity is key as there is growing evidence that people feel better off when they give to others[99] and there is some evidence that this may extend to sharing.[100]

Assessments reveal that a key component of wellbeing is social connectivity and a feeling of belonging. The World Bank notes the "increasing evidence showing that social cohesion is critical for societies to prosper economically and for development to be sustainable. Social capital is not just the sum of the institutions which underpin a society – it is the glue that holds them together."[101] People who experience a strong sense of belonging are healthier, learn better, feel an increased sense of purpose, improve social inclusion, participate in society and are more resilient to disruption.[102]

Charles Montgomery, author of 'Happy City: Transforming our Lives through Urban Design', also highlights that people are happier when they live a connected life filled with regular interactions with others.[103] Montgomery notes that these spontaneous gatherings and opportunities to socialize can be encouraged by the way cities are designed – the buildings, land-use and mobility systems, public spaces and encounters with nature. Practices including adding pocket parks, public art, berms and benches to sidewalks, and pedestrian friendly areas improve experiences of happiness and connection. Timothy Beatley notes that green cities are ones that "facilitate (and encourage) more sustainable, healthful lifestyles" and "emphasize a high quality of life and the creation of highly livable neighbourhoods and communities."[104]

The City of Vancouver recognizes the importance of belonging and social connectivity to community health, and convened the Engaged City Task Force in 2012 in response to a Vancouver Foundation survey of metro Vancouver residents that revealed a lack of connection and engagement.[105] A sense of connection results from the relationships we have with each other and their strength. while engagement emerges from community commitment and our willingness to act to improve our communities. The City is now implementing recommendations including creating a pop-up city hall in 12 locations around the city, improved clarity around voting and development proposals, and a step-by-step guide for hosting block parties.[105]

The evaluation of wellbeing and happiness informs the OECD Better Life Index and is now being used for city comparisons and to support urban design decisions.[107] The updated January 2014 Gallup-Healthways Well-Being Index used to survey millions individuals in the US includes five elements of well-being, each with its own score on a 0-10 scale:[108]

- **PURPOSE:** Liking what you do each day and being motivated to achieve your goals
- **SOCIAL:** Having supportive relationships and love in your life
- **FINANCIAL:** Managing your economic life to reduce stress and increase security
- **COMMUNITY:** Liking where you live, feeling safe and having pride in your community
- **PHYSICAL:** Having good health and enough energy to get things done daily

These indicators on individual wellbeing are being paired with assessments at the community and neighbourhood scale, such as in the City of Toronto.[109] At the global scale, we can turn to the World Happiness Report in 2012 and 2015 for a comparative survey of countries.[110]

Sample metrics for 'Quality of Life' from the STAR Community Rating System:[111]

- Education, Arts and Community – Community Cohesion

– Neighbourhood Cohesion – Demonstrate an increased percentage of neighborhoods reporting positive levels of neighbourhood cohesion through community surveys[112]

- Equity and Empowerment – Civic Engagement – Voter Turnout Rates – Increase the percentage of voters participating in local elections over time[113]
- Health & Safety – Active Living – Policy and Code Adjustment – Require or incentivize bicycle and pedestrian amenities in new major development projects in high-density, mixed- use areas or near transit stations[114]

## 2.5 APPLYING THE SUSTAINABILITY FILTER

In the next Chapters we take a number of Sharing Economy sectors through the sustainability filter. Shared mobility, spaces, goods are explored in the greatest depth with a lighter focus on shared food and energy. We also identify and explore a new sector, Community Sharing, identified because of its relevance to local government and sustainability promise.

Our analysis demonstrates that sustainability is not inherent to all Sharing Economy activities nor is it a priority of all actors. We make recommendations for how local governments can enhance the sustainability benefits of the Sharing Economy based on a nuanced understanding of sustainability benefits specific to the varied activities and actors in each key sector.

1 For example: https://sustainabledevelopment.un.org; https://www.iisd.org/sd/; http://www.worldbank.org/en/topic/sustainabledevelopment

2 W. E. Rees, *Cities as Dissipative Structures: Global Change and the Vulnerability of Urban Civilization,* In: M. P. Weinstein and R. E. Turner, Eds., Sustainability Science: The Emerging Paradigm and the Urban Environment, Springer, New York, 2012, pp. 247-273.

3 *Urban Sustainability Directors Network 2015 Strategic Pla*n p. 4

4 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

5 e.g., http://www.iddri.org/Publications/Economie-du-partage-enjeux-et-opportunites-pour-la-transition-ecologique; http://www.triplepundit.com/special/rise-of-the-sharing-economy/sharing-economy-innately-sustainable/; http://www.inc.com/matthew-yeomans/why-the-sharing-economy-has-a-sustainability-problem.html; http://www.sharing.org/information-centre/articles/global-justice-sustainability-and-sharing-economy

6 http://usdn.org/uploads/cms/documents/the_role_of_cities_in_advancing_sustainable_consumption_convening_products.zip Workshop Proceeding - Eugene Memo

7 http://usdn.org/uploads/cms/documents/the_role_of_cities_in_advancing_sustainable_consumption_convening_products.zip Workshop Proceeding - Eugene Memo

8 Damien Demailly and Anne-Sophie Novel - Institute for Sustainable Development and International Relations (IDDRI) *The sharing economy: make it sustainable*

9 E.g., See SED Toolkit Benefit Cost Analysis -http://usdn.org/uploads/cms/documents/sustainable_economic_development_toolkit_-_usdn_innovation_fund_commissioned_project.zip

10 http://www.unep.org/resourcepanel-old/Publications/City-LevelDecoupling/tabid/106135/Default.aspx

11 http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/

12 Sadhu A. Johnston, Steven S. Nicholas, and Julia Parzen. *The Guide to Greening Cities* (Washington DC: Island Press, 2013), 13.

13 http://www.starcommunities.org/rating-system/principles/

14 http://usdn.org/public/Carbon-Neutral-Cities.html

15 Cascadia Consulting Group Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities for the Urban Sustainability Directors Network (2015) p. 41 http://usdn.org/uploads/cms/documents/usdn_measuring_consumption_project_files.zip

16 Sterman, John. *Stumbling towards Sustainability: Why organizational learning and radical innovation are necessary to build a more sustainable world – but not sufficient.* Chapter in Forthcoming, R. Henderson, M. Tushman and R. Gulati (eds.) (2014) Organizational & Strategic Change and the Challenge of Sustainability. Oxford University Press.

17 Ibid.

18 http://www.worldenergyoutlook.org/

19 http://www.unep.org/resourcepanel/Publications/Decoupling/tabid/56048/Default.aspx

20 http://www.unep.org/resourcepanel-old/Publications/City-LevelDecoupling/tabid/106135/Default.aspx - p.2

21 STAR Community Rating System – Version 1.2 March 2015 - http://www.starcommunities.org/rating-system/

22 Ibid. p. 49

23 Ibid. p. 45

24 Ibid. p. 110

25 Cara Pike, *Climate Resilience: Deconstructing the New Buzz Word,* on Climate Access: Sharing What Works. 10 May 2013. http://www.climateaccess.org/blog/climate-resilience-%E2%80%93-deconstructing-new-buzz- word

26 http://kresge.org/news/report-offers-cross-sector-thinking-building-cities%E2%80%99-resilience-amid-climate-change p. 27

27 http://www.100resilientcities.org/pages/100-resilient-cities-challenge#/-_/

28 http://www.100resilientcities.org/about-us#/-_/

29 http://www.starcommunities.org/rating-system/principles/

30 http://www.resalliance.org/adaptive-capacity; http://www.ecologyandsociety.org/vol20/iss1/art47/

31 Applegath, Craig (2012) *Future Proofing Cities: Strategies to Help Cities Develop Capacities to Absorb Future Shocks and Stresses* - http://www.resilientcity.org/index.cfm?pagepath=Resilience/Future_Proofing_Cities_Toolkit&id=41266

32 http://www.unep.org/resourcepanel/Publications/Decoupling/tabid/56048/Default.aspx p.5

33 http://www.resilientcity.org/index.cfm?pagepath=Resilience/Resilient_Design_Principles&id=11900

34 http://uli.org/research/centers-initiatives/urban-resilience-program/reports/

35 http://www.calgary.ca/CSPS/cema/Pages/home.aspx?redirect=/cema

36 http://www.conferenceboard.ca/e-library/abstract.aspx?did=6329

37 http://calgaryherald.com/business/local-business/new-program-launched-to-help-calgary-businesses-be-disaster-resilient

38 http://scholar.harvard.edu/files/sampson/files/when_disaster_strikes.pdf; http://www.npr.org/2011/07/04/137526401/the-key-to-disaster-survival-friends-and-neighbors

39 *Sharing Cities* – written for Friends of the Earth's 'Big Ideas' project by Professor Julian Agyeman, Duncan McLaren and Adrianne Schaefer-Borrego – Sept 2013 - https://www.foe.co.uk/page/big-ideas-publications

40 http://kresge.org/news/report-offers-cross-sector-thinking-building-cities%E2%80%99-resilience-amid-climate-change

41 STAR Community Rating System – Version 1.2 March 2015 - http://www.starcommunities.org/rating-system/

42 Ibid. p. 37

43 Ibid. p. 41

44 Ibid. p. 97

45 http://www.millenniumassessment.org/en/index.html - Synthesis Report - Overall Synthesis p. V; http://www.teebweb.org/resources/ecosystem-services/

46 http://www.millenniumassessment.org/en/index.html - Synthesis Report - Overall Synthesis p. 6

47 Rees, William E. *Cities as Dissipative Structures: Global Change and the Vulnerability of Urban Civilization*. Chapter in Weinstein MP, Turner RE (eds). Sustainability science: the emerging paradigm and the urban environment. Springer, New York (2012) p. 4-5.

48 Ibid. p. 19

49 Jackson, Tim and Peter Victor (2013) *Green Economy at Community Scale.* Metcalf Foundation. November, p. 60; http://www.teebweb.org/about/

50 http://www.unep.org/resourcepanel/Publications/Decoupling/tabid/56048/Default.aspx p.8

51 http://www.mah.gov.on.ca/Page187.aspx; http://www.metrovancouver.org/services/regional-planning/agriculture/about/Pages/default.aspx

52 http://www.care2.com/causes/10-cities-with-the-cleanest-air-in-the-world.html; http://www.thestar.com/news/canada/2011/09/26/who_ranks_canadas_urban_air_among_best_in_world.html

53 http://www.treehugger.com/sustainable-product-design/can-we-use-biomimicry-to-design-cities-janine-benyus-says-yes.html; http://video.esri.com/watch/3158/cities-that-function-like-forests-biomimicry-maps-a-sustainable-future

54 http://www.greenbiz.com/video/janine-benyus-biomimicry-build-resilient-cities

55 http://environment-ecology.com/biomimicry-bioneers/376-a-new-industrial-city-based-on-biomimicry.html; http://www.treehugger.com/sustainable-product-design/hok-and-biomimicry-guild-forge-alliance-for-bio-inspired-design-excellence.html

56 http://www.urbangreenprint.org/#!seattle-urban-greenprint/c24ji; http://biomimicrynyc.com/tag/resilient-cities/

57 http://www.ecocitystandards.org/

58 http://www.regenesisgroup.com/manifesto/; http://www.tandfonline.com/doi/abs/10.1080/09613218.2012.629112; John Robinson and Raymond Cole, "Theoretical Underpinnings of Regenerative Sustainability," Building Research & Innovation 43, no. 2 (2014): 133-143, www.tandfonline.com/doi/pdf/10.1080/09613218.2014.979082;

59 http://www.di.net/articles/regenerative-design-sustainable-designs-coming-revolution/

60 http://www.academyforchange.org/regenerative-sustainability-at-the-neighborhood-scale/, p.14

61 Rees, William E. Avoiding Collapse: An agenda for sustainable degrowth and relocalizing the economy. CCPA, June (2014) - https://www.policyalternatives.ca/publications/reports/avoiding-collapse

62 http://www.di.net/articles/regenerative-design-sustainable-designs-coming-revolution/

63 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

64 Ibid. p. 113

65 Ibid. p. 115

66 Ibid. p. 118

67 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

68 Rees, William E. *Avoiding Collapse: An agenda for sustainable degrowth and relocalizing the economy.* CCPA, June (2014) - https://www.policyalternatives.ca/publications/reports/avoiding-collapse

69 Wilkinson, R. and K. Pickett. 2010. *The Spirit Level: Why Equality Is Better for Everyone.* London: Penguin Books;

70 http://julianagyeman.com/2014/07/beyond-sharing-economy-case-sharing-cities/; McLaren, Duncan and Agyeman, Julian (2015) Sharing Cities: A Case for Truly Smart and Sustainable Cities. MIT Press.

71 City of Austin. (2012). *Imagine Austin, Austin's Comprehensive Plan* – http://www.austintexas.gov/department/our-plan-future

72 City of Portland. (2015). *Portland 2015 Climate Action Plan* - http://www.portlandoregon.gov/bps/66995; City of Seattle. (2013). Climate Action Plan - http://tinyurl.com/keurrtr

73 City of Calgary. (2010). *2020 Sustainability Direction: The City of Calgary's 10-year Plan towards imagineCalgary* - http://www.calgary.ca/CA/cmo/Documents/2013-0648_ChangesTo2020SusCover_spread_web.pdf

74 http://usdn.org/public/Products-Equity.html

75 http://usdn.org/public/Products-Equity.html

76 Equity and Sustainability Scan (USDN Special Project, 2014) - http://usdn.org/uploads/cms/documents/usdn_equity_scan_sept_2014_final.pdf

77 http://usdn.org/uploads/cms/documents/External_USDN_Strategic_Plan_2015.pdf

78 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

79 Ibid. p. 75

80 Ibid. p. 80

81 Ibid. p. 83

82 See *SED Toolkit – Definition of Sustainable Economic Development* – p.3-4 http://usdn.org/uploads/cms/documents/sustainable_economic_development_toolkit_-_usdn_innovation_fund_commissioned_project.zip

83 Ibid p. 7

84 Jackson, Tim and Peter Victor. *Green Economy at Community Scale.* Metcalf Foundation, Toronto, Canada (2013) p. 7 - http://metcalffoundation.com/publications-resources/view/green-economy/

85 Rees, William E. *Avoiding Collapse: An agenda for sustainable degrowth and relocalizing the economy.* CCPA, June (2014) - https://www.policyalternatives.ca/publications/reports/avoiding-collapse

86 Ibid.

87 Jackson, Tim and Peter Victor. *Green Economy at Community Scale.* Metcalf Foundation, Toronto, Canada (2013) p. 7 - http://metcalffoundation.com/publications-resources/view/green-economy/

88 http://www.nesta.org.uk/event/making-sense-uk-collaborative-economy

89 Schor, Juliet. *Debating the Sharing Economy* October (2014) Great Transition Initiative – p. 9-10 http://www.greattransition.org/publication/debating-the-sharing-economy

90 https://theconversation.com/uber-labour-ruling-in-california-could-send-shockwaves-through-the-sharing-economy-43728; http://business.financialpost.com/executive/management-hr/sharing-economy-allows-employers-such-as-uber-to-avoid-obligations-to-workers

91 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

92 Ibid. p. 52

93 Ibid. p. 57

94 Ibid. p. 60

95 http://www.theguardian.com/sustainable-business/cities-living-labs-health-wellbeing

96 See *SED Toolkit – Definition of Sustainable Economic Development* – p.1 http://usdn.org/uploads/cms/documents/sustainable_economic_development_toolkit_-_usdn_innovation_fund_commissioned_project.zip

97 Enrico Giovannini presentation at an international meeting on happiness measurement, as reported by John de Graaf; Giovannini, Enrico (2013) 'Using 'Equitable and Sustainable Wellbeing' to Build the Post-MDGs Framework', IDS Bulletin, 44.5-6, pp. 89-96.

98 De Graaf, John and David Batker. (2011). *What's the Economy For Anyway?* New York: Bloomsbury.

99 https://www.psychologytoday.com/blog/out-the-darkness/201501/happiness-comes-giving-not-buying-and-having; http://www.huffingtonpost.com/brady-josephson/want-to-be-happier-give-m_b_6175358.html; http://www.newrepublic.com/article/119477/science-generosity-why-giving-makes-you-happy

100 Griffiths, Rachel (2011) *The great sharing economy: A report into sharing across the UK.* Cooperatives UK. P.7

101 http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSOCIALCAPITAL/0,,print:Y~isCURL:Y~contentMDK:20185164~menuPK:418217~pagePK:148956~piPK:216618~theSitePK:401015,00.html

102 http://www.vitalsignscanada.ca/en/page-45-2015-belonging p. 3

103 http://thehappycity.com/the-book/

104 Sadhu A. Johnston, Steven S. Nicholas, and Julia Parzen. *The Guide to Greening Cities* (Washington DC: Island Press, 2013), 13.

105 http://vancouver.ca/your-government/engaged-city-task-force.aspx; https://www.vancouverfoundation.ca/initiatives/connections-and-engagement

106 http://vancouver.ca/your-government/engaged-city-task-force.aspx

107 http://www.oecdbetterlifeindex.org/; City comparison example, http://www.statcan.gc.ca/pub/11-626-x/11-626-x2015046-eng.htm; happiness and urban design: http://thehappycity.com/

108 http://www.gallup.com/poll/128186/gallup-healthways-index-work.aspx

109 http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=4209f40f9aae0410VgnVCM10000071d60f89RCRD

110 http://worldhappiness.report/

111 *STAR Community Rating System – Version 1.2* March 2015 - http://www.starcommunities.org/rating-system/

112 Ibid. p. 68

113 Ibid. p. 78

114 Ibid. p. 91

# 3a.

# SHARED MOBILITY

Shared mobility is arguably the most rapidly growing and evolving sector of the Sharing Economy. One-way and peer-to-peer carsharing, as well as ridesourcing, are amongst the many new entrants in the short-term, as-needed shared transportation milieu. Is shared mobility an opportunity or a distraction on our journey towards more sustainable and equitable transportation systems?

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# Summary

Rather than considering shared mobility options such as carsharing or ridesourcing in isolation, local governments may be better served by cultivating a shift towards integrated mobility planning. Using this approach, a suite of mobility options – with public transit as the foundation – is considered in conjunction with land use patterns. Shared mobility can then be used to fill gaps in the existing public infrastructure and extend its reach.

While there are variations with different models, **carsharing** generally makes a positive contribution to the ability of cities to live within their ecological means by reducing car ownership levels and reducing vehicle miles travelled. The impact on transit requires further exploration, particularly for one-way carsharing. While positive health impacts are assumed, they are not proven. Local governments can leverage carsharing to enhance urban sustainability by: supporting its expansion in suburban municipalities and integration with transit; supporting electric vehicle expansion and carsharing companies that explicitly and consistently advocate for sustainable behaviour change; ensuring that cities have both two-way and one-way carsharing entities to create a more comprehensive mobility mix; and continuing to integrate carsharing into new multi-family developments.

Current usage of carsharing and ridesourcing amongst **low-income communities** is below that of the general population. This can be addressed by continuing to regard shared mobility as a complement to public transit and equitable transit-oriented development. Efforts to increase low-income participation in shared mobility need to address multiple barriers and employ partnerships of public, non-profit and private actors. The equity potential of peer-to-peer carsharing should be explored.

While **ridesourcing** companies including Uber and Lyft may provide a new mobility option – particularly attracting younger, higher educated citizens – they may weaken the capacity of cities to live within ecological limits, particularly in downtown areas. There is early evidence that ridesourcing replaces some public transit, walking and cycling trips; evokes only modest changes in car ownership levels; and has an unknown impact on vehicles miles driven. There are also indications that ridesourcing is inducing entirely new vehicle trips. Health impacts are unknown and there are concerns related to the treatment of workers. Ridesourcing drivers are independent contractors without job security or benefits whose net hourly wage including all costs is above current US and Canadian minimum wages but below minimum wage increases underway, and below the living wage for households with children.

Local governments and transportation agencies may be able to use ridesourcing as a tool to move people out of single occupant vehicles and contribute to more sustainable transportation by:

1. Developing partnerships between ridesourcing companies and suburban municipalities or transportation agencies in order to fill transit gaps and foster first/last mile integration;
2. Exploring the use of ride-splitting services like UberPool, LyftLine and Sidecar Shared Rides to scale carpooling, particularly for commuting to work.

Local governments will want to watch current legal debates happening at state and provincial levels that will determine whether ridesourcing drivers are considered independent contractors or employees in the future. The latter will likely improve labour conditions for ridesourcing drivers.

# 3a.1

## WHAT IS SHARED MOBILITY?

Shared Mobility is the access to transportation services shared amongst users on a short-term, as-needed basis that includes: public transit; bike and scooter sharing; carsharing; ridesharing (vanpooling and carpooling); ridesourcing (e.g. Uber or Lyft); taxis; micro-transit; and commercial delivery services.

The rapid proliferation of smart phones has given rise to an array of transportation apps that make shared mobility possible with demand generated by some major trends:

- Millennials[1] born between 1981 and 2000 who comprise about 30% of North America's population, are moving back into cities and have a much-reduced interest in driving, due to its cost and a desire to stay connected through social media;
- Baby boomers are also increasingly moving back into cities and have less interest or ability in driving and their interest in health is promoting more active transportation;
- A major shift towards a "work anywhere, anytime" mentality, with an increase in people who want to be able to work while getting around; and
- The proliferation of the digital Sharing Economy, which has prompted a broader acceptance of access to goods over ownership and the ability to access commonly held goods through information technologies.[2]

Taken together, these trends have led to a peak in a driving and a proliferation of Shared Mobility options.

## SHARED MOBILITY MODES

### PUBLIC TRANSIT

Publicly owned transit is the foundation of shared transportation and is increasingly adopting digital technology to enhance the ease and reliability of service. There are two stages of evolution:

- Fixed-schedule and real-time transit apps such as NextBus, Moovit, TransitApp and Google Transit.
- Multi-modal apps that provide users with real-time trip options with times and pricing for a mix of modes including transit, bikeshare, taxi, carshare, rideshare (carpool), biking, walking and driving. Examples include: RideScout and CommunAuto.

### BIKE SHARING

An innovative transportation program, bike sharing is an ideal option for short journeys, as well as first and last mile supplements to regional bus, metro, and train services. Users are able to pick up a bicycle at a self-serve station and return it to another at the end of their journey, or rent a bicycle directly from its owner. Users can pay via mobile app for many forms of bike share, or directly by cash in peer-to-peer transactions. Bike sharing has been growing rapidly in recent years in large part due to the proliferation of information technologies that allow for real time reservation of bicycles, locating docking stations, and payment and account management. There are three main bike sharing models:

1. **Municipal public bike sharing systems:** This model has cities, counties, etc. engaging in the funding, managing, administering, and permitting of a bike sharing program within their jurisdiction.[3] Municipalities often partner with sponsoring organizations, as with the recently renamed Santander Cycles in London, UK, and New York City's Citi Bike system. Mobile apps allow users to find available bicycles and to manage their accounts, and membership is open to the public.[4] Some municipalities are introducing electric bike sharing including Corner Brook, Newfoundland.
2. **Closed-community bike sharing:** Typically found on college campuses and has a closed membership model available only to students or members of participating organizations. Rentals are typically round-trip. Many college and university campuses in North America have such bike share services available.
3. **Peer-to-peer bike sharing:** Individuals rent bicycles by the hour directly from other individuals or from bicycle rental shops.[5] The most notable example is Spinlister, which is a peer-to-peer bike share app operating in New York and San Francisco.[6] There are also bikes swaps emerging such as the Detroit Bicycle Show and Swap Meet.[7]

### SCOOTER SHARING

An operator-owned fleet of motorized scooters made available to users by the hour or minute (e.g. ScootNetworks with electric scooters in San Francisco).[8]

## CARSHARING

Provides members access to a car for short-term rental - usually on an hourly basis - but some provide daily options or longer. The cars are distributed across a region or city and can be accessed at any time with a reservation. Members are charged on a time or mileage basis. There are three primary carsharing models:

1. **Two-way or return trip:** the traditional model that involves returning the shared car to the pick-up location. Once reserved, access to the car is restricted to the reserving member. Most trips (80%) are non-work related e.g. Zipcar and Modo (Vancouver).
2. **One-way (aka free-floating or point-to-point):** a newer model where customers pick up and drop off cars in different locations, e.g., Car2Go. Members pay by the mile for leisure and some work trips, but not daily commuting. The latest trend is for two-way companies to add a one-way option. For example, Communauto in Montreal has added electric and hybrid vehicles for one-way rental and Zipcar announced a pilot of one-way carsharing in Boston in May of 2014.
3. **Peer-to-peer:** individuals list their cars on a web platform and renters use an App to reserve and meet the owner to pick up the keys. The company handles the transaction and keeps a percentage, wiring the rest to the car owner's bank account. (e.g. RelayRides and GetAround).

## RIDESHARING

Focused on filling empty seats in vehicles in order to optimize occupancy potential. The passenger has a common destination to the driver who has a non-profit motivation (e.g. to partially cover costs). There are a number of key evolutions:

- Traditional ridesharing includes carpooling (travellers group together in a privately owned vehicle, typically for commuting) and vanpooling (sharing of a van by commuters travelling to and from a job center).
- Since 1994, ridematching platforms have enabled more reliable matching of regular, recurring trips e.g. eRideshare.com and boontrek with some using existing platforms such as Newfoundland Rideshare that matches people on Facebook or ride sharing connections made on Kijiji to get to and from Whitehorse in the Yukon.[9]
- Since 2004, real-time ridesharing apps allow drivers and passengers to match up before a trip starts and share costs e.g. carma, PoolXing (just around Washington DC) and Enterprise Rideshare. For more information see 'Introduction to RideSharing'.[10]

## RIDESOURCING[11]

On-demand car services where users "source" rides through a mobile app from a pool of private passenger vehicles driven (usually) by a non-professional driver. The apps communicate passenger location to the driver via GPS and charge a distance-based fee, of which about 80% goes to the driver and the remainder to the ridesourcing company. Ridesourcing drivers usually are not already travelling to the same destination as passengers and the driver's motivation is to earn income. This makes ridesourcing more similar to a fee-based taxi service than ridesharing where driver and passengers have a common destination and a non-profit arrangement.

Ridesourcing models are quickly evolving:

- Uber, Lyft and Sidecar were the first stage of ride-sourcing that involves a driver using their own car to pick up one passenger or more than one who know each other.
- New business variations UberTax, UberBlack, Uber SUV and UberLUX that use dedicated drivers and Uber vehicles on a for-hire basis; the rates vary with how luxurious the vehicle is;[12]
- UberPool and LyftLine – an app that allows strangers to share Uber and Lyft rides and split the cost.
- New ridesourcing companies that cater to specific populations e.g. UberASSIST is aimed at providing services for disabled users,[13] Lift Hero[14] for seniors is in beta testing in San Francisco and Shuddle[15] is a start-up ride service for busy families where caregivers take children to school or soccer practice.

## TAXIS

Taxi companies are also now evolving in various ways in order to compete more effectively with Shared Mobility options, particularly ridesourcing companies:

- Taxi companies are adopting app-based dispatches - e.g. FlyWheel in New York City is used by 80% of

taxis; others are Hailo and Curb.

- The Pennsylvania Public Utility Commission (PPUC) approved Yellow Cab Company's application in 2014 to establish a peer-to-peer ridesharing service, known as Yellow X.
- In December, 2014, the cities of Chicago, Washington DC and New York City all announced they would be incubating or developing new e-hailing mobile taxi apps,[16] which hail taxis from any company.

**MICRO-TRANSIT**

Micro-transit is a form of private transit that relies on big data to plan flexible routes with limited stops and no transfers.[17] Users can pay by the ride, buy multi-ride packs or sign up for monthly subscriptions. The buses and vans guarantee every rider a seat and have luxury items like wifi. Examples include: Leap Transit[18] or Chariot[19] in San Francisco or Bridj[20] in Boston (and now Washington). Dynamic vanpools like Via[21] in New York and the newer carpooling evolutions UberPool and LyftLine are often included in this category.

**COMMERICAL DELIVERY SERVICES**

Uses apps to make commercial deliveries more efficient by pairing up loads in real-time with nearby drivers. The intent is to help truckers make more money by filling unutilized capacity and make goods movement more efficient through shorter routes and loading wait times. Examples include: Transfix,[22] Cargomatic[23] and Zipments.[24]

Cargomatic appears to be achieving particular success at ports through its "free flow" service. It does this by matching containers to the next available Cargomatic truck versus matching specific trucks to specific containers, an approach often requiring wait times of up to two hours.[25] The Port of LA has very recently decided to do a pilot with Cargomatic to speed up freight movement.[26]

# 3a.2

## DOES CARSHARING ADVANCE LIVING WITHIN ECOLOGICAL MEANS?

In order to consider if carsharing contributes to the ability of cities to live within ecological means, we reviewed the transportation plans of USDN member cities to find those with bold, transformative goals linked to reducing greenhouse gas emissions up to 80 percent by 2050. We also considered the traits of transportation that align with a one-planet ecological footprint by consulting with William E. Rees, Professor Emeritus at the University of British Columbia and Director and Co-founder of One Earth, best known for creating Ecological Footprint analysis alongside Mathis Wackernagel. We also consulted with Dr. Jennie Moore who is a Senior Associate with One Earth and who focused her doctorate on One Planet Cities.

In a paper exploring 'Ecological Footprints and Lifestyle Archetypes',[27] Jennie Moore describes the characteristics of one planet transportation:

> *"There is low to no ownership of motorized passenger vehicles. Approximately 19% of the population uses public transit for commuting purposes. Personal motorized vehicle travel averages 582 km/ca per year"*[28]

Moore also provides a range of specific benchmarks for transportation that would ensure that a city's average household aligns with, or exceeds, global per capita ecological carrying capacity.[29]

While strong, one-planet goals for transportation may seem unattainable, phased targets could accompany these goals over time. We use these phased targets in the following table and subsequent analysis in order to consider whether carsharing moves cities in the "right" direction towards living within ecological means. We first consider the impacts of traditional two-way carsharing before considering newer variants of one-way and peer-to-peer carsharing.

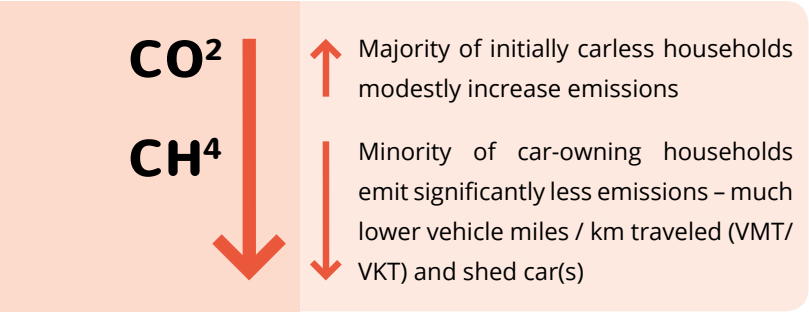
## Table 3a.1
### TRADITIONAL CAR SHARING'S CONTRIBUTION TO "LIVING WITHIN ECOLOGICAL MEANS"

| STRONG, ONE PLANET TRANSPORTATION | MOVES CITIES IN THE RIGHT DIRECTION?[30] |
|---|---|
| **Strong increases in non-auto modal share - transit, bike, walk**<br>(e.g. 60% in 2030; 86% one planet in 2050) | **Mixed impact**<br>· *cycling & walking* – overall increase but individuals both increase and decrease these modes;<br>· *transit* – see below |
| **Increases in transit ridership**<br>(e.g. 9% on average; up to 40%+ in low ridership cities by 2050) | **Mixed, neutral, impact**<br>· on average slight reduction in transit use<br>· initially carless citizens use transit less;<br>· initially car owning citizens use transit more[31] |
| **Major reductions in Vehicle Kilometres / Miles Traveled (VKT/ VMT)**<br>(e.g. 71% by 2030 in Seattle; 78% one planet in 2050) | **Yes, but mixed impact**<br>· on average, car sharers drive 27% to 43% fewer miles annually<br>· initially carless people drive more[32]<br>· carsharers may drive more in first year and then reduce[33] |
| **Major reduction in private car ownership**<br>(e.g. 96% for one planet in 2050) | **Yes**<br>each shared car replaces 9 to 13 cars;<br>25% car-sharers shed a car;[34] another 25% postponed purchases |
| **Major increase in electric vehicles**<br>(ALL electric for 2050 one planet) | **Modest**<br>Electric vehicles in carsharing fleets – 5.1% hybrid; >0.1% plug-in hybrid; >0.8% battery electric[35] |

## CONCLUSION:

Aggregate greenhouse gas emissions of traditional car-sharing households are lower because of reduced rates of car ownership and vehicle miles / km travelled.[36]

While the majority of initially carless households increase their emissions, carshare members who owned a car(s) when they joined decreased their emissions significantly by driving much less and selling off a car or two. When members pay for carshare use by the hour or km / mile, they are incented to drive less, take another mode or trip chain (do many stops on one trip, take longer trips as compared with taking lots of separate, little car trips).




Reductions in carbon emissions may also depend on the nature of the cars being shared. Carsharing services that provide luxury or larger vehicles reduce emissions and ecological footprints less than those offering smaller and/ or electric vehicles.

## DO GREENHOUSE GAS EMISSIONS FROM CARSHARING VARY WITH URBAN FORM?

As Martin and Shaheen (2010) hypothesize:

> *"Carsharing impacts are potentially greater in low-density environments where car ownership is more widespread and driving distances are longer."*

A study involving Flexcar in Portland in 2003 found that higher percentages of users in neighbourhoods with lower mixed-use values walked more often or much more often.[37] However, Martin and Shaheen (2010) had inconclusive findings:

- Carsharing is effective at lower emissions when urban densities are less than 38,000 / square mile;
- There is a possibility that carsharing in ultra high-density cities is less effective in reducing emissions than mid to lower-densities; and
- The economic barriers to carsharing as the urban environment becomes more auto-dependent reduce the potential for lowering GHG emissions.

## MIXED IMPACT OF TRADITIONAL CARSHARING ON TRANSIT

Cities will not live within their ecological means unless the majority of trips are taken by non-car modes (up to 86%). Carsharing shows mixed evidence here in terms of encouraging non-car travel – the evidence is more modest than often reported. For example, the Spring 2015 report 'Mobility and the Sharing Economy: Impacts Synopsis' authored by Dr. Susan Shaheen and Nelson Chan states that:

> *"More carsharing users increased their overall public transit and non-motorized modal use (including bus, rail, walking, bicycling and carpooling).*[38]

Yet the 2011 study upon which this conclusion appears to be founded states that carsharing contributes on average to a slight reduction in transit use overall.[39]

## CONCLUSION:

There are indications that, in the majority of cases, carsharing contributes to a statistically insignificant impact on transit usage, whether a slight increase or decrease. However, a minority of carsharing organizations report a statistically significant reduction in transit usage.

Unfortunately, due to anonymity requirements no details are known about the nature of carsharing organizations that resulted in these reductions in transit usage. We can find some hints, however, by analyzing studies conducted by carsharing organizations themselves. For example, City CarShare based out of San Francisco and the largest non-profit carsharing organization calls itself a transit-oriented carshare which creates many combined trips. For example, nearly 20% of members get to their City CarShare vehicles by transit – a figure that jumps to 55% when cars are located at transit stations.[40] So, it may very well be that the conscious integration of carsharing and transit is one factor that contributes to the impact of carsharing on transit usage.

## DOES ONE-WAY CARSHARING CONTRIBUTE TO LIVING WITHIN MEANS?

The research about the environmental benefits of one-way carsharing is much less developed. City administration officials in Seattle made the sharing of operational and member survey data by Car2Go a requirement of a pilot launch in 2013 and published their analysis in May, 2014[41] which showed mixed results:

**Positive environmental impacts:**

- 39% carshare members gave up a car or are considering it
- 35% traveling fewer miles in personal vehicles
- 39% using personal cars less often since joining

**Negative environmental impacts:**

- 47% carshare members ride transit less frequently
- 63% have not changed miles travelled in their personal vehicle

The City of Seattle concluded that it was unclear how free-floating carsharing was affecting boarder transportation choices throughout the city. However, it did lead to the permanent introduction of one-way carsharing with a range of new policies, including a data sharing agreement, that are explained in more detail in Box 5.1: Data Sharing as Part of 120-Day Ridesourcing Pilot Program.

## CONCLUSION:

We can conclude from the initial Seattle data that free-floating carsharing when considered in isolation of other modes:

· has a positive impact on reduced car ownership levels;

· a questionable impact on VMT/VKT;

· and a potentially negative impact on transit ridership.

In a discussion with the LGSE advisory committee, however, it was pointed out that one-way carsharing when combined with two-way creates a comprehensive mobility package that allows car-sharers to reduce or avoid private car ownership and to drive less overall.

## DOES P2P CARSHARING CONTRIBUTE TO LIVING WITHIN MEANS?

Research on peer-to-peer carsharing is again quite limited. Demailly and Novel (2014) conclude the following:

> *"Apart from the sustainability of products, we can expect similar positive conclusions from an environmental point of view due to the transformation of the mobility package."*[42]

Yet the sustainability impact of P2P carsharing is likely more nuanced, with both positive and negative sustainability points:

**Positive – peer-to-peer carsharing:**

- Uses already manufactured cars so reduces embodied energy usage
- Lowers deployment costs so there is more potential in suburban areas

**Negative – peer-to-peer carsharing:**

- Has no controls on the nature of the P2P cars – users can rent cars of varying ages and emission profiles e.g. from electric smart cars to Hummers
- Subject to the rebound effect – there is evidence that some people are buying a second car just for P2P car sharing[43]

## CONCLUSION:

Like many areas of the Sharing Economy, the overall impact of peer-to-peer carsharing is uncertain. The most potentially troubling aspect ecologically is that some people are buying a second car to share. On the other hand, P2P carsharing has the potential to expand into less dense, suburban areas and reduce car ownership levels with minimal, if any, impact on transit usage.

BOX 3A.1

### HOW ELECTRIC IS THE CARSHARING INDUSTRY?

Deep carbon and footprint reductions require a transition to electric vehicles. What is the percentage of carsharing fleets that are electric? And what role might local government play in enabling expansion?

A 2014 Report on Electric Vehicles in Carsharing fleets in Canada[44] conducted by the Carsharing Association found that "adoption of EVs in carsharing fleets in Canada is very, very low, but the interest level from carsharing operators is high." The penetration of electric fleets in carsharing at the time of the study was: 5.1% hybrid, >0.1% plug-in hybrid and >0.8% battery electric. These numbers are cited by the author as being reasonably accurate of the industry as a whole.

Expanding electric vehicles in carsharing WAS a subject of an Electric Vehicle Carsharing Panel at the 2015 Carsharing Conference held in Vancouver in September 2015.[45]

## DO CARSHARING BENEFITS REBOUND?

Absolute reductions in carbon emissions and footprint also require that carsharing avoids rebound effects in which reduced impact leads to new activities and behaviors that increase impact. Rebound effects in this case might include: 1) members of initially carless households becoming dependent on driving and buying a new car when they can afford to; or 2) savings earned from carsharing being directed into higher levels of consumption in other areas (e.g. flying to Mexico for a winter vacation).

The rebound effect has not been measured in any research known to the authors and warrants further research. Carsharing companies with an explicit emphasis on promoting sustainable lifestyle behaviours may serve to minimize the rebound effect. For example, many carshare co-operatives view carsharing as part of a multi-modal shift away from car usage and focus on this in their marketing efforts. Some, such as Modo in Vancouver, go further to offer their members a variety of sustainable lifestyle perks such as discounts for: cycling gear, education and events; veggie garden installation and seeds; and carpooling to the nearby town of Whistler.

In contrast, for-profit car-sharing entities tend to send more diluted or mixed messages in terms of promoting sustainable lifestyles. For example, DriveNow who have exclusively electric cars offer a Fly and Drive program that makes it easy to drive to and from the airport and pick up a DriveNow car in another global city.

# 3a.3

## DOES RIDESOURCING ADVANCE LIVING WITHIN ECOLOGICAL MEANS?

Ridesourcing involves users "sourcing" rides through a mobile app from a pool of private passenger vehicles driven

by a non-professional driver who works (most often) on a part- time basis. As with other areas of the Sharing Economy, ridesourcing impacts are not well documented. Rayle et al with the University of California Transportation Centre released the first peer-reviewed research on ridesourcing as a white paper in November 2014. It involves an intercept survey of ride-sourcing users at three locations in downtown San Francisco,[46] comparing ridesourcing results with taxi trip and user data, and travel times on transit.

We primarily draw from this study, supplemented by additional secondary research, to consider how ridesourcing contributes to strong, one-planet transportation. The San Francisco intercept study focuses primarily on social evening trips and underestimates other trips such as those for commuting, airport travels and errands, so it can only provide an indication of the broader ridesourcing market.

The white paper authors conclude that:

> *"Although still exploratory, these findings nevertheless indicate ridesourcing enriches mobility options for city dwellers, particularly in large, dense cities like San Francisco where parking is constrained and public transit incomplete. Thus, outright bans on ridesourcing would negate these mobility gains."*[47]

The key reasons for enriching mobility cited in the study are that ridesourcing provides:

- *shorter wait times than taxis* – primarily downtown but also some evidence in outer city locations where public transit and traditional taxi service are sparser (other studies have found similar results);[48]
- *a fast point-to-point option for generally younger, higher educated users* for social trips, while avoiding the inconveniences of driving like parking and having to drink and drive;
- *some complementarity with transit* – the majority of ride-sourcing trips saved 10 minutes over public transit; and
- *higher occupancy than taxis* – 1.8 in ridesourced cars vs. 1.1. in taxis.

There is conflicting evidence as to whether ridesourcing is less expensive. [49] Transit service in many cities is often less frequent in the evenings and so ridesourcing may provide a new mobility choice which public authourities cannot provide efficiently. The LGSE Project, however, is concerned not just with enriching mobility options but doing so in strongly sustainable ways that help cities live within their ecological means. Table 3a.2: Ride-Sourcing's Contribution to Living within Ecological Means, draws from the full range of details in the White Paper.

## Table 3a.2
### RIDE-SOURCING'S CONTRIBUTION TO "LIVING WITHIN ECOLOGICAL MEANS"

| 2050 ECOLOGICAL SUSTAINABILITY GOALS | TRADITIONAL RIDE-SOURCING[50] (IN DOWNTOWN EVENING CONTEXT FOR PRIMARILY SOCIAL TRIPS) |
|---|---|
| **Strong increases in non-auto modal share – transit, bike, walk**<br>(e.g. 60% in 2030; 86% one planet in 2050) | **No**<br>· Replaces some transit, biking and walking trips (43% in SF study) |
| **Increases in transit ridership**<br>(e.g.9% on average; up to 40%+ in low ridership cities by 2050) | **Unclear, mixed impact**<br>· Competes with transit (33% would have bused)<br>· Complements transit (66% of ridesource trips would have taken at least twice as long by transit) |
| **Major reductions in Vehicle Kilometre / Miles Traveled (VKT/ VMT)**<br>(e.g. 71% 2030 in Seattle; 78% one planet in 2050) | **Unclear, mixed impact**<br>· 60% of users drive the same amount; 40% drive less<br>· Induces new car trips (8% modest estimate)<br>· Mileage driven between trips not documented |
| **Major reduction in private car ownership**<br>(e.g. 96% for one planet in 2050) | **No**<br>· 90% of users do not change car ownership levels |
| **Major increase in electric vehicles**<br>(ALL electric for 2050 one planet) | **No**<br>No control over the nature of cars driven<br>· Uber in Chicago piloting 25 EVS – rent or lease to own |

## CONCLUSION:

When considering the table above, we have some major concerns that ridesourcing, particularly in downtown locations, may weaken the aspirations of cities to live within ecological limits because there is evidence that it:

- moves (non-car) modal split in the wrong direction – 43% would have walked, biked or taken transit instead;
- has an unclear, mixed impact on transit ridership that includes some strong competition – 33% would have taken the bus instead;
- the impact on vehicles kilometres / miles travelled is unknown and there is evidence that it induces new car trips (8% new trips modest estimate); and
- it does not appear to evoke changes in car ownership levels which would suggest weaker support towards more car free or car-reduced lifestyles.

# 3a.4

## DO CARSHARING AND RIDESOURCING ADVANCE OTHER SUSTAINABILITY DIMENSIONS?

While the LGSE Project is concerned with "living within ecological means" as a primary filter, sustainability is strongest when it's moved forward in tandem with other goals such as resilience, equity, prosperous and local economies, and quality of life.

### DO CARSHARING AND RIDESOURCING ADVANCE RESILIENCE AND CLIMATE ADAPTATION?

Some carsharing and ridesourcing platforms are contributing to city emergency preparedness.

In June 2013, BayShare, an organization dedicated to sharing goods and services, announced a partnership with the San Francisco Department of Emergency Management to explore together how the city could become more resilient before, during and after an emergency. BayShare also joined the San Francisco's Disaster Council[51] – a group chaired by Mayor Lee and has contributed to the city's new disaster preparedness website, SF72.org.

BayShare includes four carsharing organization and two ridesourcing companies. Padden Murphy, head of public policy for GetAround, explains that being part of disaster response efforts fits with his company's mission:

> *"We are already providing a public good, so the next step of how we can help in times of a crisis was kind of a no-brainer."*[52]

In the case of an emergency, cars registered on the GetAround site would still be available for use, but owners could also make them available free of charge to people without transportation. In addition, trucks or other large vehicles (which would not normally be available) could quickly be registered on the site during a disaster, making them available to move materials or get people out of harm's way. GetAround announced in 2014 that it is planning to launch a disaster assistance policy and Web portal to help educate people about how to find or share a vehicle following a disaster.[53]

### DO CARSHARING AND RIDESOURCING PROTECT AND RESTORE NATURAL SYSTEMS?

Ridesourcing and carsharing reduce the need for parking spaces – with carsharing contributing the most – possibly reducing demand for new parking space on natural lands.

Ridesourcing cars are not parked, except at the owner's personal residence, so in theory that means reduced demand for parking. Yet it is not as straightforward as every Uber car resulting in one less parked car. The impact must consider that according to the recent San Francisco intercept study only 7% of ride-sourcing drivers would have driven had they not ride-sourced; the remaining 93% would have taken modes that didn't lead to a parked car anyway.[54]

Carsharing research shows that a single carshare vehicle can replace between nine and 13 individually owned cars.[55] Fewer cars means less land is needed for parking, potentially preserving more in its natural state and more roadspace for other uses such as sidewalks, parklets and bike. The University of Ottawa, who has partnered with VRTUCAR to make carsharing available on campus, cites the following potential benefit on their website:

*"Car sharing helps reduce the amount of space used by vehicles. One car share vehicle can replace up to 20 vehicles! On campus, that's the size of parking lot A, in front of Tabaret Hall!"*[56]

## DO CARSHARING AND RIDESOURCING ADVANCE EQUITY AND EMBRACE DIVERSITY?

Current usage of carsharing and ridesourcing amongst low-income communities is below that of the general population.

Low-income communities typically face longer commute times and higher fares than their middle and upper income counterparts. While there is a range of anecdotal evidence about whether low-income communities benefit from carsharing and ridesourcing, we highlight a report released in October, 2014, prepared by the Institute for Transportation and Development Policy for Living Cities.[57] This report reviews over 60 professional or peer-reviewed articles, complemented by interviews and with oversight by shared transportation leaders such as Dr. Susan Shaheen. It concludes that:

*"Low-income people usually make up a small proportion of all shared mobility users, and those that do take advantage of the programs are a small share of their overall community."*[58]

Anecdotal evidence about racial discrimination in the platforms that rely on peer-to-peer interaction, notably ridesourcing and peer-to-peer carsharing, are mixed. Some believe that ridesourcing is less discrimatory than taxi cabs because drivers respond to a request without seeing a photo, which is in stark contrast to hailing a taxi on a street.[59] However, the growth of taxi-hailing apps may erode this difference if it exists. Others believe it's not so straightforward:

*"Because drivers can reject riders for any reason, you have no way of knowing whether it's because of your rating, your name (from which race can often be inferred), or the neighborhood you're in."*[60]

Some have documented a practice called "redlining" where Uber drivers avoid areas that they consider poor or dangerous. Or, as one Uber driver states:

*"If I have just dropped off in a scary area, I'll turn off the app, drive back to a better area, then turn it back on."*

While taxis are required by law to serve all members of our community, Lyft and Uber are not required to operate under the same anti-redlining legislation. Similar challenges are emerging around disabled and elderly passengers with Uber and Lyft both facing lawsuits for failing to accommodate the disabled.[61] Uber is responding with an UberASSIST app option that provides users with an opportunity to call specially trained drivers with cars that can accommodate wheelchairs, walkers and scooters.[62] Supporting the disabled and elderly is part of the training to become a taxi driver in many jurisdictions but is not required by ridesourcing providers.

Ridesourcing usage is higher amongst younger persons, particularly millenials, and this may also be true for carsharing.

Shared mobility experts and studies contend that shared mobility is slanted towards greater participation by millennials.[63] The most recent intercept study of ridesourcing in downtown SanFrancisco reinforces this conclusion learning that 73% of users were 34 years of age or younger.[64] If carsharing and ridesourcing are to scale effectively they need to go beyond millenials. New ridesourcing start-ups catering to seniors (Lift Hero) and the children of busy families (Shuddle) are exploring non-millenial markets.

## DO CARSHARING AND RIDESOURCING ADVANCE A PROSPEROUS, LOCAL ECONOMY?

Car sharing and ridesourcing can help members save money, thus contributing to more affordable living and possibly more local spending.

### TRADITIONAL CARSHARING

50% of carshare members either shed a car, or do not buy one, contributing to extra household discretionary income which could be allocated to local spending. Carsharers also have lower annual costs for transportation, about 1/10th of the average car owner.[65]

The integration of carshare agreements into new multi-family developments can also reduce living costs.[66] Non-car owners can opt out of paying for a parking space and it provides an option to reduce or eliminate car ownership with associated annual savings.[67] There are some claims that carsharing can bring down the cost of housing by reducing the number of expensive parking spaces built.[68]

### PEER-TO-PEER CARSHARING

The balance of evidence suggests that RelayRides is cheaper than using a traditional rental company.[69] RelayRides claims that they are 35% cheaper.[70] Again, this can increase household discretionary income.

### RIDESOURCING

A 5 mile, 10 minute traditional ridesourcing trip using Uber is cheaper than taking a taxi in all North American cities barring New York City, except when "surge pricing" comes into effect. How much cheaper varies with each city and driving conditions. Heavy levels of congestion make Uber more costly, which is why taxis are still cheaper in New York.[71] Uber is not cheaper, however, when surge pricing reaches a certain level, ranging from 1.1 to 1.7x regular pricing levels.[72]

Whether these household savings are reinvested locally is difficult to determine. The strongest assertions are found with non-profit and cooperative carshare entities. For example, City CarShare makes the claim that "since car-sharing members pay for each use, they are more likely to walk to the local store for basic items."[73] They also provide discounts for local businesses, which may reinforce this statement.

Peer-to-peer carsharing is a way to make extra, casual income that may or may cover your total costs, including the value of your time.

Those who share their car through peer-to-peer carsharing can make money from an otherwise idle asset of their car. RelayRides CEO Andre Haddad claims: "on average they make around $200 per active owner per month—more than offsetting the cost of your vehicle.[74]

According to RelayRides, those who are making more significant money – up to $1000 a month and some more – are doing high volumes of rentals by making the car available a lot and pricing it on the lower side.[75]

The average net pay of an Uber driver as of March, 2015, is above the national US minimum wage before taxes but less than proposed increases to minimum wage in many states and below living wages for households with children.

There are claims that driving for Uber is more lucrative than working for a taxi company because it has far fewer costs than a regulated taxi company — the cost of medallions, owning and maintaining a fleet of cars and paying for full commercial insurance. However, Uber drivers must shoulder many costs accounting for 20% of gross earnings such as those for car insurance, gas, maintenance and car payments.[76]

Uber has made a series of rate cuts in 2014 that are continuing in some cities in 2015. Rates are down anywhere from 20-70% from two years ago. Uber claims that decreased fares lead eventually to more riders, and therefore more overall earnings; many articles cite it as a competitive strategy against rivals like Lyft and the taxi industry.

Uber doesn't account for drivers having to work harder for their money, nor factor in higher gas costs and greater vehicle wear-and-tear.[77] Uber drivers have said that the rate cuts have reduced their incomes significantly or required them to drive more hours to maintain income levels.[78]Some decided to only drive on weekends when there's surge pricing;[79] others stopped driving entirely.

Emily Guendelsberger, a journalist for Philadelphia CityPaper, worked undercover as an Uber driver starting in January, 2015, after rate cuts of close to half. She calculated her own numbers and interviewed some Uber drivers finding that:

- No Uber drivers said the cuts were beneficial; two who shared their data showed average net income drops from $15.62 to $10.53 per hour.
- Her net driving rate after the cuts was $9.34 before taxes leading her to conclude: "driving for UberX is the worst-paying job I've ever had. If I worked 10 hours a day, six

days a week with one week off, I'd net almost $30,000 a year before taxes."[80]

After some email prompting, Guendelsberger was able to learn from Uber that the average net income of Uber drivers in March, 2015, was $15.41/hour after the company's commission and safety fee. Subtracting 20% for average driver costs (gas, insurance, maintenance etc.) the real, cost-adjusted average wage was $12.33 an hour.

Others who have written about their Uber driving experiences corroborate Guendelsberger's experience.[81] There are some Uber drivers documenting positive experiences and higher wages, but these tend to be those that work part-time during demand times with surge pricing.[82]

## CONCLUSION:

If we accept Uber's numbers, the average net wage including all costs is $12.33, which is above the US national minimum wage of $7.25 but below new minimum wage raises underway, ranging from $13 in Chicago to $15 in San Francisco and Seattle.[83] It provides a living wage for one-person, and some two-person households, but not for any households with children in major North American metropolitan areas.[84]

Ridesourcing drivers are independent contractors with no benefits or job security and unclear firing policies; a recent legal ruling in California currently being appealed determined Uber drivers are employees.

Uber drivers are considered independent contractors and so responsible for paying their own taxes as self-employed persons. They have no job security and are subject to rate cuts without notice as ridesourcing rivals compete for market share. Uber may terminate drivers if their 5-star ratings drop below 4.6; the company also has no clear firing policy, which has come under criticism.[85]

Whether Uber drivers should be considered employees, rather than independent contractors is under debate. The California Labour Commission recently ruled that Uber drivers are employees, not contractors citing that the company is involved in every aspect of operation:

> *"Uber controls the tools driver use, monitors their approval ratings and terminates their access to the system if their ratings fall below 4.6 stars."*[86]

Uber is appealing the ruling citing driver autonomy. Earlier in 2015 a Florida state agency ruled that Uber drivers are employees, while other states previously have ruled them contractors. Hillary Clinton provided her opinion on the matter of the 'gig economy' and its impact on workers. While Clinton did not directly name Uber or Lyft, she did note that the Sharing Economy is: "raising hard questions about workplace protections and what a good job will look like in the future."[87]

Fleet management savings are generated for local government, businesses, non-profits and other public agencies who may invest the savings back into the local economy.

Some local governments have converted their fleet cars to shared car fleets. For example, the City of Philadelphia recently joined Philly CarShare as an organizational member, allowing City employees to use car-sharing vehicles – and the City to save money by selling 400 municipal fleet cars.[88] The City CarShare report Bringing Car-Sharing to Your Community notes that many other businesses, public agencies and non-profits have realized that carsharing is a more cost-effective and higher quality alternative to managing their own fleets.[89]

Carsharing and ridesourcing contribute most to regional economies and job creation in cities where offices are located; cooperative models may contribute more to prosperous, local economies than corporate models.

Carsharing and ridesourcing companies bring new jobs to many of the cities where they locate. Zipcar and Car2Go, have offices in major cities across North America, employing a range of employees in areas such as management, marketing, fleet technicians, customer service and sales. Likewise, car co-operatives have offices in the cities where they are located. Ridesourcing companies Uber and Lyft have head offices in California, but do not have offices in other North American cities, thus reducing the local economic benefits.

There are significant differences here between corporate,

and non-profit and co-operative models worth examination in terms of contributing to prosperous, local economies.

- Co-operatives and non-profit carshare companies are rooted in specific places with local employees and management and with profits earned recirculating directly back into the local economy. Some provide discounts with local businesses and organizations reinforcing a commitment to local economies.
- In contrast, entities like ZipCar are multinational corporations with operations in 175 countries listed on the NASDAQ stock market. Any city who has a ZipCar office, with the possible exception of Boston which hosts the head office, is subject to decisions made far away. ZipCar's corporate structure also means that monies earned in one city flow outside the city to executives and shareholders and need to adapt to the vicissitudes of the NASDAQ and global financial flows.

If a local government has the development of a prosperous, local economy as a priority then non-profit and co-operative carshare models may make a greater contribution. It is important to consider, however, that there may be positive synergies between co-operative and for-profit models where the latter help to provide conditions conducive to the scaling of the former. For example, personal correspondence with Modo in the City of Vancouver suggests that individuals may sign up initially with ZipCar and then switch to Modo as they become accustomed to carsharing and seek a local company or a cooperative model.

## DO CARSHARING AND RIDESOURCING ENSURE QUALITY OF LIFE?

Carsharing increases rates of walking and biking for some users, but reduces it for others and keeps it the same it for the majority; overall health benefits are unknown.

Martin and Shaheen (2011) found the following changes in active transportation rates:[90]

**Walking - 2% more people increased walking trips**

- 11% increased trips
- 9% decreased trips
- 80% no change

**Cycling - 6% more people increased their biking trips**

- 9% increased their cycling trips;
- 3% decreased
- 88% no change

Jennifer Kent analyzed peer-reviewed literature about the health impacts of carsharing from 2005 to March 2013.[91] She found that while carsharing does contribute to reduced vehicle ownership and changed travel behaviour, there are only potential associated health impacts and more rigorous research is needed to determine the actual impacts on health.

The potential health impacts of ridesourcing are minimal, if any, and warrant further study.

The recent study from San Francisco did not focus on health but points to a few results that suggest a limited contribution:

- 90% of ride-source users do not get rid of their car;
- 10% of ride-source users would have biked or walked had they not ride-sourced.[92]

There are some outstanding questions worthy of further exploration: do the 10% that get rid of a car walk or bike more as a result of car reduced lifestyle? And if so, what is the overall impact on health?

Carsharing and ridesourcing likely do not contribute strongly to social connectivity – possibly connectivity increases somewhat more with co-operative carsharing models.

Carsharing where a user accesses a car from a shared fleet using a phone or electronic key does not involve a personal connection. There is no opportunity to enhance social connectivity in this case. The exception is that some users anecdotally note that they use car-sharing services to make social visits, for example, to visit a sick friend – a trip they would not have decided to make on public transit if transit distance and the required time commitment is too long.

Cooperative carshare models such as Modo based out of Vancouver can involve more opportunities for relationship building than in the carsharing interaction itself. While mobility and cost savings motivate many members, some align with Modo's cooperative mission to reduce reliance on fossil fuels and carbon emissions. According to Hilary Henegar, Modo's Marketing Director: "some members volunteer at events and in other ways, thereby forming bonds with each other and Modo's team. Some also attend the AGM every year and have known each other for over a decade now."[93]

# SHARED MOBILITY SUSTAINABILITY SUMMARY

## LIVING WITHIN ECOLOGICAL MEANS

Traditional carsharing reduces greenhouse gas emissions because of the reduced rates of car ownership and overall reduction in vehicle kilometres / miles traveled (VKT/VMT). One-way carsharing has a similarly positive impact on reduced car ownership levels but has a currently unknown impact on VMT/VKT. The impact on transit usage is less clear for both modes, however. For traditional carsharing, it is usually a statistically insignificant impact, yet there are exceptions with both meaningful increases and decreases. Current evidence about one-way carsharing is that it has potentially negative impact on transit ridership.

While research is scant about peer-to-peer carsharing, we can expect similar positive conclusions from an environmental point of view due to the transformation of the mobility package. The most potentially troubling aspect ecologically is that some people are buying a second car so that others can increase their driving. Lower deployment costs for P2P carsharing, however, may aid its expansion into less dense, suburban areas.

When considering the available evidence, we have some major concerns that traditional ridesourcing – particularly in downtown areas - may weaken the aspirations of cities to live within ecological limits because there is evidence that it moves (non-car) modal share in the wrong direction and has an unclear, mixed impact on transit ridership. The impact on vehicle kilometre / miles driven is unknown and there is evidence that it induces new car trips. Ridesourcing only evokes modest changes in car ownership.

## OTHER SUSTAINABILITY DIMENSIONS

- Carsharing and ridesourcing contribute to a reduced need for parking space – which is greatest for carsharing – possibly reducing demand on paving over natural lands. There is one example where both modes are contributing to city emergency preparedness.
- Current usage of carsharing and ridesourcing amongst low-income communities is below that of the general population and is greatest for those of the millennial generation. The evidence of racial discrimination in ridesourcing is mixed and unclear.
- Carsharing and ridesourcing contribute to more affordable living to varying degrees. Peer-to-peer carsharing is a way to supplement income, which may or may not cover actual costs; high volume rentals are necessary to earn top dollar breaking $1000.
- Ridesourcing drivers are independent contractors without job security or benefits; their average net wage including all costs is $12.33, which is above the US minimum wage ($7.25) but below minimum wage increases underway and below the living wage for households with children."

## 3a.5
## ENABLING SHARED MOBILITY FOR URBAN SUSTAINABILITY

PART 1: LEVERAGING CARSHARING FOR LIVING WITHIN ECOLOGICAL MEANS

# Q1.

# What can local governments do to ensure that all forms of carsharing support strong, one-planet transportation?

### RECOMMENDATION:

Ensure that cities have both one-way and two-way carsharing companies in order to provide a comprehensive mobility package.

This will support the greatest gains in reduced car ownership and vehicle kilometre / miles traveled (VKT/VMT) reduction. One-way and two-way carsharing can be offered by separate companies or integrated into the same company. In the next section, Getting Ahead of the Curve, we make the case for the integration of carsharing together with other shared mobility modes and transit and land use planning in order to be the most effective at supporting car-reduced lifestyles.

One role that local government play in enabling car-sharing is by providing parking spaces allocated to car-sharing vehicles. The City of Toronto and the City of Vancouver developed carsharing allowances and permit systems to support carsharing through parking and residential permits.[94]

### RECOMMENDATION:

Continue the integration of carsharing into multi-family development with universal access.

Integration of carsharing into multi-family developments with universal access provides an entry point into car-reduced lifestyles. Universal access means that the shared cars are available to any carshare members and not just residents of the multi-family development; this is critical for viability of the carshare operation.

### RECOMMENDATION:

Support carsharing entities that explicitly and consistently emphasize reducing car dependence, active transportation and other sustainable lifestyle behaviours.

Non-profit and cooperative models are the strongest and most consistent in emphasizing sustainable lifestyles and reduced car dependence. IGO carshare (subsequently bought out by Enterprise Holdings) is a prime example:

> *"Our motto has always been, 'walk, bike, ride the bus, but when you need us, we're here.' That's why we like to locate our cars next to B-cycle, bus, and light rail stations, and why we keep bike and bus maps in our cars."*[95]

Modo cooperative carshare in Vancouver also offers their members a variety of perks for more sustainable lifestyles such as discounts for: cycling gear, education and events; veggie garden installation and seeds; and carpooling to the nearby town of Whistler.

Whether this type of messaging and membership perks translates into broader sustainable behaviour change and addresses any rebound effect is not well documented. Local governments should encourage carshare companies and other researchers to explore this further.

### RECOMMENDATION:

Support carsharing companies to address barriers to electric vehicle adoption.

The top three barrers to carsharing companies adopting more electric vehicles reported in a recent Canadian survey were lack of public charging stations, higher incremental costs for purchasing electric vehicles, and obtaining financing to purchase them.[96] Local governments can help address these barriers by:

- Ramping up efforts to provide public charging stations;
- Preferring electric vehicles in municipal carshare fleet arrangements; and
- Providing grants or incentives to help carshare companies purchase electric vehicles.

## RECOMMENDATION:

Support the integration of traditional two-way carsharing with transit, with an emphasis on targeted expansion into the suburbs.

A key strategy for achieving this is to seek agreements to place traditional, two-way carsharing stations at transit stops and park-and-rides. For example, Zipcar has agreements with many transit organizations across North America to bridge the first/last mile gap by locating at transit stations and park-and-rides. Two-way carsharing supports "re-verse trips" – taking transit to a transit centre, then using carshare for an errand before returning home by transit.

## RECOMMENDATION:

Explore the potential of peer-to-peer carsharing for suburban municipalities.

Despite large service areas, one-way carsharing companies such as Car2Go tend not to provide substantial or any service outside of urban core areas. However, the lower deployment costs of peer-to-peer (P2P) carsharing models like RelayRides and GetAround support broader expansion into suburban municipalities. Scaling up P2P carsharing in suburban areas will require a signficiant behavioural change to encourage people to share a private asset – in this case, their car – and it will require addressing risks such as insurance coverage.[97] The Shared Use Mobility Centre based out of Chicago is managing a two-year pilot project to explore peer-to-peer carsharing in Chicago in lower density and lower income neighbourhoods in order to allow residents to live well without having to own a vehicle.[98]

PART 2: LEVERAGING RIDESOURCING FOR LIVING WITHIN ECOLOGICAL MEANS

# Q2.

## Is it possible for local governments to harness ridesourcing in a way that moves substantial numbers of people out of single occupant vehicles into more sustainable travel modes?

## RECOMMENDATION:

Develop partnerships between ridesourcing companies and suburban municipalities or transportation agencies in order to fill transit gaps and foster first/last mile integration.

Ridesourcing in suburban municipalities has the potential to enhance mobility options for those who don't have licenses or don't want to drive (e.g. seniors, students, and millenials). As Jarrett Walker, transit consultant and blogger recently stated:

> *"There is a role for demand responsive service in suburban areas where development patterns preclude efficient transit."*[99]

Dallas Area Rapid Transit (DART) recently launched a partnership with Uber that allows people to begin or finish their transit trip with Uber using DART's GoPass mobile ticketing app. The partnership was launched with a successful trial during the Dallas St. Patrick's Parade.[100]

## RECOMMENDATION:

Explore the use of ride-splitting services like UberPool, LyftLine and Sidecar.

UberPool, LyftLine and Sidecar Shared Rides allow customers to share a ride and split the cost. The new term ride-splitting is now being used to describe this shared

mobility option. Ridesourcing may be uniquely poised to scale carpooling given their marketing savvy and large pool of drivers.[101] Carpooling peaked in 1980 with about 20 percent of Americans sharing rides to work, a number that's since dropped to below 10 percent.

An article by the Shared Use Mobility Center includes some industry claims that support the scaling up of ride-splitting:[102]

- 50% of rides in SanFrancisco are via LyftLine;
- There have been millions of uberPool trips, with thousands of users taking trips during commute hours more than five times in a week; in San Francisco, match rates are over 90% during commuting hours;[103]
- Uber claims uberPool has reduced VMTs by nearly 675,000 since its launch in August, 2014.

## BOX 3A.2
## PUSHING BACK AGAINST RIDESOURCING

Across North America, a number of cities are pushing back against ridesourcing companies like Uber and Lyft due to a range of concerns over public safety, insurance coverage, labour standards, price surging, and fair business practice. While usually not featured (at least publicly) our analysis points to another concern – questionable environmental benefits. Current evidence suggests that traditional ridesourcing may not move cities in the right direction in terms of reducing vehicle kilometres / miles travelled, enhancing transit usage and active transportation and has only a minimal impact on reducing car ownership levels.

Ridesourcing companies are also taking an assertive approach. They are reluctant to share data to inform civic understanding and argue that as a technology company they should not be subject to many of the rules and demands of cities. Naturally, strong resistance on both sides has lead to strained relations and, in some cases, stand-offs.

While pushing back is not without costs in terms of city resources, which could be used elsewhere, it has provided cities with some valuable space to consider effective ridesourcing policies. There is also some evidence too, in Canada in particular, that the collective resistance by local governments may be sending a message to ridesourcing companies that they need to reevaluate their approach and mend relationships with cities.

In the following section, we provide examples of how North American cities are pushing back against ridesourcing companies.

### CITIES THAT ARE SAYING "NO"

CITY OF VANCOUVER: The City of Vancouver has effectively stalled Uber's attempts to set up shop. Since Uber first entered Vancouver in 2012, it faced a series of regulatory hurdles that to date have prevented it from operating. Vancouver has extended a moratorium on new taxi licences to the end of October 2015 while it reviews the potential impacts of allowing ride-sourcing firms to operate within the municipality.[104] Concurrent with the moratorium, which began in 2014, the Province of British Columbia who has jurisdiction for regulating taxis and ridesourcing companies announced it would launch a system of undercover government checks on the alternative taxi industry to enforce regulatory compliance.[105] In September 2015, Uber Chief Advisor addressed the Vancouver Board of Trade to make the business case for ridesourcing;[106] however, meetings with City Councillors are not leading to a new licensing decision.[107] The Mayor of the City of Vancouver is meeting with other Canadian Mayors to explore regulating Uber.[108] Meanwhile, the Vancouver Taxi Association is launching its own eCab app which guarantees stable rates and avoids the fluctuating prices that ridesourcing companies engage in.[109]

CITY OF CALGARY: Since Uber first entered the Calgary market, the City has had deep concerns over the risks associated with the ride hailing company – and with good reason. Uber's Calgary debut took the form of a promotional trial period, during which Uber was found to have unlicensed drivers and vehicles. In theory, the City is not opposed to Uber, but it demands that Uber play by the City's rules, obeying bylaws and adhering to public safety and labour standards.[110] The intense regulatory scrutiny and persistence in enforcement pursued by the City of Calgary has resulted in Uber exiting the Calgary market,[111] other than perhaps operating UberBlack – the luxury service – while allowing the City space to formulate coherent and effective policy frameworks

for ridesourcing. One potential next step called for by Council members is for the Government of Alberta to develop a ride hailing strategy to deal with app-based ride sourcing in the wake of Uber's illegal operations in Calgary and Edmonton.[112]

CITY OF SAN ANTONIO: Uber and Lyft have shut down operations in San Antonio after a year-long struggle with City regulators.[113] The City pushed hard for Uber and Lyft to integrate into the existing regulatory framework, even taking steps designed to help ease the entry to ride-sourcing companies such as reducing fees and excess insurance coverage requirements.[114] However, Uber and Lyft balked at the City's continued requirements for commercial liability insurance and a 10-fingerprint background check,[115] calling them "over-burdensome", and calling San Antonio's request for the companies to share certain data on operations "anti-innovation".[116] The City notes the absolute requirement for all commercial taxi services to be adequately insured and that drivers must have background checks as a matter of course, both in the interest of public safety.[117]

CITY OF HOUSTON: Houston has similarly pushed back against Uber and Lyft's efforts to avoid regulations designed to ensure public safety, specifically fingerprinting and background checks on drivers. While existing regulations for ridesourcing require fingerprinting as part of background checks, the City of Houston found adherence to be lacking. When the City asked the FBI to run criminal background checks on a set of Lyft and Uber drivers, they discovered "several drivers with prior criminal histories including indecent exposure, DWI, prostitution, fraud, battery, assault, robbery and aggravated robbery."[118] The City is adamant that if Uber and Lyft drivers apply for permits as required, city oversight would ensure that candidates with criminal records do not get hired.[119] In the most recent development, Uber is suing the City of Houston because they not want to release records that would reveal how many drivers it has licensed in the city, who they are and how the company operates in Texas.[120]

**CITIES THAT ARE INNOVATING**

Two cities have recently found innovative ways to address ridesourcing concerns that may hold promise for other places.

CITY OF EDMONTON AND CITY OF TORONTO: The two Canadian cities are developing regulations for ridesourcing companies and proposing new licensing agreements for 'transportation network companies'.[121]

CITY OF PORTLAND: A city to watch is Portland, Oregon, which first prohibited the entrance of ridesourcing firms but has recently announced a 120-day pilot program that allows legal operation within the City. A unique feature of the pilot is that Portland has negotiated access to user data from ridesourcing companies Uber and Lyft in exchange for a lighter regulatory approach, particularly with regard to insurance and price-surging.[122] This marks the first time ridesourcing companies have agreed to share such data and it will be used by Portland to shape final recommendations for regulating private for-hire transportation. More detail on this story can be found in Box 5.1 Part of 120-Day Ridesourcing Pilot Program in Section 5 of the LGSE Roadmap.

WASHINGTON DC, NEW YORK CITY AND CHICAGO: The cities of Chicago, Washington DC and New York announced in December, 2014, that they would be incubating or developing new universal e-hailing taxi apps for their jurisdictions, prompting some analysts to predict that 2015 will be the year that "the disrupters will be disrupted".[123] These new apps extend ridesourcing style access to the traditional taxi industry, pooling all companies into one universal e-hailing platform. These initiatives foster innovation within the taxi industry to allow it to compete more effectively with ridesourcing companies.

# Q3.

## How can local governments ensure that carsharing and ridesourcing also enhance other dimensions of sustainability?

### RECOMMENDATION:

View shared mobility as a complement to local mass transit and continue to focus on equitable transit-oriented development.

Shared mobility modes are low-volume systems that should be used to extend the reach of transit systems and provide alternate routes. As a result, as the "Connecting Low-Income People to Opportunities with Shared Mobility" report by Institute for Transportation and Development Policy (ITDP) states:

> *"The effective integration of transportation and land use with high quality urban design – including equitable transit-oriented development – will remain a promising area of focus."*[124]

In other words, the effective integration of affordable housing with land use planning and transportation should remain the foundation of advancing equity. Shared mobility options can build upon this foundation by addressing first and last mile trips to and from transit, or provide connections between less common destinations or bring new mobility options to underserved areas.

### RECOMMENDATION:

Address multiple barriers to the participation of low-income people and explore partnerships of public, non-profit and private actors to advance equity in shared mobility.

There are a range of barriers to the participation of low-income people in shared mobility with research showing that effective policies or programs address at least three of the following:

- Lack of carsharing locations in low-income neighborhoods
- Requirement for a valid driver's license, internet access or smartphone
- Requirement for a debit or credit card
- Lack of information about the benefits of usage
- Lack of demand in lower-income communities
- Perceptions of higher risk in low-income communities, prompting higher insurance costs for shared mobility companies

The Institute for Transportation and Development Policy recently compiled case studies that show effective approaches for addressing multiple barriers.[125] Non-profit carshare companies like Buffalo CarShare, eGo CarShare (Denver) and CityCareShare (San Francisco) place more emphasis on reaching low-income populations. As a result, business models that favour cross-sector partnerships may be needed in order to determine what subsidy or incentive motivate for-profit shared companies to serve low-income communities. ITDP suggests that:

> *"Public and non-profit sectors are important for structuring shared mobility business models since they can increase demand through reducing user barriers, identifying alternative revenue sources, and providing incentives to operators. If the public sector also takes an active role in guiding, requiring, and facilitating low-income shared mobility initiatives, this could help enable the for-profit private sector to scale-up successful programs without losing considerations for low-income individuals."*[126]

The Shared Use Mobility Center announced a new partnership with the California Air Resources Board (CARB)

and the City of Los Angeles to launch a first-of-its kind electric vehicle carsharing pilot project focused on serving low-income residents in L.A.[127] Carsharing that not only reduces greenhouse gas emmissions but also provides new mobility options for low-income persons is a highly desireable sustainability outcome and so this pilot is worth following.

## RECOMMENDATION:

Explore the equity potential of peer-to-peer carsharing.

A study by Fraiberger & Sundararararjan, 2015, proposes that below median-income persons have the potential to experience greater positive effects from their participation in P2P ridesourcing:

- They are more than twice as likely to switch to renting;
- There is greater rental activity in lower average income neighbourhoods where demand is also higher; and
- There is the potential for higher potential economic gains from switching to renting and new opportunities through enhanced mobility.[128]

The Shared Use Mobility Centre is exploring this potential by focusing on lower-income neighborhoods in their P2P carharing pilot. If people own cars then they can make money when they are idle; if not, it can provide occasional access, which is cheaper then the total costs of car ownership.[129]

## RECOMMENDATION:

Address data gaps in order to better understand the impacts of shared mobility. The best option is to require that providers share their data.

Many Sharing Economy companies are reluctant to share data and carsharing and ridesourcing companies are no different, citing privacy and competition concerns. While independent research, some of which relies on data scrapping, can provide some necessary information, other options are preferable in terms of time, cost and reliability. Data from multi-modal apps such as Ridescout are noting their willingness to share data with local governments and this is one option that should continue be explored.

Yet these apps may not feature all critical modes; for example, Ridescout currently does not include ridesourcing. Requiring data sharing as part of regulatory agreements is the preferred option to allow local governments to assess transportation assess and integrate new shared mobility services into transportation plans. More about data sharing, including case studies involving Car2Go and ridesourcing companies, can be found in Chapter 5 on Addressing Data Gaps.

## 3a.6
## GETTING AHEAD OF THE CURVE

### SHIFTING TO INTEGRATED MOBILITY SYSTEMS PLANNING

# Q4.

# How can local governments integrate shared mobility systems with transit, active transportation, and land use planning to scale positive benefits?

Rather than considering the merits or disbenefits of each shared mobility option on its own, a better approach may be to view them as an ecosystem of services that can be parallel and complementary to public systems. The City of Victoria in British Columbia, Canada explicitly notes that car-sharing, bike sharing and ride sharing "provide more choices" and that "a healthy and diverse multi-modal transportation system is the best way to deliver affordable, equitable, and environmentally preferable alternatives to the private automobile."[130] Research shows that shared modes work best when connected and integrated with one another, and with public transit. In a report released by the US PIRG Education Fund, "The Innovative Transportation Index: The Cities Where New Technologies and Tools Can Reduce Your Need to Own a Car" they state:

> *"Providing more choices for more people throughout a community means not only offering more options but also making those choices more accessible by increasing both their density*

*and their geographic spread. In cities with robust transportation offerings, bike, car and ridesharing services help to provide first– and last-mile connections between transit locations and travelers' final destinations, and to increase the reach and interconnectivity of existing transit systems."*[131]

While investing in mass rapid transit coordinated effectively with land use planning is central to long-term sustainability, shared mobility systems can help fill in the gaps as well as extend the reach of existing public transit networks.[132] Our sustainability analysis of ridesourcing and carsharing found that both geography and integration between modes was important. For example, while ridesourcing in dense, downtown locations may have questionable benefits its targeted expansion in suburban municipalities could fill a mobility gap and reduce single occupant car travel. So too could the integration of traditional two-way carsharing with transit, with targeted expansion into the suburbs.

*Integrated mobility planning considers a suite of shared mobility options, with public transit and active transportation as the foundation, integrated with land use planning in order to foster car reduced and car free lifestyles.*

We provide four recommendations for local governments to help with their adoption of this promising new approach.

## RECOMMENDATION:

Learn about integrated mobility planning.

While local governments have many legimate questions about shared mobility such as whether it reduces transit ridership or only serves a narrow population demographic, the first key step is learn more about it. Fortunately, there are many ways to do this such as:

- Track cities in North America and around the world that are leading the way in embracing integrated mobility planning. The city case study in this Chapter highlights Montreal's Transport Cocktail as an early example. San Francisco is "cultivating a dynamic transportation strategy that goes from a culture of "no" to a culture of "how".[134i] Likewise, Chicago has a concerted effort focused on shared mobility.[134ii] In Switzerland, Mobility car-sharing cooperative launched Swiss Pass – a single card that enables multi-modal transport across public and private moterized and non-moterized services, including car sharing, bike sharing and train passes.[134iii]

- Check out the Shared Use Mobility Center who are dedicated to fostering collaboration in shared use mobility and scaling the benefits for all – as well as providing key information, tools and resources needed by local governments to embrace shared mobility. Sign up to receive their monthly newsletters on shared mobility news, trends, events and policy at http://sharedusemobilitycenter.org/newsletter/. Watch for new tools that SUMC is releasing later this year targeted to local governments, including a national use database of policies, regulations and ordinances, and a visual forecasting tool to illustrate the effects of policy changes and program investments on vehicle kilometer / miles travelled reduction, mode shift, auto ownership rates, greenhouse gas emission reductions and more.

- Attend conferences where Shared Use Mobility is featured such as the 2015 National Shared Mobility Summit in Chicago (see http://sharedusemobilitycenter.org/summits/) and the 2015 Carsharing Conference held in Vancouver that emphasizes the integration of carsharing with public transit and cycling (see http://conference.carsharing.org).

- Join, or follow, organizations dedicated to integrated mobility planning such as International Assoication of Public Transport (www.uitp.org) or sector specific ones such as the CarSharing Organization which features integration of specific mode with others (see www.carsharing.org). Many transportation organizations and associations are also now focusing efforts on shared mobility.

## RECOMMENDATION:

Take easy, first steps to integrate mobility options.

Shifting towards integrated mobility planning will not happen overnight and requires new policy and planning approaches. While this shift is underway, the following are two easy, first steps that local governments and / or transportation agencies can take to integrate mobility options:

1. Convene public and private mobility providers in order to discuss and explore better connectivity – this requires ensuring that representatives of all relevant local governments departments are in attendance. For example, a meeting might include regulatory, land use and transportation departments.
2. Enhance connectivity through basic means such as schedule coordination and joint signage that directs passengers to a range of mobility options, and potentially encourage joint marketing.

## RECOMMENDATION:

Undertake integrated mobility mapping that overlays mobility, public transit, land use patterns and demographics in order to identify mobility gaps and the best opportunities to fill them.

In order for shared mobility to fill gaps in the existing public transportation system across the urban landscape requires new mapping tools. Fortunately, the Shared Use Mobility Center (SUMC) is developing software that overlays shared mobility, public transit, land use patterns and demographics in order to identify mobility gaps and consider the best opportunities to fill them.

A February 2015 presentation by Sharon Feigon highlights this emerging tool with a focus on Los Angeles.[135] The preliminary mapping show that while there are many mobility options in LA - ridesharing, all three forms of carsharing, ridesourcing, taxi hailing, bikesharing and corporate shuttles – they could be better connected with each other and with transit. Shared use mobility has the potential to fill transit gaps and extend its reach on weekends and for night service, for first and last mile trips, as well as for transit trips with difficult routes. A variety of proposed policy responses could eliminate 100,000 cars from LA roads through shared mobility, transit and land use planning.

## RECOMMENDATION:

Learn about, and consider adopting, best practices for integrated mobility planning such as those outlined in a preliminary framework by the Shared Use Mobility Center

The rapid growth of shared mobility services has spawned innovation in some ciites but also chaos. Many cities have had to quickly pass policies, which they must monitor on the go. They are left with many outstanding questions about the effectiveness of their policies to advance urban mobility in a way that is safe, supports public transit and improves first and last mile solutions, reduces congestion, promotes active transportation and health, and serves all communities. Very few cities have developed integrated public and private mobility visions or plans and there is confusion about which city or transit departments should oversee what aspects of shared mobility.

While the specific approach varies from city to city, in April 2015 the Shared Use Mobility Centre (SUMC) released some emerging best practices to serve as the start of a general framework on shared mobility for local governments. This will be expanded into more detailed recommendations together with a policy database in 2015. Best practice highlights include:

- Develop a long-term mobility vision that includes shared mobility and, ideally, mode-split goals;
- Use the mobility vision to decide on the number and types of modes to attract and at what scale, and to guide regulatory and planning efforts;
- Integrate shared-use modes into transportation planning and study the effects of all modes – both individually and in combination – and incorporate into transportation models,
- Encourage integration of public transit, bikesharing, ridesharing and carsharing around transit stops, including electric vehicle infrastructure;
- Support the launch of new modes, including financial support for start-up costs, which has been done already to launch bikesharing;
- Require that providers share their data so that it will be possible to assess impact and integrate new services into transportation plans;
- Provide public access to transit data, including static and real-time information, so that developers can create innovative apps,
- Support creation of universal payment and trip planning mechanisms for multiple modes; and
- Test new approaches to meet the mobility needs of those poorly served by the transportation system, including the young, the elderly, the disabled and those in low-income households.

## CITY CASE
## MONTREAL'S TRANSPORT COCKTAIL – AN INTEGRATED MOBILITY SYSTEM

*"The future for mobility lies in the transportation cocktail that allows for the use of various modes during the same trip. It's thus a blend of traditional and new, collective and individual methods of transportation."*

– Mr. Michel Labrecque, Chairman of the Board of Directors, Société de transport de Montréal

### MONTRÉAL SHAKES THINGS UP WITH A TRANSPORTATION COCKTAIL

The Société de Transport de Montréal (STM), the authority responsible for managing Montréal's network of bus, metro, heavy rail, and paratransit services, is undertaking an experiment in integrated mobility. Within the Montréal region, the STM is working hard to integrate bus, bicycle, metro, taxi, shared taxibus, carpooling, and car sharing to promote a "smart combination of individual means of transportation".

Through agreements and partnerships with a variety of alternative transportation service providers, ranging from the Bixi self-serve bicycle system to car sharing firms like Communauto, STM is creating a transportation cocktail to serve a wide array of mobility needs.[136] These partnerships are allowing STM to offer discounted, bundled transportation services, including preferential rates for car and bike-share partner services.[137] Payment is made easy through the full integration of fares across all modes of STM transit, allowing users to begin their trip walking, hop on a Bixi bike and cycle to the metro station and then ride three stops, all on the same ticket and transfer.

### INTEGRATING THE BICYCLE INTO THE TRANSPORTATION MIX

In May of 2013, the STM unveiled a plan designed to enhance the use of bicycles within its jurisdiction. Central to this plan was the roll out of additional buses equipped with bike racks, the testing of bike slides in metro stations, a pilot program for dedicated bicycle parking spaces at metro stations, and a shared bus-bicycle lane on Viau Street – a major transit artery connecting bus and metro systems.[138] For Montréal, embracing the bicycle as a part of the public transportation mixture is a key ingredient that the STM has relied on as a healthy alternative to the car for whole or partial trips.

### TAXIS

As a central part of its expanding integrated mobility program, the STM transformed their relationship with the taxi industry from a rival into a key partner. And rather than viewing the car as the 'enemy', the STM is harnessing the taxi industry's unrivaled dominance in the paratransit services market to deliver services in geographic gaps in the fixed-route transit network. Montréal's taxibus service was first developed by the STM in the mid-1990s. 'Taxibuses' are shared taxis operating both on a fixed-route and on-demand service. They now serve a vital function providing feeder services to commuter rail stations and other important entry points to the regional transportation network.

The integration of taxis and taxibuses into the transportation network allows STM to expand transit coverage into low-density areas so that fully 99.5% of the Montréal area is now covered by the network. As part of this integration, taxis may use dedicated bus lanes, further reducing trip times. It has also been cost-effective, with the cost of operating taxi service coming in at less than half that of conventional bus service.[139]

1 Millenials are those born between 1981 and 2000.

2 http://www.its.dot.gov/itspac/Dec2014/ITSPAC_MobilitySharingEconomyShaheen.pdf; http://www.uspirg.org/sites/pirg/files/reports/Millennials in Motion USPIRG.pdf

3 http://www.pedbikeinfo.org/programs/promote_bikeshare.cfm

4 http://sharedusemobilitycenter.org/what-is-shared-mobility/

5 http://sharedusemobilitycenter.org/what-is-shared-mobility/

6 http://www.bikemag.com/pavedmag/spinlister-goes-mobile-with-peer-to-peer-bike-sharing-app/

7 http://www.huffingtonpost.com/2012/03/23/detroit-bike-city-bicycle-show-swap-meet-cobo_n_1375418.html

8 http://www.scootnetworks.com

9 https://www.facebook.com/Newfoundland-Rideshare-107147009330661/timeline/; http://www.kijiji.ca/b-rideshare-carpool/yukon/c5l1700101

10 Introduction to Ridesharing - http://file.actweb.org/ACT Powerpoint Ridesharing_Shaheen.pdf

11 In contrast to the recent USDN report *Measuring Sustainable Consumption* we separate out ride-sourcing as distinct from ride-sharing as new, distinct service following the lead of Dr. Susan Shaheen and the Shared Use Mobility Centre based out of Chicago.

12 https://www.uber.com

13 http://www.webpronews.com/uber-has-a-new-option-for-the-elderly-and-disabled-2015-07

14 https://www.lifthero.com/about

15 https://shuddle.us

16 http://sharedusemobilitycenter.org/news/disrupting-the-disrupters-3-cities-work-to-design-universal-taxi-apps/

17 http://www.citylab.com/commute/2015/04/how-the-microtransit-movement-is-changing-urban-mobility/391565/

18 http://www.citylab.com/commute/2015/03/san-francisco-gets-the-ridiculous-luxury-bus-it-deserves/388090/

19 http://techcrunch.com/2015/01/26/chariot-new-route/

20 http://www.citylab.com/commute/2014/07/what-i-learned-riding-one-of-those-new-private-city-buses/375312/

21 http://www.citylab.com/tech/2015/04/the-new-york-car-service-that-charges-almost-transit-prices/389985/

22 http://www.citylab.com/tech/2015/01/the-trucking-of-tomorrow-is-here-and-its-a-huge-win-for-city-traffic/384672/

23 https://www.cargomatic.com

24 http://blog.zipments.ca/2013/11/27/our-official-press-release/

25 https://pando.com/2015/03/06/cargomatic-plays-the-role-of-hero-swooping-in-to-help-unclog-the-uss-largest-ports/

26 http://www.ttnews.com/articles/basetemplate.aspx?storyid=38488

27 Moore, Jennie. *Ecological Footprints and Lifestyle Archetypes: Exploring Dimensions of Consumption and the Transformation Needed to Achieve Urban Sustainability.* Sustainability 7.4 (2015): 4747-4763. http://www.mdpi.com/2071-1050/7/4/4747/htm

28 Ibid., 4754.

29 This is called 'One Planet Living' – a lifestyle that, if adopted by everyone, could be supported indefinitely by the regenerative capacity of Earth's ecosystems (Wackernagel and Rees 1996).

30 We draw primarily here from Dr. Susan Shaheen's research, and primarily from those articles listed as references 31 and 32 below, because this research is peer reviewed. A full list of Shaheen's research can be found at http://tsrc.berkeley.edu/SusanShaheen.'

31 http://tsrc.berkeley.edu/sites/tsrc.berkeley.edu/files/The%20Impact%20of%20Carsharing%20on%20Public%20Transit%20and%20Non-Motorized%20Travel.pdf

32 Martin and Shaheen (2010) *The Greenhouse Gas Emission Impacts of CarSharing in North America* http://tsrc.berkeley.edu/sites/tsrc.berkeley.edu/files/Greenhouse Gas Emission Impacts of Carsharing in North America (final report).pdf

33 http://www.sfbg.com/politics/2014/05/23/does-carsharing-really-reduce-overall-driving

34 Other studies show considerable variability, ranging from 11% to 29% in terms of people who shed a car.

35 http://carsharing.org/wp-content/uploads/2014/12/Report-out-on-CarSharing-in-Canada.pdf

36 Martin and Shaheen (2010), state the average change in emissions across all respondents is -0.58 t GHG per household per year for the observed impact, and -0.84 t GHG per household per year for the full impact.

37 Kent, Jennifer L. *Carsharing as active transport: What are the potential health benefits?*. Journal of Transport & Health 1.1 (2014): 54-62.

38 http://tsrc.berkeley.edu/sites/default/files/Innovative%20Mobility%20Industry%20Outlook_SUM%20Spring%202015.pdf

39 Martin, Elliot. and Susan Shaheen. *The Impact of Carsharing on Public Transit and Non-Motorized Travel: An Exploration of North American Carsharing Survey Data,* Energies, January 2011, Vol. 4, pp. 2094-2114, doi: 10.3390/en4112094.

40 https://citycarshare.org/wp-content/uploads/2011/12/CCS_BCCtYC_Long.pdf

41 https://worldstreets.files.wordpress.com/2014/04/2013_free_floating_car_share_report.pdf

42 Demailly, Damien and Anne-Sophie Novel. *The Sharing Economy: Make It Sustainable.* Institut du développement durable et des relations internationals (IDDRI). New Prosperity, No 3,14. July (2014): 21. http://www.iddri.org/Publications/Collections/Analyses/ST0314_DD%20ASN_sharing%20economy.pdf

43 Slide 43 from a presentation by Tim O'Reilly, CEO of O'Reilly Media at http://www.slideshare.net/timoreilly/the-clothesline-paradox-and-the-sharing-economy-pdf-with-notes-13685423?from_action=save

44 http://carsharing.org/wp-content/uploads/2014/12/Report-out-on-CarSharing-in-Canada.pdf

45 http://conference.carsharing.org/agenda/

46 Rayle, Lisa, Susan Shaheen, Nelson Chan, Danielle Dai, and Robert Cervero (2014). *App-Based, On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco: Working Paper.* Univeristy of California Transportaiton Center (UCTC). http://76.12.4.249/artman2/uploads/1/RidesourcingWhitePaper_Nov2014Update.pdf

47 Ibid.,18

48 http://www.forbes.com/sites/ellenhuet/2014/09/08/uber-lyft-cars-arrive-faster-than-taxis/; http://www.kgw.com/story/money/business/2015/07/10/report-taxis-have-longer-wait-times-than-uber-lyft/29986679/

49 http://qz.com/363759/data-proves-that-often-a-yellow-taxi-is-a-better-deal-than-an-uber/

50 This means ridesourcing that where an individual or people that already know each other source a ride vs. the newer variants like UberPool, Lyft Line or Shared SideCar where strangers are matched in real-time and can split the cost

51 http://sfdem.org/index.aspx?page=15

52 http://www.govtech.com/public-safety/How-the-Sharing-Economy-is-Strengthening-Emergency-Response-and-Recovery.html

53 http://www.emergencymgmt.com/disaster/White-House-Innovation-Day-Disaster-Response.html

54 See endnote 38

55 http://www.accessmagazine.org/articles/spring-2011/impact-carsharing-household-vehicle-ownership/

56 http://www.protection.uottawa.ca/en/carsharing.html

57 https://www.itdp.org

58 Institute for Transportation & Development Policy, *Connecting Low-Income People to Opportunity with Shared Mobility*, by Michael Kodransky and Gabriel Lewenstein, December (2014): 12. https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_Full-Report.pdf

59 Cascadia Consulting Group. *Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities for the Urban Sustainability Directors Network.* (2015): 76-77. http://usdn.org/uploads/cms/documents/usdn_measuring_consumption_project_files.zip, http://fee.org/freeman/detail/uber-against-racial-profiling

60 https://medium.com/matter/ubering-while-black-146db581b9db

61 http://www.wired.com/2015/08/uber-disability/

62 http://www.webpronews.com/uber-has-a-new-option-for-the-elderly-and-disabled-2015-07
http://www.greenbiz.com/blog/2014/10/14/shaheen-how-car-sharing-gets-us-here-sustainability;

63 http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf

64 See endnote 38.

65 https://citycarshare.org/wp-content/uploads/2011/12/CCS_BCCtYC_Long.pdf (e.g. CityCarshare members spend $540 on average compared to $5000 as estimated annual cost of ownership by AAA. Zipcar makes a similar claim.

66 http://iurd.berkeley.edu/wp/2012-04.pdf

67 http://www.vancouversun.com/Metro+Vancouver+board+with+sharing/10360341/story.html; http://citycarshare.org/wp-content/uploads/2012/06/CITY-CARSHARE-best-practices-010212_lowres.pdf

68 https://citycarshare.org/wp-content/uploads/2011/12/CCS_BCCtYC_Long.pdf

69 http://frequentflyeruniversity.boardingarea.com/using-relayrides-to-save-money-on-car-rentals/; http://www.extremetech.com/extreme/134168-hands-on-relayrides-makes-peer-to-peer-car-rental-cheap-easy

70 http://blogs.wsj.com/venturecapital/2014/06/24/peer-to-peer-car-rental-startup-relayrides-hopes-to-escape-silicon-valley-bubble/

71 http://www.businessinsider.com/uber-vs-taxi-pricing-by-city-2014-10

72 Ibid.; The video is worth watching.

73 https://citycarshare.org/wp-content/uploads/2011/12/CCS_BCCtYC_Long.pdf

74 http://www.forbes.com/sites/karstenstrauss/2014/12/17/relayrides-wants-you-to-rent-out-your-car-in-2015/

75 http://www.quora.com/How-much-does-the-average-RelayRides-car-owner-make-per-year-Also-how-many-hours-on-average-does-a-RelayRides-car-get-rented-for

76 http://citypaper.net/uberdriver/

77 http://observer.com/2015/02/uber-drivers-are-scrambling-to-make-ends-meet-after-latest-fare-cuts/

78 http://www.stopuber.com/uber-drivers-angry-lower-rates/

79 http://citypaper.net/uberdriver/

80 http://citypaper.net/emilyg/

81 http://www.laweekly.com/news/confessions-of-an-uber-driver-5173883

82 http://theridesharеguy.com/how-much-did-i-make-driving-for-lyft-uber-on-a-saturday-night-in-the-oc/

83 http://money.cnn.com/2014/12/02/news/economy/chicago-minimum-wage-hike/

84 http://livingwage.mit.edu/metros/37980

85 http://www.forbes.com/sites/ellenhuet/2014/10/30/uber-driver-firing-policy/

86 http://www.reuters.com/article/2015/06/18/us-uber-california-idUSKBN0OX1TE20150618

87 http://theridesharеguy.com/hillary-weighs-in-on-uber-lax-opens-its-doors-uber-fined-7-3-million/

88 http://www.phila.gov/pdfs/City_to_Join_PhillyCarShare.pdf

89 http://www.communauto.com/images/03.coupures_de_presse/CCS_BCCtYC_Long.pdf

90 Martin, Elliot, Susan Shaheen. *The Impact of Carsharing on Public Transit and Non-Motorized Travel: An Exploration of North American Carsharing Survey Data.* Energies, January 2011, Vol. 4, pp. 2094-2114, doi: 10.3390/en4112094.

91 Kent, Jennifer L. *Carsharing as active transport: What are the potential health benefits?.* Journal of Transport & Health. 1.1 (2014): 54-62.

92 See endnote 38

93 Personal correspondence with Hillary Henegar, Marketing Manager for Modo.

94 City of Toronto – Car-sharing Permit Application process -
http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=efd6a84c9f6e1410VgnVCM10000071d60f89RCRD&vgnextchannel=cd4c4074781e1410VgnVCM10000071d60f89RCRD; City of Vancouver Car-sharing Allowances policy -
http://former.vancouver.ca/ctyclerk/cclerk//20100119/documents/ttra2.pdf; Minutes from City oF Vancouver Council - http://former.vancouver.ca/ctyclerk/cclerk/20100119/documents/ttraminutes.pdf

95 http://carshare.org/why-ego-carshare/

96 *Report on Electric Vehicles in Carsharing fleets in Canada* – www.carsharing.org

97 https://agenda.weforum.org/2015/07/safer-in-sharing-economy-insurance/

98 http://sharedusemobilitycenter.org/demonstrations-and-pilot-programs/

99 http://www.humantransit.org/2015/05/no-lets-not-uber-our-bus-system.html

100 http://www.thetransitwire.com/2015/04/15/dart-partners-with-uber-to-solve-last-mile-problem/;
http://transportationblog.dallasnews.com/2015/04/dallas-area-rapid-transit-uber-partner-in-an-effort-to-fill-in-riders-first-mile-last-mile-gap.html/

101 http://sharedusemobilitycenter.org/news/can-uber-and-lyft-make-carpooling-cool/

102 http://sharedusemobilitycenter.org/wp-content/uploads/2015/05/From-the-Director-05072015.pdf

103 http://newsroom.uber.com/la/2015/04/its-a-beautiful-pool-day-in-the-neighborhood/

104 http://www.cbc.ca/news/canada/british-columbia/uber-faces-more-delays-in-vancouver-1.3006568

105 http://www.cbc.ca/news/canada/british-columbia/uber-vancouver-to-get-undercover-government-checks-to-enforce-taxi-regulations-1.2821811

106 http://www.cbc.ca/news/canada/british-columbia/uber-s-chief-advisor-pitches-ride-sharing-service-to-vancouver-board-of-trade-1.3245013; https://www.biv.com/article/2015/9/uber-chief-advisor-says-its-shame-service-isnt-van/

107 http://bc.ctvnews.ca/ride-share-company-uber-set-to-meet-with-vancouver-city-councillors-1.2028068

108 http://www.theglobeandmail.com/news/toronto/canadas-big-city-mayors-put-heads-together-to-tackle-uber-issues/article26536393/

109 http://www.metronews.ca/news/vancouver/2015/09/14/vancouver-taxis-get-uber-like-app-.html

110 http://www.cbc.ca/news/canada/calgary/uber-ridershare-taxi-cab-apps-to-be-examined-at-city-committee-meeting-1.2737106

111 http://www.theglobeandmail.com/report-on-business/uber-looking-to-mend-strained-relations-with-canadian-cities/article23799516/

112 http://calgaryherald.com/news/local-news/province-should-review-rules-that-limit-uber-colley-urquhart

113 http://thenextweb.com/insider/2015/04/01/uber-shuts-down-its-cab-service-in-san-antonio/

114 http://www.expressnews.com/news/local/article/City-unveils-new-proposals-for-Uber-Lyft-6112873.php?t=845c72c3b8&cmpid=twitter-premium

115 http://www.mysanantonio.com/news/local/article/Supporters-detractors-pack-City-Hall-to-weigh-in-5950675.php

116 http://www.mysanantonio.com/news/local/article/Uber-to-San-Antonio-Change-new-regulations-or-6062771.php

117 http://www.expressnews.com/news/local/article/City-unveils-new-proposals-for-Uber-Lyft-6112873.php?t=845c72c3b8&cmpid=twitter-premium; http://www.mysanantonio.com/news/local/article/Supporters-detractors-pack-City-Hall-to-weigh-in-5950675.php

118 http://www.chron.com/news/transportation/article/How-Uber-driver-eluded-background-check-process-6186467.php; http://www.whosdrivingyou.org/blog/houston-rips-uber-lyft-background-check

119 http://www.cnet.com/news/ubers-background-checks-dont-catch-criminals-says-houston/; http://www.chron.com/news/transportation/article/How-Uber-driver-eluded-background-check-process-6186467.php

120 http://www.huffingtonpost.com/2015/04/29/uber-sues-al-jazeera_n_7171892.html

121 http://www.theglobeandmail.com/news/toronto/canadas-big-city-mayors-put-heads-together-to-tackle-uber-issues/article26536393/

122 http://www.oregonlive.com/commuting/index.ssf/2015/04/user_pays_67750_in_portland_fi.html

123 http://sharedusemobilitycenter.org/news/disrupting-the-disrupters-3-cities-work-to-design-universal-taxi-apps/

124 See endnote 48

125 https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_CASE-STUDIES.pdf

126 https://www.itdp.org/wp-content/uploads/2014/10/Can-Shared-Mobility-Help-Low-Income-People-Access-Opportunity-.pdf

127 http://sharedusemobilitycenter.org/news/sumc-to-help-lead-1-6-million-low-income-carsharing-pilot-in-la/

128 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2574337

129 http://sharedusemobilitycenter.org/demonstrations-and-pilot-programs/

130 http://www.victoria.ca/EN/main/community/sustainability/economic/sharing-economy.html

131 http://www.uspirg.org/reports/usf/innovative-transportation-index

132 https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_Full-Report.pdf

133 https://www.youtube.com/watch?v=Vg3kS2cogug

134 i https://www.youtube.com/watch?v=Vg3kS2cogug

ii https://www.youtube.com/watch?v=ouNSZxO_83k

iii https://www.mobility.ch/en/about-mobility/mobility-cooperative/about-us/; https://www.mobility.ch/en/private-customers/become-a-customer/swisspass-subscription/

135 https://d3n8a8pro7vhmx.cloudfront.net/movela/pages/1723/attachments/original/1425515615/Sharon_Feigon_SUMC_LiveRideShare2015.pdf?1425515615

136 http://www.stm.info/en/info/fares/special-offers/integrated-mobility

137 http://www.alamedactc.org/files/managed/Document/15587/8.1_Promising_Practices_Integrating_Services_Across_Transportation_Modes_20150223.pdf

138 http://www.stm.info/en/press/press-releases/2013/transportation-cocktail--the-stm-again-adds-to-its-service-offer-for-bikes

139 http://www.alamedactc.org/files/managed/Document/15587/8.1_Promising_Practices_Integrating_Services_Across_Transportation_Modes_20150223.pdf

# 3b.

# SHARED SPACES

The Sharing Economy has raised the profile of diverse space sharing, including short-term rentals, co-working, coliving, cohousing, cooperative housing, and the online trade in personal storage and parking space.

What do these forms of space sharing imply for sustainability, and how can local governments leverage them for greater gains?

CHAPTER AUTHORS:
Larissa Ardis (lead) with Rosemary Cooper

# Summary

**Our review of the research and media coverage of these practices reveals that:**

- **Short-term rentals (STRs)** bring tourist dollars into regional and local economies but require thoughtful regulation, especially in communities with low vacancy rates. Regulation can help cities safeguard equity and housing affordability, and mitigate possible impacts on neighbours, community character, city resources, and availability of rental housing. It is possible that if STRs are making travel accommodation more affordable, users are shifting accommodation spending to more frequent flying and/or vacation consumption of goods, which generates more emissions and environmental impacts.
- **Housing cooperatives** appear to offer a more reliable means of creating affordable, inclusive housing than co-living (which tends to be based on market-rate rents) and cohousing (which tends to be taken up by a limited, higher-end demographic and offer little in the way of housing subsidies). None of these options are inherently more conservative in their use of resources than similarly dense forms of housing, like rental apartments, condos, or shared homes. More significant sustainability gains can be made if these housing forms: 1) adopt greener or retrofit construction; 2) use a more conservative allocation of per-capita indoor and outdoor space; 3) select locations that reduce car-dependence; and 4) cultivate pro-sustainability behaviours amongst occupants.
- **Co-working** has yet to demonstrate significant sustainability advantages and appears to be thriving already without government support. But local governments may want to explore how to fuse its creative aspects with libraries and business incubators, and prioritize support for co-working initiatives and client businesses that show transformative sustainability potential after careful evaluation.
- **Shared personal storage and shared parking spaces** offer little or no gains for sustainability—and there are indications that they are even counterproductive by supporting accumulation of goods, promoting car use, and compounding traffic problems.

## 3b.1 WHAT IS SHARED SPACE?

### SHORT-TERM RENTALS

The term short-term rentals (STRs) refers to the renting out of rooms, suites, and entire homes or apartments to visitors for stays typically shorter than 30 days. Privately owned web platforms charge fees for individuals to advertise their spaces, make online payment easy, and enable short-term renters to quickly find suitable places to rent. Online rating systems allow renters and customers to publicly rate each other, which imparts a degree of accountability.

### SHARED HOUSING

There are many other ways to share homes, including cooperative housing, cohousing, and coliving as described below.

Cooperative housing is a long-established housing form in which a building or set of buildings—owned by a cooperative—contains a number of self-contained, private units. Residents pay a modest share to become members (usually refundable when/if they leave) plus a monthly housing fee set by the cooperative to cover the actual cost of housing rather than to generate a profit. Coop members typically also enjoy access to some shared amenities, such

as kitchen-equipped common rooms, guest suites, and yard / garden space. Members are expected to participate in democratic decision-making and contribute time and skills to building and site maintenance. Housing cooperatives often offer income-tested subsidies to some members. Because members are not tenants, they enjoy a higher level of security in stable, long-term housing.

Cohousing differs from cooperative housing in that participants purchase (and, subject to cohousing project rules, may sell, or rent out) private, self-contained units as well as a portion of commonly owned and shared facilities. Shared amenities are more extensive than those in most housing cooperatives and typically include things like garden space, kitchens, work spaces, living rooms, laundry rooms, gyms, and guest suites. In some projects, these amenities are financed partly by slightly reducing the size of private space. Cohousers develop cohousing projects together, which can take years as they require everyone to agree on governance, land purchase, and building design. As with coops, cohousing projects require members to participate in decision-making and contribute to maintenance. They also explicitly seek to create a stable, family-like community through regularly shared meals, frequently planned social events, and a strong culture of mutual aid.[1] Many cohousing organizations also strive to include a diverse range of ages. The cohousing movement is placing a higher emphasis on green construction techniques and a small minority of projects are incorporating at least a portion of subsidized housing to promote greater socioeconomic diversity. There are at least 114 cohousing projects in the US[2] and at least nine in Canada.[3]

Coliving is a new twist on unrelated adults renting an apartment or house together. The "new" elements here are the scale (very large houses, even mansions, rented at market rates), types of renters (young professionals),[4] and the degree and motives of sharing a large space. Coliving has been described by advocates as "the practice of bringing extraordinary people under one roof to live, work and change the world together",[5] and as young professionals "building a new American dream in once empty suburban McMansions and luxury downtown digs" where residents are "carefully chosen for their ambitions and ideas".[6] Criteria for choosing (or "curating") participants vary, but often include things like ability to enrich the group's social and professional networks, a commitment to personal development, a spiritual path, entrepreneurialism, or a lower-footprint lifestyle. Many coliving houses develop mission statements and unique cultures, hosting events such as lectures, dance parties, and hackathons for entertainment and professional development.[7] Some use web technologies to assist communication on house issues, cost-splitting, expense-tracking, and carsharing,[8] and join networks of coliving houses that host each other's members and other guests.[9] Coliving increases accommodation purchasing power and access to spaces that include a socially stimulating atmosphere and/or luxuries like music rooms, yoga studios, solarium, shared office space, and pools.[10] Businesses are emerging to develop and manage coliving arrangements,[11] and even to develop buildings designed for coliving.[12] Coliving arrangements may cheapen the cost of accommodation for some people thanks to economies of scale, but they do not control rent rates.

## CO-WORKING

Coworking sites are office workspaces shared by a range of people working on their own independent businesses or projects (e.g. Citizen Space and Hub Culture Pavilions). They are typically privately owned and include a shared room with wifi; shared and private work tables or desks; kitchens and bathrooms; office equipment with printing, faxing, scanning and copying capability; and spaces for meetings, consultations, and private phone calls. Some also offer options like personal storage space, dedicated (exclusive) desks, video-conferencing supports, and mailboxes.

Coworkers include well-established freelancers, entrepreneurs with or without employees, employees of large companies, and to a much smaller extent, people new to self-employment.[13] They rent these spaces by the month, day, or hour. Coworkers enjoy the potential of these sites to connect them with others who may or may not be in their fields, and as a source of inspiration, ideas, productive networking, mutual accountability support, and local knowledge. Many cowork spaces actively cultivate a sense of community amongst regular users through scheduled social events. The unique cultures and social interchange that develops in cowork spaces is highly valued by coworkers,[14] especially those who typically work alone.

# 3b.2
## SUSTAINABILITY

### PART 1: DO SHORT-TERM RENTALS ADVANCE SUSTAINABILITY?

### STRs help lower the costs of life-enriching travel and have become an attractive source of income for many people. What are they contributing to urban sustainability?

#### LIVING WITHIN ECOLOGICAL MEANS:
#### Do STRs support living within our ecological means and absolute reductions in energy and material throughput?

One-planet living would require us to reduce our vehicle travel by 94% and air travel by 97%, and make the majority of our trips by transit, cycling, and walking.[15] We have found no evidence that people who use STRs fly or drive less than other people. STRs may well be helping to increase tourism—and with it, our travel-related impacts on the environment—by lowering the cost of the accommodation component of travel.[16] This would be consistent with frequent industry claims that STRs are not capturing existing demand for hotels but creating new demand.[17]

We have found no credible evidence that STRs are making more efficient use of existing buildings than would happen otherwise (for example, by owners or long-term renters), or that STRs are preventing construction of new hotels.

#### RESILIENCE:
#### Do STRs enhance resilience and climate adaptation?

We don't see evidence that STRs contribute significantly to adaptation. But we note that at least one STR platform (Airbnb) has developed a program with some local governments to pre-identify and activate STR operators willing to offer their services during local emergencies, such as: 1) accommodate people displaced by disasters and disaster service workers on an emergency basis; 2) distribute disaster preparedness materials to operators; 3) use its platform to notify operators about significant hazardous incidents; and 4) facilitate community emergency response training for STR operators. The company is also agreeing to waive its service fees for operators willing to accommodate displaced people for free. The government of Victoria, Australia has developed an agreement with Airbnb to help connect people in need of short-term emergency accommodation with STR operators willing to accommodate them.[18] Assuming STR operators sign up to participate, this could be a useful complement to any community preparedness strategy, and one that could be scaled up by engaging other STR platforms.[19]

#### NATURAL SYSTEMS:
#### Do STRs protect and restore natural systems?

We found no indications that STRs contribute to the protection and restoration of natural systems, nor that they directly impact natural systems.

#### EQUITY:
#### Do STRs advance equity and social inclusion and embrace diversity?

STRs clearly spread tourism dollars beyond traditional hotel districts and into neighbourhoods,[20] which may disperse economic development benefits more widely. However, there is evidence that these benefits are concentrated in select neighbourhoods and among higher-income operators.

For example, a New York State Attorney General report found that 6% of operators — some managing hundreds of properties — accounted for 37% of Airbnb revenue.[21] In San Francisco a study concluded that about 14% of operators controlled 32% of its listings.[22] As well, a Los Angeles study concluded that:

- 6% of operators offering two or more whole-home / apartment rentals generated 35% of the revenue;
- that 38% of operators with a single listing of any type generated no income whatsoever;
- and that 73% of Airbnb revenue in that city is generated in nine of L.A.'s 95 neighbourhoods, where rents are already 20% higher than the city-wide median.[23]

All of these studies reported that listings tend to be concentrated in higher-income areas of these cities. In some popular Los Angeles neighbourhoods STRs accounted for up to 7% of all housing units.[24]

Evidence[25] is mounting that in housing markets with low vacancy rates, STRs are further reducing the supply of long-term rental housing as landlords and homeowners with secondary suites turn to more lucrative STRs. Even the supply of rooms in shared housing stands to be affected, as owners and renters opt to rent or sublet rooms on a part-time basis to visitors rather than on a full-time basis to long-term tenants. Rental housing supply constraints contribute

to escalation of long-term rental housing prices, and concern about the link between this and STRs appears to be a primary driver of efforts to regulate STRs in communities around the world.

It is impossible to evaluate the argument that STRs are making a unique contribution to equity by helping "low- and medium-income hosts ... stay in their homes,"[26] for two reasons: 1) this statement can be made about virtually any economic activity, and 2) much of this appears to be based on anecdotal evidence only. The key assumptions and methodology underlying quoted statistics are not available for peer review.[27]

STR effects on rental supply and property values are likely to be experienced differently by diverse segments of society. The STR value of a property is more likely to be captured by people who can afford to purchase homes – either as STR income, or when its STR income-generating potential is factored into the selling price.[28] Because rent prices are affected by housing prices and rental housing supply, STR impacts on housing prices are more likely to be experienced as a negative by people with lower incomes, who are more likely to rent.

STRs undoubtedly spur many enriching new social and cross-cultural connections. There is also some evidence, however, that they enable subtle forms of discrimination. One study analyzed Airbnb and found evidence of a 'digital discrimination' effect, in which white STR operators were able to charge more than non-white hosts for comparable offerings.[29] Also, some disability advocates report[30] that many STR operators overstate the capacity of their premises to suitably accommodate people with disabilities, which may warrant stronger regulatory scrutiny.

### PROSPEROUS LOCAL ECONOMY:
#### Do STRs advance economic vitality and diversity, a level of self-reliance, a strong economy, and decent jobs?

STRs are diversifying local economies in at least three ways: 1) providing a source of income and business opportunities for operators; 2) spreading tourist dollars beyond traditional hotel districts, which supports other businesses; and 3) spawning directly related businesses—such as KeyCafe.com, which simplifies key pickup and dropoff for STR operators and clients, and VacationRentalCompliance.com, which helps cities enforce STR regulations in six Southern California cities.[31]

We can't say for sure how STRs affect local jobs. It is likely that STR operators managing multiple properties (like the top 100 in New York that control more than 10 unique Airbnb units each) hire workers to clean, cook, drive, do maintenance, and act as guides. Research is needed to compare the wages, job security, and working conditions for people in this unregulated sector to those performing similar work in the traditional hospitality sector.[32]

STR clients use public resources like roads, parking, public spaces, and communications infrastructure. Meanwhile, the STR industry exerts at least some downward pressure on hotel revenues, which reduces the amount of hotel tax revenue remitted to local and regional governments.[33]Whether this reduction in tax revenue significantly constrains government's ability to pay for basic services, or those that advance sustainability like affordable housing, healthy green spaces, or high-quality public transit, is uncertain and requires further research.

### QUALITY OF LIFE:
#### Do STRs ensure wellbeing for all and social connectivity?

STRs provide lower-cost alternatives to hotels and provide many authentic and memorable visitor experiences. It is probably also cultivating business skills among STR operators, which increases community capacity.

Many communities are moving to regulate STRs in light of complaints by some neighbours that residential homes, condos, and even rented properties are now operating like illegal hotels with absent managers and a constant stream of clients whose behaviour violates community standards.[34]

We haven't found any evidence that STRs promote more sustainable, healthful, lower-footprint lifestyles for operators or clients.[35]

## Why should local governments care?

Local governments protect access to affordable housing through planning, inclusionary zoning, and rent control. They help spread the benefits of tourism by collecting hotel taxes and reinvesting those in improvements for the public good.

For the most part, STRs have proliferated extra-legally — because they are not adequately described by pre-existing local laws[36] — or illegally, as residential rentals for less than 30 days are explicitly prohibited in most communities and because sellers of accommodation are usually required to pay tourism taxes to local and regional governments. Through a process of trial and error, local governments are learning how to respond to STR activities and to design workable regulatory systems that respond to city and sustainability priorities.

## CITY OF SAN DIEGO AND SHORT-TERM RENTALS

In August 2015, Judge Catriona Miller ruled a case in favour of the City of San Diego and fined Airbnb operator, Rachel Smith, nearly $25,000 for not having a permit required for a Bed and Breakfast and for not paying the bed tax imposed on hoteliers.[37] Smith's actions came to the attention of the City when her neighbours complained about the noise and increased foot traffic in the neighbourhood due to Smith renting out two bedrooms in her large historical house on Airbnb on a regular basis. Smith's case is not unique and the City of San Diego is undertaking a broader effort to respond to short-term rentals such as Airbnb and VRBO. City staff released a memo in August 2015 outlining the framework for a proposed ordinance developed by the Development Services Department. This draft ordinance recommends rules limiting the amount of time operators can rent out an entire space to less than a month in residential areas; specifies the need for a designated parking space for visitors in home sharing exchanges; and requires permits for many bed and breakfasts. City Council remains divided on a number of issues including the number of guests and visits per month or whether secondary suites and other spaces on residential lots can be operated as vacation rentals.[38]

While STRs generate new business and income-earning opportunities for residents, they are coordinated almost entirely online. This makes STRs difficult to observe or regulate. That said, hundreds of communities are now moving to regulate STRs out of concern for their impact on long-term rental supply, neighbourhood character, quality of life, quality of visitor experiences, and the revenues of a taxpaying hospitality industry. For example, the Government of Québec in Canada established a Tourist Accommodation Classification system in order to 'respect tourist accommodation establishments' and actively regulate and tax short-term rentals.[39]

## Trends and growth

STRs are not new, but have grown exponentially since 2008 when Airbnb launched a web platform that made them especially easy to coordinate. As of June 2015, this one firm is valued at $25.5 billion and operates in more than 34,000 cities in more than 190 countries. In mid-2014, hotel industry analysts indicated that Airbnb is growing by 20% per year and capturing 5% of New York City's tourist trade. Although Airbnb is the undisputed industry leader, there are dozens of other significant players, like Homeaway/VRBO, Flipkey, and OneFineStay.

The design of these web platforms makes it extremely challenging to quantify the different types of STRs (spare rooms, entire owners-occupied houses and apartments, or properties run strictly for STRs) that are listed or occurring. However, researchers using data-scraping software (and in the case of New York, court-ordered data about Airbnb's activities) have found that in tourist destinations, a significant component of STR listings[40] are for entire homes and suites that owners do not live in, with many operators[41] listing multiple properties. There are a growing number of people that are purchasing properties with the intention of listing them as STRs[42] as well as property management companies establishing to help owners manage these listings.[43] Some people are quitting their jobs to run Airbnb properties full-time.[44]

As a regulatory battle heats up, so does the war of words. STR companies claim they are greening travel[45] and strengthening local economies, while critics claim that unchecked proliferation of unregulated STRs in gentrifying neighbourhoods is helping to erode the supply of affordable rental housing[46] (which helps drive up rents) and deepening inequality. Businesses that operate STR platforms are funding lobby groups and mobilizing people who rent out their homes and suites to influence local governments.[47]

## Summary

STRs undoubtedly are a boon to the income-earning possibilities of local operators, to the accommodation offerings available to travellers, and to neighbourhoods that benefit from greater dispersion of tourist dollars. They provide lower-cost alternatives for travellers than hotels on average and yield many authentic and memorable visitor experiences. STRs also spawn directly related businesses such as KeyCafe.com and VacationRentalCompliance.com.

However, industry claims that STRs are reducing the construction of new hotels, using buildings more efficiently, and supporting greener travel cannot be verified due to a lack of transparency about industry-sponsored research, and gaps in independent research. We don't see STRs inherently

promoting a less consumptive lifestyle or inducing more sustainable purchasing decisions by operators or by users.

While STRs provide income for local operators, it is impossible to evaluate the argument that STRs are making a unique or significant contribution to equity by helping low- and medium-income hosts stay in their homes. A growing body of evidence suggests STRs are further reducing the supply of affordable housing units in neighborhoods with low vacancy rates, which appears to be a driving factor behind regulatory efforts around the world. Meanwhile, the STR industry exerts at least some downward pressure on hotel revenues, which reduces the amount of hotel tax revenue remitted to local and regional governments thus constraining to some degree the ability to pay for basic services and sustainability efforts. Data gaps about the impacts of STRs on many city priorities are significant and addressing these will be key; see Chapter 5 on *Addressing Data Gaps* for a variety of recommendations.

# 3b.2

## SUSTAINABILITY

### PART 2: DOES SHARED HOUSING ADVANCE SUSTAINABILITY?

**Shared space is not just for short-term rentals. There are also options such as coliving, cohousing, and cooperative housing that provide for long-term rental and ownership. These can promote lower ecological footprints to the extent that they:**

- Promote higher-density living, with less per-capita living space
- Extend energy and materials use through more intensive use of existing buildings
- Encourage lower consumption through sharing of household items, food, and transportation.
- Support low-emissions means of travel by locating in highly walkable communities
- Significantly reduce rates of car ownership and single-occupant vehicle trips through greater use of transit, active transportation, and car pooling
- Are built green and use renewable energy technologies
- Produce a substantial amount of food (more possible in suburban and rural cohousing)

*Cohousing and coliving are often promoted for their ability to make deep cuts to ecological footprints through shared use of resources.[48] But while resource savings are possible, they are neither the inevitable result of cohousing or coliving, nor that much different from other forms of higher-density living (like sharing an apartment or house).*

### Cohousing: In Search of Sustainability

Williams[49] completed a sustainability assessment comparing differences in per-capita consumption of space, goods, and energy for one-person households in self-contained living spaces, one-person households in cohousing projects, and residents shared apartments/houses. Although complicated by several factors,[50] the study suggests:

- **Significant domestic resource savings can be achieved when adults trade self-contained accommodation for a shared apartment or house.** In the UK, moving in with one to three other adults can save 23-77 per cent electricity, 38-54 per cent gas, and 45-65 per cent space.[51]

- **It is not clear if resource savings by an adult in a cohousing project are deeper than those from simply sharing any apartment or home.** This is partly because cohousing density varies widely, with most cohousers preferring more spacious facilities. One-person households on the lower side of the income scale saved energy but used more living space than their counterparts in self-contained accommodation. In the Williams study, consumption among the majority of Californian one-person cohousers was far greater than either the state or national average for one-person households living in self-contained accommodation. Table 3b.1 summarizes average resource savings calculated by Williams for one person who trades self-contained accommodation for: A): A shared house or apartment; and B): A single-person suite in a cohousing project.[52]

## Table 3b.1
### SELECTED FINDINGS OF WILLIAMS (2003) ON RESOURCE USE SAVINGS IN SHARED APARTMENTS & HOMES AND COHOUSING

| 2050 ECOLOGICAL SUSTAINABILITY GOALS | A: AVERAGE % SAVINGS ACHIEVABLE BY ONE PERSON BY TRADING SOLO / SELF-CONTAINED ACCOMMODATION FOR A SHARED APARTMENT OR HOME. | B: AVERAGE % SAVINGS ACHIEVABLE BY ONE PERSON BY TRADING SOLO / SELF-CONTAINED ACCOMMODATION FOR ONE-PERSON SUITE IN A COHOUSING PROJECT. |
|---|---|---|
| **Space (floor area)**[53] | 23 | 31 |
| **Electricity (kilowatt hours)** | 44 | 57[54] |
| **Gas (kilowatt hours)** | 40[55] | ? (not analyzed)[56] |
| **Kitchen goods**[57] | 30 | 7.5 |
| **Entertainment goods** | 29 | 0 |
| **Office goods** | 30 | 0 |

*See endnote for important notes on data calculations.[58]

- **The key predictor of space, energy, and goods consumption is not housing type but income.**[59] Cohousers in the US (including those in one-person households) typically earn much more than one-person households in self-contained accommodation. As in the UK, most cohousing participants in the US and Canada are fairly homogenous in terms of ethnicity (mostly white), education, and income (both higher than average). The cohousing movement has recognized this and is trying to address it, but lower-income housing opportunities in cohousing remain relatively rare. Most affordable cohousing efforts have been modest, with just one or two units subsidized at 80 – 100% of the median income.[60]
- **Energy and goods savings of one-person cohousing households also depend on environmental attitudes and practices, as well as the extent of participation in shared facilities and activities.** This partly depends on the values of those who start cohousing projects, the quality of relationships among cohousing members, and the context and structures that support sustainable behaviours. In the US, people who start cohousing projects typically already have pro-social and pro-environmental values. These values tend to be supported by cohousing lifestyles.
- **Most of the ecological savings made by cohousing in the US during the 1980s and 1990s were achieved through space reduction in individual units, as well as sharing of communal space, goods, and chores.** Eco-design, smaller units, and higher density are getting a greater focus – particularly in Pacific Rim countries.

That said, forms of collective housing like coliving, cohousing, and cooperative housing (and projects like Berkeley's Sandbox in particular) should not be overlooked for their potential to promote social aspects of sustainability. They do this by:

- Cultivating an ethic of cooperation and resource-sharing;
- Making communities more inclusive by lowering the rental or ownership cost of safe, quality housing; and
- Familiarizing people with cooperative, non-profit approaches to organizing other aspects of life, like workers' cooperatives, travel (e.g. car pooling, carsharing), and asset-sharing (e.g. tool libraries, seed-sharing). For example, many residents of the new cohousing project[61] in Vancouver, B.C. are part of Share Vancouver, an organization that seeks to connect organizations, people, community groups, and partner organizations keen to share or to facilitate sharing.[62]

## Coliving: In Search of Sustainability

Some coliving projects consciously seek to achieve a lower footprint. Notable among these is the Sandbox in Berkeley, California, which has 3,600 square feet and nine bedrooms – two of which are guest rooms. The founders, graduates of Bainbridge Institute's MBA in Sustainable Systems, encourage car-sharing and shared resource use, and are developing applicable metrics to gauge their progress.[63]

Is the Sandbox successful in lowering emissions? Assuming that non-guest bedrooms have one occupant each, the average space (private and shared) available to each resident ranges between 400 and 515 square feet. This would be considered large for a studio apartment, small for a one-bedroom inhabited by one person, and average-to-generous for a two-bedroom apartment inhabited by two people.[64]

It is entirely possible that some Sandbox members' footprints are getting smaller while others' are increasing. This depends on factors such as the number of occupants per room, and the amount of living space used prior to coliving. Carsharing is likely reducing car ownership and use among Sandbox members – who according to one report, all owned cars at one point[65] – and may also facilitate greater use of transit and active transport.

### BOX 3B.1
### NONPROFIT HOME-SHARING

One program in Deventer, Netherlands offers free rent to pre-screened, qualified students who agree to temporarily take up residence in a nursing home in exchange for providing at least 30 hours a month offering companionship and assistance to the 160 seniors who live there full-time.[66] A similar program in Newfoundland, Canada – HomeShare NL – matches home-owning seniors with students who can help out with chores in return for reduced rent.[67]

Programs that facilitate sharing of homes for reasons other than profit are proliferating, and hold the potential for a range of sustainability benefits. Find out more about these in the program directory at http://www.nationalsharedhousing.org

# 3b.2
# SUSTAINABILITY

## PART 3: DOES COWORKING ADVANCE SUSTAINABILITY?

For local governments, the question about whether to support the growth of coworking depends on whether it actually advances sustainability.

Relevant, peer-reviewed research on coworking is rare. Most widely quoted studies on the topic are based on self-selected samples of respondents and thus may not be representative. The research that does exist suggests that the sustainability gains of cowork spaces are subtle or even negligible.

### Does coworking promote resilience and living within ecological means?

There is no convincing evidence that coworking is leading us away from the status quo and toward the absolute reductions in energy and materials use that we need to live within our ecological means.

Co-working spaces offer marginally less space per member than new office leases, but cowork spaces are getting bigger and maintain an increasing percentage of empty desks to accommodate drop-ins.

Cowork spaces offer about 178.15 square feet of space per member on average,[68] while the US national average per worker is 183 square feet on new leases.[69] One in two workers in Canada and the U.S. want the option to drop in and use desks at any time (known as "hot-desking"),[70] which means that cowork spaces must maintain a considerable proportion of empty desks to accommodate fluctuating demand. A 2012 study reports that desk utilization at any one time is about 55%.[71] According to the Global Coworking Survey, coworking spaces are getting bigger (the maximum capacity of most spaces is now over 41 people), and the empty-desk proportion seems to rise along with cowork space size.[72]

We found no clear evidence that cowork spaces are more conservative in their use of energy and equipment.

Questions also surround how the intensity of utilization of space in cowork spaces compares to that of more conventional office environments. Which type of office gets more overall use in a 24-hour period? Do cowork spaces replace or supplement more traditional office space? Does access to a shared office translate into a rebound effect, wherein members enjoy more generous per-person allotments of office space than they had previously? Do cowork spaces use energy and equipment more conservatively? If cowork spaces replace users' needs to individually own equipment like printers and copiers, they are conceivably saving energy. But if cowork spaces are only partly occupied for extended open hours, and / or offer equipment that merely complements individually owned equipment, they may be contributing to higher consumption of energy.

We found no evidence that coworking is facilitating a shift toward more sustainable modes of travel.

The fact that cowork spaces can be located almost anywhere (including former industrial areas)[73] means they

have important potential to contribute to more complete communities, where people can walk or bike to work. But we haven't found any evidence that coworking is superior to any other office arrangements at conducing a shift to more sustainable modes of travel. Respondents to the Third Global Coworking Survey indicated that the proximity of a cowork space to one's home and "easy access to transport connections" is not a top priority the user's choice of coworking space: factors like social atmosphere, sense of community, and value for money placed much higher.[74]

### We found no clear evidence that coworking is greening employment.

Some research[75] suggests people using cowork spaces tend to work in the creative industries: new media, such as web development, programming, and graphic design; communications; journalism; and architecture. But there is little evidence that most cowork spaces are driving any significant shift towards more environmentally sustainable business models, a less consumptive culture, climate change mitigation and resilience, or restoration of natural systems.

## Does coworking advance equity, quality of life, social connectivity, and prosperous local economies?

### Coworking enhances connection and collaboration among coworkers.

Anecdotes abound about how coworking improves work lives by enhancing social connections and relationships. About 26% of respondents to a 2012 survey indicated that they were often "working on common projects" with fellow coworkers.[76] These opportunities for personal and professional connection among coworkers that are freelancers, independent entrepreneurs, or contractors may be increasingly important as this sector of the economy grows. Coworkers gain from each other's insights, relieve isolation, and are relieve communities of mutual accountability that support independent workers achieving their goals and deadlines.[77]

### We found limited evidence that coworking plays a critical role in creating new jobs or enterprises or raising incomes.

While coworking frequently leads to productive collaborations, these aren't necessarily playing a critical role in creating new jobs or enterprises. Early (2010) research indicated that just 4% of coworkers are actually just starting businesses.[78] We have also found no solid evidence that suggests coworking is a unique contributor to raising of incomes.

### Coworking spaces have some accessibility barriers – primarily cost.

Prices of coworking packages range widely, with the average member in the US paying about $353 per person per month.[79] A 2013/14 survey found that people who left cowork spaces cited cost of access as the top reason for leaving, after moving away or starting a job in another office space.[80] The ability to pay isn't the only qualifier to access many cowork spaces. About 75% of cowork spaces are open to anyone who can afford them; others require an application and/or involvement with specific industries.[81] Presumably, those who can afford coworking either buy full-time packages (typically about $500/month), buy part-time access and rely on additional space somewhere else (e.g., at home), or only need a part-time office to begin with.

### The gender imbalance in cowork spaces mirrors societal statistics; efforts to address this are rare.

Some research suggests that cowork spaces are characterized by a gender imbalance (two-thirds are men), which is seen to generally mirror the imbalance found in the wider entrepreneurial and small business statistics across Europe and the U.S.[82] Is this because of the difficulty of juggling entrepreneurial activity and childcare? If so, at least one cowork space is confronting that head on: Cubes and Crayons in California offers childcare as part of its office space package.[83] These solutions appear to be rare.

### Group purchasing has potential to reduce business costs and demand for new goods.

Cowork spaces offer one potential boon to people who use them: by partnering with other cowork spaces, members can use their group purchasing power for mutual benefit, such as car-sharing memberships. According to one international survey, there is considerable appetite for this among cowork space users, and for forming local or regional associations. A collective of cowork spaces in Ontario, Canada uses its group purchasing power to offer its members discounted packages of extended health insurance.[84] Depending on what is purchased by coworking groups, there could be the potential to reduce not only business costs but also the demand for the production of new business goods. For example, if a collective of cowork spaces were to purchase new (or even better) upcycled multi-purpose printers collectively, this could reduce coworkers' desire to have additional printers at home.

## Why Should Local Governments Care About This?

- Cowork spaces have potential to spawn creative new connections among diverse local business owners and build capacity among emergent businesses. Proponents say coworking fosters multidisciplinarity, collaboration across sectors, access to formal and informal training, and supports for self-employed people.[85]
- Cowork spaces can be located almost anywhere (including former industrial areas).[86] They cause few production-related impacts and range in size. This suggests at least some potential to contribute to more complete communities where people can walk or bike to work.
- Because they accommodate more flexible schedules of independent workers, cowork spaces could enable more intensive, efficient use of office space.
- As cowork spaces grow, they may affect times and modes that people choose to travel. Cowork spaces could reduce auto-dependency or increase it – depending on how users travel to get to them.

## Trends and Growth

Although independent businesses have long engaged in shared-office/rent situations, the term coworking was not coined until 2005. The business model of hosting a shared, wi-fi equipped space for multiple independent workers and businesses has since spread rapidly. In December 2014, Deskmag.com counted 5,780 coworking spaces around the globe.[87] This growth has been attributed to the rise of online collaboration thanks to cloud workspace and broader access to state-of-the-art software that enables this.[88]

Currently, coworking includes a tiny fraction of workers (an estimated 295,000 worldwide),[89] but this is likely to change. The US Bureau of Labour Statistics estimates that by 2020, 40 percent of the U.S. workforce will be freelancers, temps, independent contractors, and entrepreneurs who single-handedly run their own businesses.[90]

Coworking businesses and organizations are successfully using social media, social events, and international conferences to help develop a coworking "movement". About 27% of cowork spaces are members of networks, franchises, or associations — even across borders — to allow members to drop in and work at each other's spaces.[91]

Industry consolidation is also occurring, with coworking spaces increasing in size and franchises emerging.[92] There is also a push from within this sector to convene regional, national and international associations to advance their interests—for example, in improving visibility, increasing connections with other cowork spaces, and using group purchasing power to access benefits like health insurance and car-sharing memberships.[93]

Coworking proponents are invoking innovation, economic development, and sustainability arguments to press local governments to support the growth of coworking by:[94]

- leasing old, empty, publicly-owned buildings to coworking space organizers at discounted rates for limited time periods;
- providing grants and rewards to businesses that use cowork spaces;
- removing loopholes that allow land owners to reduce tax bills by keeping space empty;
- simplifying taxation and visa requirements for businesses that inhabit or get started in cowork spaces;
- financing the start-up and expansion of cowork spaces through grants and loans;[95]
- subsidizing memberships of people trying cowork spaces;
- funding research about cowork spaces and training people who start and run cowork spaces; and
- using local government networks and promotional resources to raise the profile of coworking.

## Sustainability Summary

The sustainable ecological and economic benefits of coworking appear subtle, mixed and relatively limited at this point in time. From a social perspective, co-working has gains in terms of increasing social connectivity but also challenges including access barriers – primarily cost – and gender imbalance.

The most promising aspects of coworking for sustainability include enhanced connections among isolated freelancers and entrepreneurs, and resource savings from group purchasing and sharing of equipment and transportation.

## BOX 3B.2
## SHARED STORAGE SPACES AND SHARED PARKING

### SHARED STORAGE SPACES

Personal storage space has been billed a "new frontier" of the Sharing Economy.[96] New startups, like San Francisco's Roost, are introducing web platforms that help connect people with space in their attics and garages with those needing a place to stow extra stuff – for a day, month, a year – for a less than the cost of commercial storage lockers.

The economic benefits for both parties are obvious. But does it help advance sustainability, and do local governments need to get involved?

**CBC Radio's Terry O'Reilly on the Sharing Economy:[97]**

> *"Because we are a society of consumers, we have now become a society of storage renters. Nearly one in ten households in the U.S. rents a storage unit. That represents a 65% increase since the year 2000. 60% of those renters already own a garage, 47% have an attic, and 33% have a basement – yet they still feel the need to rent additional space."*[98]

Considering that living within ecological means requires scaling back consumption substantially, cheaper shared storage is not a promising development.

The self storage industry has been one of the fastest-growing sectors of the US commercial real estate industry over the past 40 years, with almost 9% of all American households now renting extra storage space[99] Logic suggests that cheaper, more plentiful storage produce rebound effects (over time people investing in more stuff because of additional storage) similar to those that are found when highways are widened (resulting over time in more people travelling by private vehicle because of the real and perceived additional road capacity) and when travel accommodations are cheapened (travellers invest more money in flights and vehicle miles because accommodation costs are lower). If there is a benefit to cities, it is a potential reduction in demand for commercial storage lockers, which might allow repurposing of the light-industrial properties.

### SHARED PARKING

Businesses are also emerging to help people who own unused or partially used parking spots to rent them to people who need them. Will this relieve cities of the expectation to provide free or low-cost street parking? We think it likely that this option increases our parking resources and encourages more people to drive, and perhaps can lead to decisions to pave over private green space to extract more value from land.

In a sustainable sharing economy, local governments who seek to advance sustainability would not be encouraging trade that encourages people to accumulate and store more, or to drive more.

# 3b.3
## SHARED SPACES: A STRATEGIC OPPORTUNITY FOR SUSTAINABILITY

### Local Governments Enabling Short-Term Rentals for Sustainability

Regulatory approaches vary widely as communities begin regulating short-term rentals (STRs) to address their multiple impacts on: neighbours, civic infrastructure, renters, rental housing supply, visitors, traditional accommodation providers wanting a more "level playing field", and local government tax revenues.[100] Regulations are currently being invented and adjusted.

We've noted the following key elements in regulatory schemes:

### KEY ELEMENTS IN STR REGULATION

#### Contextual statements about:

- The purpose of the legislation
- Establishing local government right to place conditions on STRs deemed necessary to mitigate adverse impacts

#### Definitions of STRs typically include:

- STRs as a type of land use
- Types of operators: property owner, renter, or another party contracted to act on behalf of the owner or renter
- Type of rental: Whether STR is operator's primary residence; whether operator lives in residence most of the year; whether operator is present during rental
- Type of dwelling: for example, single-family detached, multi- family, or accessory to single-family detached

#### Typical requirements of operators include:

- Permits / licenses: one-time or renewable
- Permits / permit numbers to be posted (e.g. in unit, on all advertising)
- Safety inspections
- Insurance
- Notification of neighbours
- Quiet hours
- Parking policies
- Waste / trash disposal
- Operator / client agreements that spell out responsibilities / accountabilities to neighbours, government
- Conditions to ensure operators (or representatives) are quickly reachable in event of a problem
- Restrictions on size of functions at STR properties
- Detailed record keeping, for review by local governments on request
- Maximum number of clients at any one time
- Allowance only in operators' primary residences (operators required to provide proof)

#### Taxation rules define:

- Percentages of taxes to collect
- Local and/or state taxes
- Who collects / remits taxes (STR operator and/or STR platform)
- How often to remit

#### Complaint processes may include:

- A complaint line for neighbours / guests
- Dispute resolution process for neighbours / guests
- Typically graduated sanctions, with warnings, fines, temporary / permanent revocation of license

#### STR impacts contained by restrictions on:

- Number of nights per property per year
- Proportion of property to be used for STR
- Number of STRs per unit of area (e.g. census tract)
- Proportion of units in multi-family housing
- Percentage of dwellings allowed for STRs
- Ratio of STRs per unit of area relative to number of long-term rental properties
- Distance away from any other STR or hotel
- Zone (e.g. only in single-family residential, resort area, or high-density commercial)
- Cap on the total number of STR permits allowed at any one time (in some cases, established by the number of STRs in existence when the law is passed)

**Note:** Some communities are reportedly considering waiving restrictions during short seasonal events that bring in a massive influx of visitors.

We found no examples of local governments regulating STRs in order to significantly reduce ecological footprints, prepare cities and their residents for climate change, protect and restore natural systems, or promote greater equity inclusiveness and less consumptive lifestyles. For this reason our case studies[101] focus on communities that are seeking to address social and economic aspects of sustainability. The potential for local governments to leverage STRs for key ecological dimensions of sustainability is addressed later in Getting Ahead of the Curve.

# CITY CASE
# SHORT-TERM RENTAL ACCOMODATION (STR)

## 1. CITY OF PORTLAND, OREGON AND SHORT-TERM RENTALS

Portland's experience is instructive. The city's active real estate market[102] and 3.1% vacancy rate[103] provides motivation to protect long-term rental housing by regulating its 2,000+ STRs.[104]

### LIMITED LEGALIZATION, PERMITTING, AND TAXATION

The City of Portland defined STRs as a new category of housing in its planning code[105] and passed a law in 2014 that allows STRs in suites and homes where the operator lives nine months out of the year and for no more than five guestrooms in any single-family dwelling. In January 2015, this was conditionally extended to units in multi-family housing, where STR units can be no more than one unit or a maximum of 25% of the total number of units (whichever is greater). STR operators are also obligated by local law to:

- register in the City's Transient Lodging Tax program
- collect and remit 11.5% (state and local) taxes from clients
- keep detailed records of client stays for City inspection upon request
- complete safety inspections
- notify neighbours
- purchase permits biennially
- display permits in the STR unit and permit numbers in all advertising
- limit STRs to 90 nights per year
- undergo a Land Use Conditional Use Review where there are three to five bedrooms.

### AIRBNB AGREEMENT

The City also negotiated a private, separate agreement with Airbnb[106] to collect and remit city and state taxes on behalf of STR operators, and to remind operators of their obligations to comply with local regulations before posting an advertisement.[107]

Portland city staff reportedly suggested during negotiations that Airbnb lock listings of non-compliant operators, but the company did not agree to this.[108] However, it did create a field in its web advertisement forms that prompts STR operators to enter permit numbers once they have obtained these. During negotiations, Airbnb announced it would open a 160-employee customer-service center in Portland. It then promoted Portland as its first "Shared City". As part of this initiative, Airbnb has agreed to offer free smoke detectors and carbon monoxide detectors to operators who request this, work with the City to train STR operators on how to help with disaster relief, and make it easier for STR operators to donate earnings to local charities.[109]

### RESULTS

The City plans to complete an analysis of its regulatory effort next year.

Airbnb has since remitted millions in taxes to the City in lump sums, but its agreement with the City offers no effective way to identify operators who otherwise violate local laws (e.g. by operating without a permit, failing to post permit numbers in advertising, listing multiple properties, and renting out places they don't live in).[110] Airbnb argues that routine disclosure of STR operator names and addresses would violate STR operator privacy;[111] the Portland Commissioner has argued that routine disclosure of STR operator names and addresses to meet tax obligations and safety requirements is no less than what is required of any other local business.[112]

Rentals of entire homes and apartments by STR operators who do not live in them continue to be widely advertised. If recent independent analysis of Airbnb listings[113] is any indication, whole-home rentals constitute more than 56% of listed properties and multiple listings per STR operator are common.[114] As of February 2015, media reported that the City has not enforced restrictions on whole-home rentals. A Portland vacation rental management company representative was quoted as saying that the law is unenforceable "unless you have someone sitting outside the door to check the box that 'Yes, they stay here 270 days out of the year.'"[115]

The threat of a $500 fine for not displaying permit numbers does not appear to be motivating many STR operators. As of February 2015, 95+% of STR operators on Airbnb were not displaying permit numbers after the City-posted deadline for doing so,[116] and STR platforms continue to let them advertise without them. Recent media reports suggest the City is not aware of how many STR platforms have modified their websites to include a field to list permit numbers.[117]

Many researchers are using software to analyze the

distribution and types of STRs by neighbourhood. Here is one customizable, open-source example:[118] https://github.com/tomslee/Airbnb plus a roundup of data on Airbnb in several cities, produced using the same code: http://insideAirbnb.com/get-the-data.html

According to the City's Bureau of Development Services, STRs are only investigated when there is a complaint, and complaints don't actually result in fines—just an admonishment to apply for the appropriate permit. This system appears to do little to prevent emergence and operation of unpermitted STRs.

Recent news reports indicate that the City is now fining two STR companies who are not requiring operators to obtain permits and complete safety inspections.[119]

On the other hand, Portland's success in getting Airbnb to begin collecting taxes has broken new ground. Other cities (including Chicago, Washington, San Francisco, and Malibu) and at least one state (North Carolina) have since developed tax collection agreements with Airbnb.[120]

### FOR MORE INFORMATION:

- Portland's Accessory Short-Term Rental ordinance: https://www.portlandonline.com/auditor/index.cfm?c=28197&a=501886
- FAQ about Portland's short-term rental taxation and its agreement with Airbnb http://www.portlandoregon.gov/revenue/article/415034?#AgreementbetweenAirbnbandCoP
- Airbnb's (redacted) agreement with the City of Portland: http://www.documentcloud.org/documents/1223398-lodging-tax-agreement-between-Airbnb-and-the.html#document/p10/a167057
- Local media story archive: http://www.wweek.com/portland/tag-0-1-Airbnb.html See also this roundup of recent Portland of STR regulation developments: http://the-Airbnb-analyst.com/?s=Portland
- Independent quantitative analysis of STR listings in Portland (Airbnb only) http://insideAirbnb.com/portland/# and of Airbnb: http://insideAirbnb.com/
- Some suggestions for getting compliance, based on Portland's experience: http://the-Airbnb-analyst.com/encouraging-registration-outreach-compliance/

## 2. CITY OF AUSTIN, TEXAS AND SHORT-TERM RENTALS

Austin's response to short-term rentals is equally instructive.

### LEGALIZE, LICENCE, TAX, AND CAP

In 2012, the City of Austin, Texas began requiring all STR operators to purchase licenses ($285), which must be renewed annually, and to collect and remit a 9% hotel occupancy tax to the city from clients. Austin divides STRs into three types: 1) owner-occupied where the owner is "generally present" (this includes structures associated with the owner-occupied home, e.g. secondary suites); 2) not-owner occupied single-family residences and duplexes; and 3) not-owner occupied/ part of multi-family building (e.g. condos, apartments). STR types 2 and 3 are subject to area-based caps. For example, no more than 3% of the single-family detached homes within each census tract can be used for STRs.[121] STR operators also require proof of property insurance and a certificate of occupancy or of a certified inspection.

### RESULTS

By May 2014, the City had identified and contacted 1,089 local STR listings that were not complying with the new regulations by getting permits. Of those 1,089, approximately 72% led to a lodging provider either removing their posting or going through the licensing process. As of August 2014, there were 1,048 licensed STRs in Austin. Most of the licensed STRs (59%) are Type 1 (owner-occupied); 41% came from residences that are not owner-occupied.[122] To date, just 5% of the City's census tracts have reached their caps.[123] STR licence holders now receive regular reminders from the city for taxes and as of August 2014 were generating over $2 million in licensing fees and taxes for the City.[124]

There remain some challenges to the existing system:

- Some 28% of the listings investigated did not come into compliance with the City's registration requirements. A December 2014 audit found that when STR operators ignore letters warning of non-compliance, the investigations stall and documented results of investigations do not undergo a supervisory review. The City had not finalized any process for citing non-compliant STR operators because they are concerned that evidence may not be successful in court.[125]

- It is not clear what percentage of Austin STRs (estimated at about 3,000 by one group)[126] are now licensed.
- The law requires that licensed STRs include their license numbers in all advertising,[127] but a quick scan of Austin listings on STR sites suggest most operators aren't doing this. This complicates enforcement.
- As of January 2015, the Austin Code Department was refining its enforcement process for identified, unregistered STRs.

FOR MORE INFORMATION:

- Austin STR Ordinance No. 20130926-144: http://www.austintexas.gov/edims/document.cfm?id=199458
- Austin's STR program summarized: http://www.austintexas.gov/str
- Chart that allows residents to look up the number of available permits in a census tract: http://www.austintexas.gov/page/percent-strs-issued-census-tract
- Results of December 2015 audit of Austin STRs: http://austintexas.gov/sites/default/files/files/Auditor/AU14116.pdf
- Insight on regulation weaknesses: http://republicofaustin.com/2013/02/19/5-ways-to-beat-austins-short-term-rental-licensing-ordinance-during-sxsw/

## 3b.4
## GETTING AHEAD OF THE CURVE

### PART 1: LEVERAGING SHORT-TERM RENTALS FOR URBAN SUSTAINABILITY

Ensuring that Shared Space advances urban sustainability is an evolving challenge for cities. The following are some recommendations for local governments to discuss and explore further in the context of unique local priorities and circumstances.

# Q1.

## What can local governments do to maximize the positive impacts of STRs, like tourism dollars and local economic diversification, while mitigating possibly negative effects on sustainability?

### RECOMMENDATION:

**Use clear terminology.** We strongly recommend that local governments promote clear thinking about Short-Term Rentals (STRs) by using terms that reflect the fact that these are economic activities with implications for broader communities.

For example:

- The term **short-term rentals** makes this clearer than **home-sharing**. It also distinguishes STRs from private social activities that are not reasonably regulated, as well as from long-term rentals. It is more accurate than vacation rentals, as STRs also relate to travel for reasons other than vacations.
- Similarly, terms like **resident, operator, client, customer,** and **short-term renter** are more accurate than **host** and **guest** considering that money does not typically change hands in host/ guest relationships and that in many STRs, operators have little or no contact with clients.

### RECOMMENDATION:

Move beyond narratives concerned with "levelling the playing field".

Productive discussion about sustainability and STRs also suggests that local government move beyond the narrow frames of media narratives about "levelling the playing field" between "innovators" (STRs) and "outdated businesses" (the

established hospitality industry). Local government exists not to protect any particular business model or innovation for its own sake, but to promote the public interest. Innovation should be welcomed not as an end in itself, but as a means to ensure equity and to help communities thrive and people sustainably raise and maintain quality of life.

## Monitoring STR growth and impacts.

As with other significant economic activities, local governments need reliable, standardized data about STRs to understand how they relate to community progress toward sustainability. Data about STR locations, activity, and growth[128] can be analyzed and compared with data on:

- use of public infrastructure,
- supply and demand of both rooms and suites for long-term rental,
- real estate values to support local planning,
- policy development, and
- public safety.

Businesses that coordinate STR transactions are in the best position to make this information (in anonymized, aggregated, auditable form at the very least) available to local government, as other economic actors do as a matter of course. Unfortunately, STR platform owners have proven extremely resistant to doing so, with some contesting demands for data in the courts and coalescing groups of STR operators to resist regulation.

This is why we recommend that all communities officially legalize STRs (which currently exist in a legal grey area in many cities) but do so with a permit system, both to collect information to aid planning, and to support regulatory efforts that may be necessary now or in the future.

## RECOMMENDATION:

Legalize STRs with a straightforward permit system both to collect information for planning, and to support regulatory efforts.

## A well-designed system would:

- Clearly define the different types of STRs, including those which may be desirable to encourage, control, or prohibit.[129] Most regulations appear to make distinctions on the basis of whether the STR takes place at the operator's primary residence or not, and on whether the operator is present during the rental.
- Articulate the purpose of your permit system and how it will help meet your community's goals. Laws that do this have been found to be more resistant to court challenge.[130]
- Require all STR operators to be permitted, and all STR permit holders to display the permit number prominently on all advertising.[131]
- Make all STR permits time-limited and renewable, based on proven compliance with regulations reflective of changing city priorities.
- Collect sufficient data to enable year-over-year analysis and reporting on the spread and impact of STRs.
- Use transparent, objective, and readily verifiable indicators (for example, *the number of permitted STRs or whether the operator is on the premises during the STR rental* are more practical indicators than 'the number of nights an STR is rented out annually or the income earned by an STR operator' because municipalities can not verify these).
- Require STR operators to keep complete records for a reasonable period of time and report activity in a timely manner and in standard electronic formats (ideally, online) to streamline compliance monitoring and enforcement.[132]
- Assign primary compliance responsibility to operators rather than platforms that coordinate transactions
- Ensure the regulatory system pays for itself (e.g. through permit fees, inspection costs, and/or graduated sanctions for non-compliance).[133]
- Incentivize reporting of non-compliant STRs.
- Build in periodic reviews of permit system effectiveness and, if needed, adjustment.
- Generate publicly available reports on STR activity, analyzed in relation to community development and sustainability priorities.[134]

## RECOMMENDATION:

Local governments can align with other communities to share information about current developments around STRs. They can publicly press STR platform owners to support monitoring and regulatory efforts.

STR platform owners have already shown some willingness to support efforts by:

- Modifying web platforms so that anyone posting an ad

must acknowledge a local government-supplied page that displays local STR regulations,[135] and

- Providing an online prompt that enables owners to enter their permit numbers (as Airbnb agreed to do in Portland) so that they can be displayed prominently on the STR advertisement.

This campaign can also press STR companies to support community development priorities and demonstrate good corporate citizenship by:

- Collecting any applicable taxes at the point of purchase and remitting it, with information sufficient to support effective compliance auditing by regulators.[136] Airbnb already collects and remits tourism taxes at city- and state- wide levels,[137] albeit without associated data
- Providing a means by which government regulators can readily contact a noncompliant operator through the STR platform website without being blocked (as has happened on at least one STR platform)[138]
- Disabling listings that do not post a permit number (or otherwise advertise in violation of local regulations)

Equipped with sufficient information to design an effective regulatory system, local governments will be more able to consider whether and how STRs fit with their unique sustainability and city goals.

### To promote living within our ecological means, local governments can:

- Prioritize permits for STR operators that supply proof that their customers purchased transit day passes or rented bikes, that serve more regional than international travellers, and/or that show outstanding effort in waste reduction.[139]
- Avoid issuing permits where STRs appear to be displacing scarce rental housing in residential neighbourhoods that favour walking, biking, or transit, to protect opportunities for locals to avoid vehicle ownership and use.
- Promote the message that vacations closer to home and spending on experiences rather than goods are more effective ways to support sustainability than using money saved by staying in STRs to travel, fly, and shop more.
- Tax STRs and direct revenues into endowment funds and other initiatives that support land trusts, modifications for energy efficiency, and other sustainability initiatives.
- Ask sources of industry-funded studies on STRs (for example, on emissions implications) to offer more information on key assumptions, data collection, and analysis methods behind these studies so that they can be independently evaluated.

### To enhance resilience and climate adaptation,

- Look for ways to use Short-Term Rentals as a complement to preparedness strategies, like the Government of Victoria, Australia's agreement with Airbnb to help connect people in need of short-term emergency accommodation with STR operators willing to accommodate them.[140]

### To protect and restore natural systems,

- Invest a portion of STR tax revenues into urban greening, park acquisition, and conservation initiatives.

### To advance equity and embrace diversity,

Local governments should be alert to the possible impacts of STRs on rental housing supply and on land speculation. As well, governments should be aware that highly averaged numbers about city-wide impacts on rents[141] may obscure deep impacts on the neighbourhoods where Short-Term Rentals tend to be concentrated. In communities with stressed housing markets, we suggest including these measures into city permitting system:

- Establish caps on STRs to levels that preserve a healthy vacancy rate (e.g. 5%). You may need to establish STR caps at community-wide scale or a smaller (e.g. neighourhood or census tract) scale. A waiting list could be developed for neighbourhoods that have already met their caps.[142]
- Use a lottery to distribute a capped number of permits[143] to qualified applicants to promote fairness and to ensure that STR value cannot be reliably factored into housing and real estate prices. A phased-in decline in STRs might be required to re-establish sustainable levels.
- Limit STRs (of entire suites/homes, and of rooms) to primary residences where a renter or owner lives for the majority of the year.[144]
- Permit renewal could be made contingent on a minimum level of use to lower the burden of administering the system and to encourage STRs to provide great service to visitors.
- Promote the message that STR operators are as accountable to neighbours, clients, and their surrounding

community as any other business, and that accountability includes adherence to local laws, compliance with safety regulations, and disclosure of earnings to taxing authorities.

- Require STR permit applicants to prove they have lived at their primary address for at least a year before using it for STRs.[145]
- Invest a portion of STR tax revenue into affordable housing initiatives or an endowment fund for sustainable community development.

### To strengthen local economies and decent jobs,

- Encourage STRs in areas where they are most needed. Do this by establishing baseline caps on STRs for all neighbourhoods or census tracts, and then clear criteria for selectively raising these caps in areas where jobs and income-generating opportunities would be of greatest benefit.[146]
- Use local government purchasing power to reinforce ethical business practices. City employee business travel policy could require that government employees on city business use accommodation that complies with local laws. Encourage counterparts in other cities to commit to doing the same.
- Create jobs by contracting out the work of ensuring STR compliance, as has been done by several communities in Southern California's Coachella Valley.[147]

### To ensure wellbeing for all and community capacity,

- Consider the social and economic implications of proliferating STRs for neighbourhood residents and businesses, and use a transparent formula to establish a sustainable level of STRs for your community.
- Create an accessible, low-barrier process for clients, neighbours, and other stakeholders to register and resolve concerns about nuisance behaviour, health, safety risks.[148] Note: do not rely on complaint-driven systems to reduce the proliferation of unpermitted STRs, as the experiences of New York and Portland suggest this is not effective.[149]
- Require STR permit applicants prove that they have notified adjacent neighbours of STR plans, and/or post a publicly available list of permitted addresses alongside information about the type of permit.
- Work with other communities to share information on best practices for regulating STRs to meet your community's goals.
- Invest STR tax revenue into public spaces, amenities, and infrastructure (e.g. transit) that benefit locals and visitors.

### Ideas for a bolder, more creative approach:

- The Sustainable Economies Law Center (SELC) suggests communities partner with each other to develop a robust, non-profit short-term rental platform that allows registration, listing, booking, reporting, tax remittance, and permit renewal for STRs. The platform could be owned by a cooperative of local governments and financed either by fees from coop members or by levying a small percentage of each transaction. Cities could then require that residents use the municipal platform to book STR clients. This could simplify registration, support analysis and compliance, and redirect the 10% to 20% fees currently collected by platform owners to a city trust fund[150] that serves clearly articulated social goals. Fees could be raised or lowered as needed to respond to fluctuations in housing supply, creating incentives for STR operators to moderate engagement in STRs accordingly. Trust funds could be shared in the form of loans to affordable housing developments, redistributed back to residents (perhaps through an online system, as is used in Alaska to distribute income from the oil and gas revenue trust fund), or some combination of both. Eligibility requirements (such as having lived in the city for at least a year, as in Alaska) could be set for receiving dividends.
- A less ambitious alternative to a non-profit rental platform is to simply develop an online system that requires STR operators to speedily file readily verifiable client booking data (e.g. within 2 days of making a booking). This system could include random audits to promote accurate reporting; and reward participation by making it easier for operators to calculate their own tax bills, prioritizing participants for permit renewal, lowering permit renewal fees, and/or offering a partial tax rebate. Most importantly for cities, it could generate valuable, accurate data on STRs in real time.

## 3b.4
## GETTING AHEAD OF THE CURVE:

PART 2: LEVERAGING SHARED HOUSING FOR SUSTAINABILITY

# Q2:

# How can local governments enable the sustainability benefits of shared housing arrangements?

## RECOMMENDATION:

Local governments can support cooperative housing directly, change burdensome legislation, and / or lobby higher-level governments.

Many cooperative housing initiatives in the U.S. and Canada were created with the help of federal and regional government grants to subsidize low-income members. But despite the value of coops to affordable housing strategies, these grants and subsidies are markedly decreasing in both countries. Therefore, local governments can:

- Continue to lobby higher-level governments for continued support, and look for ways to support these initiatives directly (see specific measures below).
- Change legislation that places unnecessary burdens on housing cooperatives.

**EXAMPLE:** With help drafting a bill by the Sustainable Economies Law Center, the State of California made it easier for cooperatives to get mortgages, exempted coops from costly public report requirements, and made governance procedures more flexible with the passage of bill AB 569 in September 2014.[151]

Local governments can encourage cohousing development that:

- Is located close to transit nodes and / or that can demonstrate carpooling where these are not close by.
- Helps achieve deep and measurable cuts in emissions through higher-density living as well as additional systems such as passive solar, superior insulation, rainwater harvesting, greywater re-use and / or onsite water treatment, district heating, composting systems, substantial food production for members, substantial renewable energy use, retrofit existing buildings, and preservation of adjacent natural spaces.

**EXAMPLES:** Daybreak Cohousing in Portland[152] and Milagro Cohousing[153] in Tucson.

## RECOMMENDATION:

Ensure that cohousing helps create more inclusive and democratically governed communities.

Build on (rather than simply substituting for) ecological footprint benefits by ensuring that cohousing helps create more inclusive, democratically governed communities by:

- Extending the benefits of cohousing to a broader demographic by allocating a substantial portion of below-market units for households that earn significantly below area median income, and
- Educating the broader community on the benefits of cohousing and disseminating knowledge on its development by actively engaging with the surrounding community through regular open-houses, workshops, and the like.

Encouragement can take the form of:

- Increasing allowable density;
- Reducing the amount of parking that the development must provide for residents;
- Reducing possible impact on street parking (e.g. requiring the development include transit passes for residents, a car-share program, higher fees for street-parking permits for building residents,[154] bicycle storage and workshop space);
- Modifying laws and zoning that effectively prohibit emergence of collective living forms. Many cities restrict the number of unrelated adults that legally share a residence

(often originating in desire to prevent emergence of brothels) and/or the number of units on a parcel.

**EXAMPLE:** The City of Vancouver, Canada changed its rezoning bylaw in 2013 to enable development of cohousing.[155] New zoning codes were developed to accommodate "ecovillages" (cohousing projects with a strong sustainability mission) in Bloomington, Illinois and in the B.C. communities of Yarrow and the Cowichan Valley.

- Using density bonuses, community land trusts, and grants to promote creation of below-market housing.

**EXAMPLES:** This has been done in Madison, Wisconsin (Troy Gardens), Sebastapol, California (Petaluma Avenue Homes), and Boulder, Colorado (the Silver Sage and Wild Sage projects).[156]

## RECOMMENDATION:

Promote financial instruments that permit co-ownership.

- Know about (and promote) financial instruments that permit co-ownership among unrelated adults: for example, Vancouver City Savings Credit Union provides a Mixer Mortgage.[157]

## RECOMMENDATION:

Strategically monitor developments in coliving for evaluation and planning.

- Monitor developments in coliving to consider:
  - Are they promoting higher-density living, or simply increasing space purchasing power?
  - Is there solid evidence of per-capita cuts in use of electricity and non-renewable resources (like gas for heating) and / or shifts among members towards lower-emissions travel?
  - Are new developments for coliving setting and achieving ambitious energy conservation goals?
  - Are coliving arrangements changing norms and producing significant change in the way participants consume (even after participants leave these arrangements), or do rebound effects of saving money on housing and household goods translate into increased spending on travel or other goods beyond basic needs?
  - How do coliving houses relate to neighbours and community character?
  - Do coliving houses represent more intensive use of these homes than would otherwise occur (for example, by a family)?

### BOX 3B.3
### SHARED LIVING & AFFORDABILITY

IS COLIVING AN EFFECTIVE SUBSTITUTE FOR AFFORDABLE HOUSING STRATEGIES?

In San Francisco, where dozens of coliving houses have emerged in the past few years, a developer is hoping to cater to this new market with a new building that includes 23m2 (250ft2), upscale studios (to rent for about $2,000/month) and group kitchens. This had raised concerns that loopholes in the city's planning code would allow the developer to skirt the city's inclusionary zoning law[160] that requires developers to either pay fees to support affordable housing or build a portion of affordable units on site (12%) or off site (20%). Affordable housing advocates have also expressed concern about the price of these units for their size. According to the *San Francisco Business Times*, the debate around how to modify the planning code in a city with a housing crisis is now on: "Does relaxing rules let developers brew up innovations to address the housing crisis, or does it let them skate away from affordable housing obligations?"[158]

Read more at http://www.bizjournals.com/sanfrancisco/blog/real-estate/2015/04/affordable-housing-sf-bay-area-communal-living.html?page=all

For more information:

- Amendment to State of California legislation to reduce burdens on cooperative housing: tinyurl.com/qb6fqax
- Sustainable Economies Law Center (SELC) on how local government can enable or support different forms of shared housing: communityenterpriselaw.org/real-estate/ and communityenterpriselaw.org/zoning-and-housing/#fnref-8666-5
  - SELC also offers an e-book on legal principles for new sharing economy organizations (including

cooperatives): theselc.org/book

- Several case studies that discuss roles of government in helping cohousing incorporate below-market units:
- Jerome L. Garciano. *Affordable Cohousing: Challenges and Opportunities for Supportive Relational Networks in Mixed-Income Housing.* Journal of Affordable Housing & Community Development Law, (2011): www.jstor.org/stable/41429168
- Examples of affordable, green cohousing projects that benefitted from local government help: http://www.affordablecohousing.org/existing-communities
- Zoning code developed by O.U.R. ecovillage in Cowichan Valley, BC: http://www.ourecovillage.org/about/projects-research/our-rezoning-work/
- Articles introducing the coliving phenomenon:
  - http://www.shareable.net/blog/hacking-home-coliving-reinvents-the-commune-for-a-networked-age
  - http://www.sfgate.com/bayarea/article/Tech-entrepreneurs-revive-communal-living-4988388.php
  - http://www.grist.org/living/hacker-houses-offer-shared-living-for-the-young-green-and-tech-obsessed/
  - Jo Williams. *Homes For The Future: A Means For Managing The Singletons' Consumption Crisis?* Ethos, (2003). http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.406315

# 3b.4
## GETTING AHEAD OF THE CURVE

### PART 3: LEVERAGING COWORKING FOR SUSTAINABILITY

Coworking spaces are frequently promoted for their innovative use of space, economic development benefits, and association with the sharing economy. This has attracted some support from local governments.[159] For example:

- In 2013 the city of Milan and the local chamber of commerce created a €300,000 program to promote coworking as a means of stimulating entrepreneurship and the sharing economy. The program gives eligible individuals vouchers of up to €1500 to cover 50% of a year's worth of access to cowork spaces.[160]
- In Belgium, the government is supporting the development of eight cowork spaces through CoWallonia, which offers €3150 coworking scholarships to small tech-sector start-ups.[161]
- In Paris, the growth of the coworking "movement" has been supported by networking, promotion, and conference support by a local government organization.[162] The French Ministry of Industry has partnered with the private sector to create coworking spaces that include free events, tech sector training, and space for collaboration, production and testing of new projects.[163]
- The New Jersey Economic Development Authority recently approved nearly $1 million in low-interest loans for coworking space development and expansion to support entrepreneurship and technology start-ups.[164]

Further evaluation is needed to ensure these programs provide a satisfactory return on investment for local governments given existing and potential sustainability benefits, and the growth trends of the coworking industry. The case for government support is questionable if private sector cowork spaces deliver few or no documented ecological benefits, often show little or no impact on the broader community, and contribute little evidence of supporting start-up of businesses with high potential for transformative change.

### To consider:

- Cowork spaces are spreading rapidly, but presently account for a fraction of workplace activity — even among freelancers.[165]
- More than two-thirds of respondents to the latest version of an annual global survey of coworkers felt that the current supply of coworking spaces is either meeting or exceeding demand for them.[166]
- More than half of respondents to this survey indicated that finding new members is their biggest challenge by far. Only 13% reported not being able to provide enough workspace as a problem.[167]
- The same analysis also finds the sector is poised for growth,[168] with more than 75% indicating they are either profitable or "neither profitable nor not profitable",[169] which we assume means "breaking even".
- Not all of the private sector organizations want local government support. Some private-sector operations feel

these publicly funded fusions of private-sector initiatives with social goals compete with their operations or incur a cost in terms of workspace independence and creativity.[170]

This analysis is preliminary as it is based on a survey of self-selected participants; however we can make some initial recommendations. Local government support of cowork spaces should be tied to evidence that they are actually delivering clear sustainability benefits.

Websites like sharedesk.net and neardesk.com help workers find office space to rent by the hour in established cowork spaces, but new sites like sparechair.me are also connecting workers to temporary office space in people's homes. This could be a great use of existing space, or one more addition to the short-term-rental phenomenon that is creating challenges in the residential market.

Some local governments are exploring ways to apply the best aspects of cowork spaces to libraries,[171] traditional new-business incubators, and social enterprise development. These efforts seek to reproduce the energizing social interchange and innovation that can happen when people confer with others outside of otherwise siloed fields or occupations. Moreover, this provides opportunities for sharing of contacts and capacity-building through sharing professional tips. Although some cowork businesses are quick to distinguish these fusion arrangements from "genuine" cowork spaces, the potential of these hybrids to make valuable contributions to sustainability is exciting.

## CASE STUDY: GANGPLANK – CHANDLER, AZ

Gangplank is a non-profit cowork space that seeks to build communities by bringing tech-sector mentors and start-ups together. Founded by Jade Meskill and Derek Neighbors in 2007 with considerable assistance from the private sector (including $400,000 for building renovation), and later, the City of Chandler, Arizona, Gangplank defies easy categorization. Part community centre, cowork space, and tech business incubator, it admittedly does not look as glamorous as many private-sector cowork spaces[172] but users don't have to pay a fee to access it. "It's not about the space," Meskill told local media.[173]

> *"Our vision of being a free space and having true collaboration where people are potentially making world-changing projects are parallel goals,"* said Katie Charland, Gangplank director of operations. *"We're working toward projects that will change the community as well as grow businesses."*[174]

Gangplank is "anchored" by several tech-related businesses, who occupy the space rent-free but provide the City with consulting and community services and contribute to local schools and charities.[175] Established and emerging users of Gangplank include engineers, programmers, photographers, videographers, podcasters, painters, illustrators, and all manner of artists. All users who come in and use the free wifi are encouraged to "pay back" in social capital, by learning and sharing skills, mentoring, helping in the computer lab, or organizing and volunteering at events.[176] Engagement of youth figures prominently in the organization's ethic, and the site's computer lab is welcoming to kids of the people working there.[177] Chandler's downtown redevelopment manager has lauded them in local media for bringing a "whole new segment of business to the downtown" and credited them for having brought in a:

> *"whole new genre of people ... and interesting new connections with the outreach events they have done."*[178]

While Gangplank does not appear to be promoting significant reductions in terms of our impact on natural systems, it is unique in its recognition of the need for cowork spaces that are more inclusive and where social capital is the preferred currency.

Is Gangplank scalable? Yes, and no. What makes this project unique, and potentially difficult to scale, is that it is animated by people in the tech sector who favour social capital rather than money as its main currency.[179]

*"It takes a very specific group of people, and I'm not sure if this would catch on everywhere," said Stephanie Leibold of Tempe, who brings her Bold Ave. graphic design business to Gangplank twice a week. "You've got people here with a passion for this who are making it happen. Without someone that committed, it wouldn't happen. Most coworking spaces you hear about are a for-profit thing. Not everybody has that kind of vision. This is not for everybody. It's not supposed to be. It's a long-range, let's-make-a-change type of thing."*[180]

And yet, it is scaling, as local governments and some nonprofit donors see Gangplank delivering value in terms of mentorship and less formalized type of small business development than is typical of business incubators. A city façade grant helped Gangplank purchase its current location in converted downtown retail space. It now has two other locations in Chandler, Arizona; one in Richmond, Virginia; and one under development in Sault Ste. Marie, Ontario, Canada.

Its offerings now include conference rooms, computer labs, and a recording studio. Incubators in its Arizona locations have professional services agreements with the cities which obligate Gangplank to provide free services, event hosting, and advertising to city businesses. In return, the cities cover Gangplank's operating costs, including electricity and internet. Gangplank's Avondale, Arizona location is in a city-owned building, and that city budgets as much as $60,000 annually for Gangplank.[181]

Gangplank's evolution continues as it expands to an international level, hoping to create an organization where people are available 24-7. Part of its Tucson operation has amicably reorganized as CoLab and aligned with another non-profit organization, due in part to "monetary differences as well as philosophical ones". CoLab intends to function as a business incubator with a primarily local focus.[182]

## CASE STUDY: THE CENTRE FOR SOCIAL INNOVATION – TORONTO, ON

The Centre for Social Innovation, founded in 2004 in Toronto, provides a variety of capacity and resource supports for social mission-driven organizations. There are now four locations in Toronto and one in New York City.[183] The backbone of the Centre is the co-working space, ranging from private offices to meeting rooms, lounges and mixed-use work floors. The Centre works to catalyze innovation by fostering community entrepreneurship and cross-sectoral collaboration. It offers a variety of workshops and programs to help its members explore new ideas and accelerate change, including TechSoup Canada,[184] Agents of Change: City Builders,[185] and the Desk Exchange Community Animator.[186]

### Recommendations: Leveraging Coworking For Urban Sustainability

- Provide support to non-profit or social enterprise cowork spaces with a clear mission to support the development of transformative organizations and businesses.
- If supporting private cowork spaces for their presumed economic development benefits, consider prioritizing support for those that:
  - meaningfully quantify these benefits and the role those cowork spaces played,
  - make demonstrably more efficient use of energy and materials in construction and use: for example, through smaller per-person allotments of space; a mix of businesses that use the space at complementary times of day; a desk reservation system to ensure that the space is used efficiently; rate systems that reward people who walk or bike to work,
  - use greener materials and equipment, designed for durability and reuse,
  - involve a set proportion of businesses that promote less consumptive lifestyles (for example, through local purchasing or re-use), fairer distribution of opportunities (e.g. through fair trade), and local purchasing and markets,
  - provide childcare or scaled rates that make it easier for female participants to attend,
  - mix a wide range of socioeconomic classes and actively

recruit women entrepreneurs as members,[187]

- utilize partnerships with other cowork spaces to leverage group buying power for transit, car-sharing among workers for whom transit is not an option, purchase of local food, and energy production,
- provide professional development opportunities to under-engaged segments of the work force, and
- are (or become) cooperatively owned and managed, to increase community capacity to develop more inclusive work environments.

## For More Information:

- Find Canadian cowork spaces at Coworking Canada: http://www.coworkingcanada.ca
- A resource on the culture of private-sector coworking: http://www.deskmag.com
- Article: "Can Coworking and City Governments Partner?" www.shareable.net/blog/can-coworking-and-city-governments-partner
- Gangplank website: http://www.gangplankhq.com
  - Users' perspectives on Gangplank: http://www.yelp.ca/biz/gangplank-chandler
  - Press coverage of Gangplank: http://www.gangplankhq.com/press-room/
- The Centre for Social Innovation: http://www.socialinnovation.ca
- The HiVE Vancouver is a non-profit cowork space in Vancouver, BC: http://www.hivevancouver.com
- Ideas for combining cowork spaces with libraries: pcworld.com/article/241574/coworking_at_the_public_library.html

1 http://www.livewellcohousing.ca/discover-cohousing/six-characterisitcs-of-cohousing/
Cohousing has existed in Northern Europe since the 1960s. The concept of cohousing was introduced to the US by Charles Durrett, and Kathryn McCamant in their book *Cohousing: A Contemporary Approach to Housing Ourselves* (1988, New Society Press).

2 http://www.grist.org/cities/cohousing-the-secret-to-sustainable-urban-living/ and http://www.former.vancouver.ca/ctyclerk/cclerk/20130212/documents/p3.pdf

3 http://www.former.vancouver.ca/ctyclerk/cclerk/20130212/documents/p3.pdf

4 An interesting subculture among young professionals that has been identified with coliving is "digital nomads": freelancers in high-tech whose "location-independent" work allows them to move frequently to cities around the world: see
https://www.techinasia.com/coliving-spaces-digital-nomads/

5 http://www.shareable.net/blog/hacking-home-coliving-reinvents-the-commune-for-a-networked-age

6 Ibid.

7 Ibid.

8 http://www.sfgate.com/bayarea/article/Tech-entrepreneurs-revive-communal-living-4988388.php

9 https://embassynetwork.com/

10 http://www.sfgate.com/bayarea/article/Tech-entrepreneurs-revive-communal-living-4988388.php

11 For example, see http://www.buildcampus.com/

12 http://www.bizjournals.com/sanfrancisco/blog/real-estate/2015/04/affordable-housing-sf-bay-area-communal-living.html

13 A 2012 survey of coworkers found that 53% are freelancers, while the remainder are entrepreneurs with employees, 6% big company employees, and 8% who describe themselves as none of the above (the proportion of "other" respondents has increased from 5% two years ago to 8%, while entrepreneurs has fallen from 18% to 14%). The proportion of female coworkers is growing, up from 32% in 2010 to 38% today.
http://www.deskmag.com/en/1st-results-of-the-3rd-global-coworking-survey-2012
See also http://www.slideshare.net/deskwanted/global-coworking-survey-2012?ref=http://blog.deskwanted.com/

14 http://www.theatlantic.com/business/archive/2015/02/as-coworking-spaces-scale-can-they-keep-their-communal-vibe/385653/

15 Moore, Jennie. 2015. *Ecological footprints and lifestyle archetypes: Exploring dimensions of consumption and the transformation needed to achieve urban sustainability.* Sustainability 7, (4): 4747-4763

16 See http://www.priceonomics.com/hotels/ and http://www.tandfonline.com.proxy.lib.sfu.ca/doi/full/10.1080/13683500.2013.827159 - abstract

17 According to http://techcrunch.com/2012/11/09/airbnb-research-data-dump/[Airbnb public policy head Molly Turner argues that the data shows Airbnb is a complement to the traditional hotel or tourist industry." *The Economist* cites Airbnb as saying that "it does not displace existing lodging but is creating new demand":
http://www.economist.com/news/business/21601259-there-are-signs-sharing-site-starting-threaten-budget-hotels-room-all
See also http://skift.com/2015/06/01/hyatt-invests-in-onefinestay-to-figure-out-sharing-economy-appeal/

18 http://www.theguardian.com/australia-news/2014/oct/29/airbnb-agrees-to-help-find-shelter-for-displaced-disaster-victims-in-victoria

19 http://www.emergencymgmt.com/disaster/Airbnb-Partners-San-Francisco-Portland-Disaster-Relief.html

20 http://blog.airbnb.com/economic-impact-airbnb/ and http://www.sfchronicle.com/business/item/Window-into-Airbnb-s-hidden-impact-on-S-F-30110.php

21 New York State Attorney General report here: http://www.ag.ny.gov/pdfs/Airbnb%20report.pdf

22 See: http://www.sfchronicle.com/business/item/Window-into-Airbnb-s-hidden-impact-on-S-F-30110.php
http://www.sfbos.org/Modules/ShowDocument.aspx?documentid=52601 and http://www.laane.org/wp-content/uploads/2015/03/AirBnB-Final.pdf

23 See this study: http://www.laane.org/wp-content/uploads/2015/03/AirBnB-Final.pdf and http://la.curbed.com/archives/2015/03/airbnb_neighborhoods_los_angeles.php

24 From a *Los Angeles Times* analysis here: http://www.latimes.com/business/realestate/la-fi-airbnb-housing-market-20150311-story.html - page=1

25 News reports about an Airbnb-commissioned study from economist Thomas Davidoff indicate that STRs increases the average price of a one-bedroom unit by about $6 a month in New York, and $19 a month in San Francisco. See: http://blogs.wsj.com/developments/2015/03/30/airbnb-pushes-up-apartment-rents-slightly-study-says/?mod=WSJBlog
However, the averaging of numbers over many neighbourhoods obscures magnitude of impacts at the neighbourhood level. Given researcher findings that STRs tend to be concentrated in neighbourhoods that are rich in amenities, it is very likely that the effect of STRs on rental supply in some neighbourhoods (see InsideAirbnb.com) is considerably higher than these averages. We cannot verify this because Airbnb has not made the Davidoff study public. A new study from the City of San Francisco (http://www.sfbos.org/Modules/ShowDocument.aspx?documentid=52601) indicates that in some San Francisco neighborhoods, Airbnb units could comprise as much as 40 percent of potential rentals, or up to 23.2 percent of the total citywide vacant units—and these numbers are considered conservative because the study only examined one STR company's listings.

26 See https://www.airbnbsf.com/ and https://www.airbnbsf.com/making-san-francisco-affordable

27 For example, see http://www.blog.airbnb.com/economic-impact-airbnb/ Were respondents to the Airbnb survey representative of all of the operators who list on Airbnb? How does the percentage that Airbnb operators spend on "important household expenses" compare to people working in any other occupation? How is "low or middle income" defined (does "income" refer to earnings from STRs, or earnings in general) by Airbnb? How are STR earnings distributed among low, medium, and high-income earners in studies like https://www.airbnbsf.com/making-san-francisco-affordable?

28 Discussions like this https://community.homeaway.com/thread/47892 suggest these calculations are being made.

29 http://hbswk.hbs.edu/item/7429.html

30 See http://nypost.com/2014/11/03/airbnb-spots-dupe-the-disabled-on-accessibility-advocates/

31 http://www.techpresident.com/news/24059/how-cities-adapt-age-airbnb

32 http://www.mobile.nytimes.com/comments/blogs/bits/2014/02/05/sharing-is-caring-unless-it-costs-you-your-job/

33 Georgios Zervas, Davide Proserpio, & John W. Byers. *The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry.* Boston University, 14 December 2013.
http://www.people.bu.edu/zg/publications/airbnb.pdf
In a study of the effect of Airbnb in Texas this report estimates that each 10% increase in Airbnb supply results in a 35% decrease in monthly hotel room revenue, with lower-priced hotels and those not catering to business travel being the most affected. In New Orleans, STRs have been estimated to cost the city $1.4 million annually in lost revenue from taxes and licensing fees that would otherwise be paid by customers of licensed hotels, motels, inns and bed-and-breakfasts (http://www.nola.com/politics/index.ssf/2013/03/new_orleans_residents_slam_ill.html).

34 Charles Gottlieb: *Residential Short-Term Rentals: Should Local Governments Regulate the 'Industry'?* in Planning & Environmental Law Vol. 65, Iss. 2, 2013.

35 Highlights of an Airbnb-funded study (https://www.airbnb.ca/press/news/new-study-reveals-a-greener-way-to-travel-airbnb-community-shows-environmental-benefits-of-home-sharing) claim that STRs offer a greener way to travel. This conclusion is based on a "comparison of the top 5th percentile hotels (in terms of energy use) from an Energy Star report to residential energy data for the 40-50th percentile of homes". Airbnb has not publicly released the study or enough methodological detail to determine whether this is an appropriate comparison, whether its "more than 8,000 survey responses from hosts and guests worldwide" are representative of the population studied, or whether emissions calculations considered rebound effects on consumer goods, vehicle use, and flying. The Cleantech study highlights are critiqued here:
http://www.blog.wtmresponsibletourism.com/2014/09/02/airbnb-homesharing-sustainability/

36 For example, see http://www.latimes.com/local/california/la-me-adv-illegal-rentals-20150208-story.html#page=2

37 http://www.sandiegoreader.com/news/2015/aug/10/ticker-airbnb-rachel-smith-fined/#

38 http://www.voiceofsandiego.org/topics/government/city-clears-a-path-for-airbnb/; Proposed Ordinance: http://www.scribd.com/doc/274357266/Prospective-San-Diego-Short-Term-Vacation-Rental-Home-Sharing-Regulations

39 Government of Québec - Tourist Accommodation Classification - http://citq.qc.ca/en/classification.php; An Act Respecting Tourist Accommodation Establishments (Sept 2015) -http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/E_14_2/E14_2_A.html

40 Note that although we use the term 'hosts', 'operators' and 'STR operators' interchangeably at times, we prefer the latter two terms, because money is not typically changing hands in a host-guest relationship. Also, in STRs, "hosts" are not necessarily even people who own, live in, or have ever lived in, the suites for rent. Many of these rentals take place without hosts ever meeting guests, and many of these transactions are managed by intermediaries.

41 Ibid.

42 http://greatergreaterwashington.org/post/25030/the-rise-of-the-airbnb-investment-property/; http://fortune.com/2013/11/07/profiting-13k-a-year-on-an-airbnb-rental-maybe/; http://www.fastcompany.com/3021179/secrets-of-running-a-six-figure-airbnb-business; http://needwant.com/p/buying-apartment-airbnb/;

43 http://www.sfgate.com/business/article/Airbnb-spawns-array-of-companies-to-aid-hosts-5282838.php

44 http://www.seattleweekly.com/home/960313-129/airbnb-is-soaring-in-seattle-is

45 Airbnb has published selected findings from a study it commissioned from Cleantech: https://www.airbnb.ca/press/news/new-study-reveals-a-greener-way-to-travel-airbnb-community-shows-environmental-benefits-of-home-sharing, but has not made the actual study public.

46 For example, see: http://www.sfbos.org/Modules/ShowDocument.aspx?documentid=52601 and

47 http://www.laane.org/wp-content/uploads/2015/03/AirBnB-Final.pdf
For example, see http://www.stradvocacy.org. Example of mobilizing here: https://www.community.homeaway.com/thread/21457 and http://www.bizjournals.com/sacramento/news/2015/05/13/airbnb-channeling-uber-mobilizes-customers-in.html.

48 For example, the submission of Cedar Cottage Cohousing (Appendix G to the City of Vancouver report at http://www.former.vancouver.ca/ctyclerk/cclerk/20130212/documents/p3.pdf) indicates that "those living in cohousing consume nearly 60 percent less energy in the home."

49 Jo Williams. *Homes For The Future: A Means For Managing The Singletons' Consumption Crisis?* Doctoral thesis from University of London. 2003. http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.406315

50 Note also that when controlled for income, the sample of low-income cohousers (those earning less than $20,000 annually) was reduced to 3 cases.

51 Jo Williams. *Homes For The Future: A Means For Managing The Singletons' Consumption Crisis?* Doctoral thesis from University of London. 2003. http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.406315
and, Jo Williams. *"Homes for the Future: A Sustainable Way to Accommodate One-person Households.* High Beam Research. 1 April 2005. (http://www.highbeam.com/doc/1G1-133606456.html).

52 Jo Williams. *Homes For The Future: A Means For Managing The Singletons' Consumption Crisis?* Doctoral thesis from University of London. 2003. http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.406315

53 Note that floor area is not the same as volume, which makes it a less precise measure of use of resources for heating.

54 This figure was quoted on p. 198, appears to be an average of 47% savings achieved by units of 500-1000 square feet and 69% of all units above 1000 square feet. Baseline data was sourced from state or national electricity data from 1997 and 2001 and compared with Williams' cohousing resource audit.

55 This figure deduced from Williams (2003) statement on p. 44 that there is a -0.4 correlation between gas consumption and number of persons in a household. Chart near this statement shows a decline for 1-4 persons. However, discussion on p. 191 suggests that gas savings per person tend to flatten once income reaches a certain level.

56 Gas information was apparently collected by Williams' cohousing resource audit survey but analysis of these figures in cohousing relative to state or national averages was not included in her study.

57 Kitchen goods, entertainment goods, and office goods figures are based on a sum of ownership of a specific basket of goods.

58 Apartment / home sharing resource savings calculations are based on secondary data sourced from government sources in the UK. Shared housing statistics used may include residences with children and thus may understate some of the resource savings of moving in with adults. Cohousing resource savings data are based on 51 self-selected one-person cohousing households compared with California and in some cases US-wide data about consumption by one-person households. Consumption patterns in these two countries are quite different: Americans consume considerably more space, energy, and goods. The highest savings in energy use in cohousing is linked by Williams to much higher (relative to UK) per capita baseline consumption of space and energy of Americans. Baseline energy and goods data in both countries predated the proliferation of devices like cell phones (considered a luxury item in this study), laptops and other personal computing devices. Transportation habits (a key element of ecological footprint calculation) were not considered or compared.

59 A majority of one-person cohousers in the study earned between $50,000 and $69,000 annually--almost seven times more than the California state average of $10,000 to $15,000 of the California state average of one-person households.

60 Jerome L. Garciano, *Journal of Affordable Housing & Community Development Law*, Vol. 20, No. 2 (Winter 2011), pp. 169-192, Published by American Bar Association, Stable URL: http://www.jstor.org/stable/41429168

61 http://vancouvercohousing.com

62 http://www.vancourier.com/community/vancouver-special/kensington-cedar-cottage-cohousing-coming-to-the-neighbourhood-1.590107

63 http://www.shareable.net/blog/the-sandbox-interview-a-co-living-lab-for-sharing-everything

64 Some coliving places in San Francisco have considerably more space, like the Embassy, a 7,500-square-foot, eight-bedroom mansion near Alamo Square.

65 http://www.shareable.net/blog/the-sandbox-interview-a-co-living-lab-for-sharing-everything

66 Find out more at http://www.thejournal.ie/help-the-aged-1814698-Dec2014/

67 http://www.homesharenl.ca/

68 See this 2014 Deskmag study, at 1:02: shows average square foot per member of office space as about 178 square feet / 16.5 square meter per member: https://www.youtube.com/watch?v=hutCeXQ9Z6Y

69 http://www.normmiller.net/wp-content/uploads/2014/04/Estimating_Office_Space_Requirements-Feb-17-2014.pdf

70 http://www.deskmag.com/en/coworking-europe-vs-north-america-spaces-187

71 http://www.deskmag.com/en/1st-results-of-the-3rd-global-coworking-survey-2012

72 http://www.deskmag.com/en/global-study-coworking-spaces-169 See also information about members per coworking space: https://prezi.com/epoe0ogs-wzq/coworking-europe-2014/?utm_campaign=share&utm_medium=copy

73 The Hub Brussels is located in a former chocolate factory in Ixelles, Belgium.

74 http://www.slideshare.net/deskwanted/global-coworking-survey-2012?ref=http://blog.deskwanted.com/ See also slides 12 and 13 at http://www.slideshare.net/deskwanted/global-coworking-survey-2012

75 Note that this research (2010) is already somewhat dated and represents a self-selected sample of 661 people from 24 countries: http://www.deskmag.com/en/the-coworkers-global-coworking-survey-168

76 http://www.slideshare.net/deskwanted/global-coworking-survey-2012?ref=http://blog.deskwanted.com/

77 http://www.shareable.net/blog/cotivation-helps-freelancers-succeed-through-mutual-accountability

78 http://www.entrepriseglobale.biz/wp-content/uploads/2010/11/CoworkingEUropeSurveyFinal.pdf See also http://www.slideshare.net/deskwanted/global-coworking-survey-2012 slides 12 and 13

79 https://prezi.com/epoe0ogs-wzq/coworking-europe-2014/?utm_campaign=share&utm_medium=copy

80 Ibid.

81 https://prezi.com/8uepdp7bstfo/the-preliminary-results-of-the-4th-global-coworking-survey/

82 From the first global coworking survey, at http://www.deskmag.com/en/the-coworkers-global-coworking-survey-168

83 http://www.entrepriseglobale.biz/wp-content/uploads/2010/11/CoworkingEUropeSurveyFinal.pdf

84 See http://coworkingontario.ca/cohip/ and http://www.deskmag.com/en/do-coworking-spaces-need-a-coworking-lobby-888

85 This information came from an early (2010) survey of 47 European cowork spaces (self-selected), and thus may not be representative. http://www.entrepriseglobale.biz/wp-content/uploads/2010/11/CoworkingEUropeSurveyFinal.pdf

86 The Hub Brussels is located in a former chocolate factory in Ixelles, Belgium.

87 From latest analysis of Deskmag's annual global coworking survey, shown here: https://www.youtube.com/watch?v=hutCeXQ9Z6Y See also http://www.nytimes.com/2014/02/18/business/at-the-next-stop-an-office-and-coworkers.html

88 http://www.entrepriseglobale.biz/wp-content/uploads/2010/11/CoworkingEUropeSurveyFinal.pdf

89 From latest analysis of Deskmag's annual global coworking survey, shown here: https://www.youtube.com/watch?v=hutCeXQ9Z6Y This 2011 Freelance Industry Report from the International Freelancers Academy surveyed more than 1,200 freelancers in almost two dozen different fields and professions, and found that only 3% of freelancers are currently using shared work spaces outside of their homes: http://web.archive.org/web/20130811144955/http://d3go1ztdjepprc.cloudfront.net/ifd2011/FreelanceIndustryReport2011.pdf

90 http://www.bls.gov/opub/mlr/2012/01/art4full.pdf

91 According to this source http://www.deskmag.com/en/1st-results-of-the-3rd-global-coworking-survey-2012, 79% are independent, while 5% are in a franchise, 6% are part of an association, and 10% are in a network of spaces. See also See https://www.youtube.com/watch?v=hutCeXQ9Z6Y at 1:58.

92 http://www.deskmag.com/en/the-future-of-coworking-882

93 This survey (probably not based on a representative sample of coworkers) suggests that at least 60% of respondents support the idea of forming associations at levels ranging from local to international: http://www.deskmag.com/en/do-coworking-spaces-need-a-coworking-lobby-888

94 For example, see http://www.deskmag.com/en/ten-things-to-tell-the-government-about-coworking-173

95 See for example http://njslom.org/grants/article/2015/coworking.html

96 http://www.cultofmac.com/287126/roost-sharing-economy-storage/

97 http://www.cbc.ca/radio/undertheinfluence/the-sharing-economy-1.2983680

98 Ibid.

99 Fact sheet on US personal storage trends here: http://www.selfstorage.org/ssa/Content/NavigationMenu/AboutSSA/FactSheet/default.htm

100 At the more extreme ends of approaches to regulation: some communities have no regulation of STRs at all, while Santa Monica, California just passed what is regarded as the most aggressive approach taken by any community yet: a law that effectively bans all types of STRs except those which take place in the operator's primary residence with the host present. See http://www.forbes.com/sites/andrewbender/2015/06/15/new-regulations-to-wipe-out-80-of-airbnb-rentals-in-californias-santa-monica/ and Tim Logan, "Plan targets short-term rental units; Santa Monica weighs a ban on most of the vacation lodging listed on Airbnb, other sites", *Los Angeles Times,* April 28, 2015.

101 Please note that all of these cases are evolving daily and therefore should be seen as instructive (but possibly already dated) snapshots.

102 http://www.oregonlive.com/front-porch/index.ssf/2015/03/portland-area_home_prices_gain.html

103 https://onedrive.live.com/view.aspx?cid=F4B5488CC7EBEC99&resid=f4b5488cc7ebec99!3008&wacqt=sharedby&app=Excel

104 See: http://www.insideairbnb.com/portland/# and http://www.wweek.com/portland/article-22785-city_for_rent.html
Note that while Airbnb figures prominently in the Portland discussion, STRs are coordinated on at least 11 web-based platforms: http://www.wweek.com/portland/blog-32979-city_of_portland_threatens_airbnb_and_rivals_with_.html. The bulk of those are likely to be with Airbnb, as its agreement with the City [discussed below] specifies that the company wants to be treated as a hotel with 1,600 rooms.
http://www.oregonlive.com/front-porch/index.ssf/2014/07/airbnb_acting_as_portlands_lod.html

105 These are called "Accessory Short-Term Rentals".

106 Note that while Airbnb figures prominently in these cases, the challenges discussed relate to all short-term rental platforms. Airbnb gets our attention because it is so powerful in the marketplace. Its evolving relationship to regulation is keenly watched as an indicator of the industry's direction.

107 STR operators must still register with the Transient Lodging Tax program regardless of which platform they use, and collect and remit taxes on all STRs that are not made through Airbnb.

108 http://skift.com/2015/02/23/airbnb-faces-big-fines-in-portland-if-hosts-dont-get-city-permits/

109 http://www.bizjournals.com/portland/blog/2014/03/airbnb-launches-shared-city-initiative-in-portland.html
http://fortune.com/2014/03/26/airbnb-cozies-up-to-cities/

110 According to http://www.oregonlive.com/front-porch/index.ssf/2014/07/airbnb_acting_as_portlands_lod.html, "Airbnb would turn over some information — potentially anonymous ID numbers — during a tax division audit, which Williams says it conducts for most hotels every three years. For Airbnb, the equivalent of a hotel more than twice the size of Portland's largest, those audits would be more frequent. But the city uses sampling, so only a small amount of data would be turned over — one day's worth, perhaps."

111 Some sources (e.g. http://www.statesman.com/news/news/local-govt-politics/austin-broadens-short-term-rental-rules/nWdHG/) indicate that the reason STR companies don't want to share this data is because it would make properties more subject to burglaries when unoccupied. It is not clear why STR properties would be more subject to burglaries than any other local residence.

112 Mesh, Aaron: "Video: City Commissioner Nick Fish Berates Airbnb Lobbyist." Willamette Week. 22 Dec. 2014. http://www.wweek.com/portland/blog-32614-video_city_commissioner_nick_fish_berates_airbnb_l.html19 Feb. 2015.

113 http://insideairbnb.com/portland/

114 For example, a *Williamette Week* analysis identified 88 rentals offered by 16 hosts—some of whom live out of state. See http://www.wweek.com/portland/article-23993-hotel_california.html

115 Quoted in http://www.wweek.com/portland/article-23993-hotel_california.html

116 http://www.wweek.com/portland/blog-32871-portlands_deadline_for_airbnb_safety_permits_passe.html
We do not have comparable data for other STR companies.

117 Ibid.

118 We have not tested this code.

119 http://www.wweek.com/portland/blog-33282 city_of_portland_fines_homeaway_$326500_in_short_term_rental_crackdown.html
Fined companies are Homeway and Vacation Home Rentals of Newburyport, Massachussetts. Other companies have received warning letters.

120 http://www.latimes.com/local/lanow/la-me-ln-airbnb-to-begin-charging-hotel-taxes--20150406-story.html

121 http://www.austintexas.gov/sites/default/files/files/Code_Compliance/STRs/STR_FAQ_Packet_2-20-2015.pdf

122 The results of an audit of Austin's program are available here: http://www.austintexas.gov/sites/default/files/files/Auditor/AU14116.pdf

123 Austin displays current and available licences per census tract at https://austintexas.gov/page/percent-strs-issued-census-tract

124 http://www.austintexas.gov/sites/default/files/files/Auditor/AU14116.pdf

125 Ibid.

126 https://www.change.org/p/city-of-austin-code-compliance-require-type-ii-and-type-iii-str-licensees-to-include-their-license-number-in-all-advertisements-and-enforce-compliance-for-those-operating-in-violation-of-the-existing-ordinance

127 http://www.austintexas.gov/edims/document.cfm?id=199458

128 This is an example of tracking the prevalence and spread: http://insideairbnb.com/portland/#

129 This piece about Burlington, Vermont emphasizes the need for clear definitions of short-term rentals in law: http://www.burlingtonfreepress.com/story/news/local/2014/08/16/burlington-puzzled-airbnb-rentals/14124667/We recommend differentiating these types based on how present the host is during the period of the short-term rental, and whether the host actually lives in the unit. The Sustainable Economies Law Center suggests Hosted Primary Residences, Un-Hosted Primary Residences, and Vacation Rentals. https://www.scribd.com/document_downloads/direct/258500755?extension=pdf&ft=1430611888&lt=1430615498&user_id=248517073&uahk=TfxzYJLVfiNc3AHGT27nWgpgvEs

130 See: Charles Gottlieb. *Residential Short-Term Rentals: Should Local Governments Regulate the 'Industry'*. Planning & Environmental Law, Vol. 65, Iss. 2, 2013.

131 For example, permit numbers could be placed in the first 50 words of a listing, or on the sub-title of the property listing.

132 The Sustainable Economies Law Center recommends that, to assist enforcement, cities may want to require hosts to keep records of guest names, guest contact information, dates of stay, indication of the host's presence or absence during the stay, and revenue earned. This level of detail in recordkeeping is already required of STR operators in Madison, Wisconsin and Portland, Oregon. Portland also requires hosts to maintain guests' license plate numbers (if traveling by car) and a record of the room assigned to each guest.

133 These might include fines, revocation of permit, and publication of names of non-compliant hosts.

134 This would be analogous to the way regulators manage other activities that put common-pool resources at risk by over-use, like fishing, hunting, or and backcountry recreation in protected areas.

135 According to a draft report on short-term rentals by the Sustainable Economies Law Center, this is the case in Maui County, HI. See: http://www.theselc.org/draft_short_term_rental_recommendations

136 Such platforms are in the best position to know who is hosting and how much revenue was earned. Additionally, because these platforms transfer payments from guests to hosts, the platforms are in a good position to withhold and remit the tax. San Francisco's ordinance is the first to require STR platforms and services to collect the 14% TOT from guest fees and remit the tax to the city. The City of Portland and Multnomah County have also required STR intermediaries to collect the 11.5% TOT. As far as we are aware, STR companies have begun remitting taxes but have not agreed to conditions that would enable communities to effectively audit compliance.

137 Airbnb has agreed to collect and remit taxes in Amsterdam, Chicago, Malibu, San Jose, Washington D.C., the State of North Carolina. Los Angeles and France may be next. See http://publicpolicy.airbnb.com/working-together-north-carolina-make-tax-rules-simple/

138 According to this April 8, 2015 media report, a Burlington tax collector that used Airbnb's site to approach local hosts who appeared to be out of compliance was actually blocked by Airbnb from using the site: http://www.sevendaysvt.com/vermont/fair-share-officials-struggle-to-regulate-vermonts-sharing-economy/Content?oid=2550497

139 Scope for improvement on waste management is suggested by Airbnb's research, which indicates that "less than half" of Airbnb STR operators in North America and Europe provide single-use toiletry products for their guests. https://www.airbnb.ca/press/news/new-study-reveals-a-greener-way-to-travel-airbnb-community-shows-environmental-benefits-of-home-sharing

140 http://www.theguardian.com/australia-news/2014/oct/29/airbnb-agrees-to-help-find-shelter-for-displaced-disaster-victims-in-victoria

141 http://blogs.wsj.com/developments/2015/03/30/airbnb-pushes-up-apartment-rents-slightly-study-says/?mod=WSJBlog

142 This has been done in Austin Texas. See http://www.statesman.com/news/news/local-govt-politics/austin-broadens-short-term-rental-rules/nWdHG/

143 Again, this resembles the way access to other precious resources is allocated in a way that recognizes that over-use puts them at risk, like fishing, hunting, or backcountry recreation permits in protected areas.

144 This is required in Portland.

145 Sustainable Economies Law Center: http://www.theselc.org/draft_short_term_rental_recommendations

146 Ibid.

147 See VacationRentalCompliance.com and coverage of this here: http://www.techpresident.com/news/24059/how-cities-adapt-age-airbnb

148 Charles Gottlieb: *Residential Short-Term Rentals: Should Local Governments Regulate the 'Industry'?* in Planning & Environmental Law Vol. 65, Iss. 2, 2013 DOI: 10.1080/15480755.2013.766496

149 Experiences of New York and Portland show that complaint systems do little to stem growth of unpermitted STRs.

150 This is suggested by the Sustainable Economies Law Center (SELC) in a draft paper on policy recommendations for short-term rentals. SELC draws a parallel to the Alaska Permanent Fund, which pays all eligible Alaska residents annual dividends from mineral, gas, and oil revenues. More at http://www.theselc.org/draft_short_term_rental_recommendations

151 See: http://www.theselc.org/rethinking_home_policy_advocacy and the legislation itself: https://www.d3n8a8pro7vhmx.cloudfront.net/theselc/pages/108/attachments/original/1412098276/20130AB56993CHP.pdf?1412098276

152 http://www.daybreakcohousing.org/

153 http://www.milagrocohousing.org/

154 This and other ideas available at: http://communityenterpriselaw.org/zoning-and-housing/

155 Detailed report at: http://www.mayorofvancouver.ca/cohousing

156 http://communityenterpriselaw.org/zoning-and-housing/#fnref-8666-5

157 Read more at: http://www.affordablecohousing.org/existing-communities and http://www.jstor.org/stable/41429168

158 https://www.vancity.com/Mortgages/TypesOfMortgages/MixerMortgage/

159 San Francisco's Inclusionary Housing Program explained here: http://www.sf-moh.org/index.aspx?page=295

160 Article in *San Francisco Business Times* on coliving development and inclusionary zoning: http://www.bizjournals.com/sanfrancisco/blog/real-estate/2015/04/affordable-housing-sf-bay-area-communal-living.html?page=all

161 According to this 2010 survey of European cowork spaces (may not be representative as sample is self-selected), 25% of cowork spaces benefitted from some public funding, 13% are nonprofit, and 2% are operated by public agencies. None counted subsidies among their revenue streams: http://www.entrepriseglobale.biz/wp-content/uploads/2010/11/CoworkingEUropeSurveyFinal.pdf See also http://www.deskmag.com/en/public-sector-fund-coworking

162 http://www.ilgiorno.it/milano/cronaca/2013/08/18/936026-coworking-lavoro-condivisione-voucher-rete-progettazione.shtml

163 http://www.startups.be/content/3-month-coworking-scholarship-startup-teams

164 http://www.deskmag.com/en/public-support-of-coworking-spaces-the-example-of-france-la-cantine-mutinerie-676

165 Ibid.

166 http://njslom.org/grants/article/2015/coworking.html

167 https://prezi.com/8uepdp7bstfo/the-preliminary-results-of-the-4th-global-coworking-survey/

168 Ibid.

169 According to the 4th Global Coworking Survey of 2706 people Nov 6 and Dec 31, 2013 (http://www.deskmag.com/en/the-coworking-market-report-forecast-2014), "Nine out of ten coworking spaces are expected to increase their number of memberships this year, with one quarter forecasting a significant increase. The same applies to revenue – by comparison to last year, strong profit outlooks showed minimal fluctuation." This survey does not appear to be based on a representative sample of cowork space users.

170 See Deskmag's 2014 4th annual global survey results presentation, 1:47, at https://www.youtube.com/watch?v=hutCeXQ9Z6Y

171 http://www.deskmag.com/en/the-future-of-coworking-882/2

172 See http://librarylinknj.org/content/coworking-and-libraries-support-and-services-self-employed-and-new-entrepreneurs. Learnings from an experiment in combining coworking with an academic library here: http://www.tandfonline.com/doi/abs/10.1080/13614533.2013.850101

173 For example, see http://aztechbeat.com/2015/04/gangplank-coworking-expands-queen-creek/

174 http://www.eastvalleytribune.com/local/chandler/article_58f911d8-54d8-11e0-ac94-001cc4c002e0.html

175 Ibid.

176 Ibid.

177 http://www.azcentral.com/story/news/local/chandler/2014/11/19/gangplank-chandler-collaborative-working-space/19280949/

178 Ibid.

179 http://www.eastvalleytribune.com/mobile/article_651ade90-a1a2-11df-b7a2-001cc4c002e0.html

180 See http://gangplankhq.com/values/money/ and http://gangplankhq.com/vision/manifesto/

181 See note 179

182 http://cronkitenewsonline.com/2012/09/cities-align-with-gangplank-to-spur-small-business-growth/

183 http://www.tucsonsentinel.com/local/report/012114_co_lab/colab-relaunches-workspace-walks-from-gangplank/

184 "About the Centre for Social Innovation." http://socialinnovation.ca/about.

185 "TechSoup Canada – Technology for Nonprofits and Charities." http://techsoupcanada.ca/.

186 "Agents of Change: City Builders." http://socialinnovation.ca/agents-of-change.

187 "CSI's Desk Exchange Community Animator Program." http://socialinnovation.ca/timeforspace.

188 A study billed as the "first global coworking survey, which involved 661 participants from 24 countries" (http://www.deskmag.com/en/the-coworkers-global-coworking-survey-168) from 2010 suggests coworkers are mostly in their mid-twenties to late thirties; two-thirds are men; 54% are freelancers; almost 20% are entrepreneurs who employ others; one in five works as a permanent employee; most are in very small companies with less than five workers; and 80% are university-educated. The "overwhelming majority" work in the field of creative industries and new media; most are web developers or programmers (one in nine is a graphic designer or web designer; a similar proportion are consultants to the creative industries; PR, journalism, architects, and writers are also well represented). Many specialize in more than one field. The study also reports (here: http://www.deskmag.com/en/the-strength-of-small-and-big-coworking-spaces-205) that different sizes of cowork spaces are correlated with different qualities of social contact. However, this (somewhat dated) evidence is hard to evaluate because sampling methodology has not been published. It appears to be based on a self-selected sample of respondents who read an online publication about coworking rather than a representative sample of people with experience of coworking.

# 3c.

# SHARED GOODS

Shared goods refers to the exchange, sale or loaning of new or used items among different actors. Equipment, toys, tools, clothing, furniture, appliances, books and electronics are examples of items shared. Goods sharing can take the form of peer-to-peer or business-to-peer transactions - often mediated by online platforms such as eBay – or sharing among businesses or among municipalities through platforms like Munirent.

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## Summary

Local governments can advance sustainability through supporting shared goods in the following key ways:

- **Shifting to materials management, upstream solutions and life cycle approaches –** Municipalities are faced with ever increasing levels of solid waste and finding that traditional approaches to waste management and recycling are not sufficient to achieve diversion rates. As a result, local governments are focusing more (on their own and in partnership with external stakeholders) on upstream solutions, including waste prevention and, through partnerships, redesigning products for easier reuse and recycling. A powerful aspect of the Sharing Economy is the way in which it encourages households, businesses and institutions to shift their focus from the ownership of goods and materials to accessing them when needed. The sharing of goods such as toys, equipment, and electronics among many users lessens the need to produce new goods, thus reducing resource use and waste. Cities can advance sustainability by reframing waste management as materials management and adopting an integrated, life cycle approach.
- **Encouraging goods sharing among households, businesses and institutions –** Goods sharing can take place among individuals within households as well as among businesses and institutions such as universities and hospitals. Cities can play an enabling role in both types of exchanges. At the neighbourhood scale, local governments can advance goods sharing among individuals through actions such as promoting or organizing Fix-it Clinics as outlined in Chapter 4. In doing so, city governments should consider prioritizing sharing activities that consider the end-user's preferences and practices and that advance equity. To support materials and goods exchange among business and/or insitutiions, local governments can host online exchange platforms or support the development of resource byproducts exchanges in industrial clusters by serving as an anchor partner.
- **Leading by example –** Local governments can engage in sharing goods themselves (including equipment) and can incorporate sharing criteria into public procurement strategies. They can also inventory their civic assets such as civic spaces, materials and staff expertise in order to support local sustainability and related city priorities. Finally, local governments can incorporate ecological footprint metrics and consumption-based accounting of greenhouse gas emissions into their climate change and sustainability plans.

## 3c.1 WHAT ARE SHARED GOODS?

Shared goods encapsulates a wide range of collaboratively owned or used goods, where goods refers to material consumer products and assets, as well as productive capital including machinery and specialized tools. What distinguishes 'shared' goods is the increased intensity of use and recirculation of durable goods, as well as the sharing of productive assets, by users, producers as well as producer-consumers. Assets in this case refer to tangible materials, such as equipment, that have value. Shared goods transactions can range from gifting and lending to bartering and renting,[1] and are increasingly taking place via online platforms that connect individuals and businesses.

Typically the sharing of goods is categorized in three ways; we add a fourth because of its particular relevance to local government.

1. **Peer-to-peer sharing** refers to a range of sharing transactions between individuals, which may be mediated by a platform such as eBay or Etsy.
2. **Business-to-business sharing** occurs between businesses and includes materials and by-product exchanges such as those through the National Industrial Symbiosis Program (NISP) or within the Partnership in Project Green Materials Exchange Network in Toronto (see city case study in this Chapter).
3. **Business-to-peer sharing** is mediated by money rather than exchange and is typified by platforms such as Amazon, which connects sellers with users while at the same time taking on the role of vendor.
4. **Institution-to-insitution sharing** occurs between government entities, universities or hospitals who share goods such as equipment, through online platforms like Munirent – a for-profit for sharing among municipal governments.

This Chapter emphasizes sharing at the institutional level including among businesses and municipalities, as well as peer-to-peer exchanges. Chapter 4 focuses specifically on sharing at the community and neighbourhood level, including goods sharing at that scale.

The types of goods being shared span a wide range of products including:

- Books
- Media – DVDs, music
- Clothing, shoes, accessories
- Sports equipment
- Recreational goods
- Outdoor and adventure gear
- Pet related goods
- Electronics and technology
- Office supplies and equipment
- Health care supplies
- Manufacturing equipment
- Tools
- Kitchen equipment, seeds, food (see Chapter 3d on Shared Food)
- Furniture
- Building materials
- Appliances
- Event supplies – tents, stages, fences
- Toys
- Crafts and artisanal goods

There are many ways to categorize and define the shared goods sector. For our roadmap, we analyze the common threads across these different approaches as outlined in Box 3c.1 to craft the LGSE project definition:

> *"Shared goods refers to items exchanged, sold, and loaned among different actors including new and used goods such as equipment, toys, tools, clothing, furniture, appliances, books and electronics. Goods sharing can take the form of peer-to-peer, business-to-business, and business-to-individual markets, often mediated by online platforms such as eBay or sharing goods among businesses or municipalities through platforms like Munirent."*

In defining the shared goods economy as encompassing both consumers and producers, this Chapter enables a deeper understanding of the range of effective actions that can be taken by local government actors. Likewise, recognizing that municipalities can act as institutional sharers, participating in the shared goods economy themselves, is a key lesson drawn from literature and practice. While there are certainly arguments to be made for framing shared goods more narrowly or broadly, the definition presented here allows for a richer exploration of goods sharing across a diversity of players and illuminates the roles local governments can play in these exchanges.

### BOX 3C.1
### DEFINING SHARED GOODS

Velocity of sharing - Shared goods can be categorized according to whether the sharing takes place at a high or low velocity – in other words, according to how quickly the goods transfer to a new user. Toys and clothing have a relatively high velocity or "quickly become obsolete,"[2] whereas larger items such as furniture and appliances take longer to change hands. This difference in velocity

reflects a variety of factors, including the relative levels of demand, or the ease or convenience of sharing (moving a couch takes much more effort than exchanging a dress).

Juliet Schor, Professor of Sociology at Boston College, and author of Plenitude discusses the shared goods economy in terms of:

- recirculation of goods;
- the shift to using more durable goods; and
- increasing the use-intensity of assets.

Schor emphasizes the importance of platforms that connect sharers, whom she categorizes as "providers, consumers, participants, and users."[3] She notes that the sharing of goods happens within and across non- and for-profit organizations, between individuals (peer-to-peer), between businesses (business-to-peer) and between businesses and individuals.[4]

The Center for a New American Dream has also focused on shared goods and, in doing so, highlights new notions of ownership: "through sharing systems, we can get the utility of goods and services without the burden of ownership – and in ways that help build community, clear clutter, and allow for more equitable access to resources. The "access-over-ownership" model frees us from having to make, buy, and consume ever more stuff, saving our pocketbooks and reducing our environmental impact."[5]

Jeremiah Owyang of Crowd Companies in his Collaborative Economy Honeycomb model defines shared goods as belonging to one of three categories:

- pre-owned goods, such as games, clothing, furniture, and appliances;
- loaned products, such as couture clothing, toys, tools, and jewellery; and
- bespoke goods, such as custom or handmade clothing and accessories, software, 3D printing, and electronics.

The Honeycomb model includes a Municipal section, which highlights the sharing of heavy equipment by municipalities.[6] Julian Agyeman, Duncan McLaren, and Adrianne Schaefer-Borrego, in their briefing for Friends of the Earth on "Sharing Cities," discuss shared goods in terms of redistribution markets, which "direct pre-owned and unused goods to places where they are needed."[7]

Both of these discussions of shared goods offer a largely consumer-based model, and do not include, for example, shared productive capital.

A Urban Sustainability Directors Network commissioned report on "Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities" distinguishes sharing from repair, reuse, and resale activities. The authors define 'shared' goods as those with "multiple users... without transfer of ownership, [including] short-term rentals or exchanges."[8] Sharing is framed as a key component to a broader category of 'sustainable consumption' that takes three forms: person-to-person; 'centralized' peer-to-peer mostly mediated by online platforms or systems; and sharing between businesses and individuals.

## BOX 3C.2
## ONLINE GOODS MARKETPLACES

Online goods marketplaces, also known as distribution markets, have flourished since 1999 with the emergence of platforms like eBay and Craigslist, and are often characterized by peer-to-peer exchanges.[9] Since then, online marketplaces have emerged for an incredibly diverse range of goods and services and include start-ups,[10] co-operatives,[11] and neighbourhood-level exchanges, including those for durable goods.[12] Online marketplaces connect producers directly to their customers, as is the case with Etsy[13] the massive online craft marketplace. They also connect owners with individuals interested in purchasing used goods, such as GeekMarket and Kijiji.[14] Large companies are also active, with Amazon now offering textbook rentals and Walmart unveiling a peer-to-peer money sending service.[15]

Markets have been created to facilitate the exchange of services and goods through purchase, rental, and barter as well as non-monetized exchanges such as the clothing swaps detailed in Chapter 1.[16] These marketplaces often blur the lines between personal and professional, particularly with the emergence of those for human-intensive services such as high-quality, bespoke goods. The intended purposes of these marketplaces are varied, ranging from standard business models to more sustainable goals such as diverting waste from

landfills, knitting communities together, and supporting marginalized populations.

Some local governments, such as the City of Portland, have recognized the potential for online marketplaces to further municipal objectives, particularly those related to waste prevention and climate change action. The City of Portland developed the Resourceful PDX program to "give Portland's residents tools and ideas for reducing waste, and specifically, how to take action and where to find resources."[17] This program encourages citizens to engage in sharing activities, but falls short of taking regulatory action. Indeed, it may be very difficult for governments, local or otherwise, to adequately regulate online marketplaces. Likewise, there are concerns that ill-considered attempts at regulation may disrupt systems of innovation at the grassroots level, stifling further developments in the sector.[18]

This suggests that while local governments may have a role to play in regulating online markets, they should consider moving forward with public-private partnerships and/or self-regulation. Such partnerships would see local governments working closely with a third-party platform which regulates and monitors the business of the marketplace. Local government would help to set the boundaries to the market by defining the scope of acceptable exchanges and accompanying regulation. Local government would also build in social and environmental considerations, and maintain oversight, while the third-party platform would oversee the day-to-day running of the market.[19]

As noted in Box 3C.1, another approach to defining the shared goods sector is by Juliet Schor, Professor of Sociology at Boston College, and author of Plenitude. She discusses the shared goods economy in terms of:

- recirculation of goods;
- the shift to using more durable goods; and
- increasing the use-intensity of assets.

## 3c.2 DO SHARED GOODS ADVANCE SUSTAINABILITY?

### 3c.2.1 LIVING WITHIN ECOLOGICAL MEANS

Sharing goods can contribute to reductions in material and energy throughput by reducing the quantity of goods being produced and by keeping products in circulation longer before disposal. It can reduce our demand for new goods and therefore lessen our need for resources and energy for many areas of the lifecycle including production and transportation to market.

Decades of emphasis on continuous economic growth and the development of a consumer culture has led to a historical moment in which a huge surplus of goods supports the possibility of sharing... Most households, businesses and institutions own products and materials, which are not being used often or even at all. Chapter 3b provides an overview of the amount of goods being placed in storage due to an overflow from our houses and businesses. There are estimates that a typical household has $3,000 to $4,000 worth of goods that could be borrowed, loaned, rented or donated in their attics, garages and other storage spaces. Of course, there are a growing number of people who don't have enough resources to meet their basic needs (see equity section below) that could benefit from greater access to more affordable shared goods and services. Yet we know that the majority of households in North America have too many products. As Andy Ruben, co-founder of Yerdle, an online goods exchange platform notes "the distribution centers of the future are our closets and garages"[20] – which supports a company mission explicitly focused on reducing the consumption of new goods:

> *"At Yerdle, we want to redefine the word 'mine.' We want to let go of our attachment to things we almost never use. We want to change the way we think about our belongings in the context of a finite planet, busy lives, and better uses for our hard-earned dollars. Yerdle's mission is to reduce the number of new things we all need to buy by 25%."*

200,000 items have been exchanged on Yerdle so far and in November 2014, Yerdle partnered with outdoor clothing and gear company Patagonia to promote buying used goods and repairing products.[21] In a similar vein, online marketplace Listia has circulated 100 million items among its 8 million members in Canada and the US and claims it has kept 43,000+ cell phones, 12,000+ women's jeans and 50,000+ books out of the landfill.[22]

Redistribution of goods connects the Sharing Economy with the concept of the 'circular economy' - which the Ellen MacArthur Foundation defines as "one that is restorative by design, and which aims to keep products, components and materials at their highest utility and value, at all times."[23] As noted in the World Economic Forum Young Global Leaders position paper on the Sharing Economy, "the Sharing Economy is complementary to the Circular Economy...both the sharing economy and the circular economy focus on efficient and sustainable resource use by individuals, companies, and governments."[24]

Does redistribution always lead to absolute reductions in materials? Is sharing leading to a 'dematerialization' of our economy? The answer: it depends. As noted by co-authors Damien Demailly and Anne-Sophie Novel in their 2014 report "The Sharing Economy: Make it Sustainable":

> *"People who benefit from a gift of clothing from relatives do not necessarily consider these goods as replacements for new purchases, but will use them as additional items.... Furthermore, people that get rid of certain products often still need to use these items, but simply want to replace them with newer versions (this is often the case for cars, sofas and mobile phones). However, this does not imply that the environmental balance of the operation is negative: the ability to give or sell used products has not necessarily played an instrumental role in the decision to replace it. Also, replacement allows more recent and therefore potentially more resource-efficient products to be brought to market."*[25]

One of the conclusions by Demailly and Novel is that we need to analyze the behavior of consumers in assessing the environmental impacts of products and how "sharing models transforms goods and their uses." There is potential for a cultural shift as people move from wanting to own products to people seeking access to goods and services instead, such as borrowing tools through a tool library.

> *The question remains – do individuals and institutions decide to purchase additional, different and potentially more environmentally harmful goods from the income gained or costs saved by sharing goods?*

Here is the rebound effect again with initial reductions in negative impact leading to a new behavior that creates a new negative impact.

The rebound effect can also emerge in less direct ways. For example, what are people making with the tools and equipment from tool libraries and Maker Spaces? Some use it for repair and craft manufacturing[26] but there are also those who undertake home renovations which leads to questions about potential higher impact from an expanding housing size and the corresponding heating costs (if energy efficiency is not considered) or additional space to fill with more goods.[27] Living within ecological means requires a level of analysis that explores life cycle assessments of products, their uses and consumer behaviors.

> *Some new start-ups like Stuffstr[28] aim to help people, through an online platform, track the full life cycle of their products and their use and behavior in interacting with those products, while providing options for end-of-life of the products. Their goal is also to extend the useful life of products.*

*Sharing economy activities can impact product-life extension in addition to reducing the amount of materials in circulation; however, this requires that goods are designed with more intensive use, long-lasting value and durability in mind.*

The past decades of product design has instead been predominately focused on products that are 'designed for the dump' with disposability and planned obsolescence (designing a product with an artificially limited life span) as the standard practice.[29] How long do tools being shared in tool libraries last if they are designed for individual households and are now being borrowed by multiple users? What is the impact on the life-cycle of shared goods if they now reach the end of their useful life at an accelerated pace? The importance of ensuring that shared goods do not wear out faster is a central point in Demailly and Novel's 2014 report "The Sharing Economy: Make it Sustainable":

*"If sharing primarily seems to be an issue of the quantity of goods, the quality of shared goods appears to be a key requirement for the environmental sustainability of sharing models, whether for redistribution, mutualization or even shared mobility. Sharing models must prioritize the most durable goods on the market, with durability understood here in the sense of an increase in lifespan but also of their recyclability and the actual recycling carried out. B2C [Business to Consumer] models where companies can influence or control production at a very upstream stage – by bringing new goods to market that are eco-designed to be shared – or recycling at a downstream point, have a strong advantage from an environmental perspective."*[30]

Demailly and Novel also emphasize the importance of full life cycle accounting when exploring the environmental benefits of shared goods. Frequently, the impact of producing and transporting goods is not taken into account. Online marketplaces, for example, lead people to circulate unwanted goods and send them to new owners rather than to the landfill; however, goods are predominantly shipped in individual or small packages and the cumulative impact of transporting millions of goods needs to be considered. Demailly and Novel note that the transport of large quantities of goods over long distances is reduced by shared goods activities; however, it is often replaced by many more short-range transits for single or small quantities of goods[31] Advancing absolute reductions requires life cycle assessments that include the impacts described above that can undermine ecological gains achieved.

*It is also important to prioritize those Sharing Economy activities that reduce the highest quantity of material being exchanged. Consumable goods in households represent a small portion of our ecological footprint in comparison with the materials embedded in buildings and construction, infrastructure or transportation networks.*[32]

Prioritizing the sharing of goods among businesses, industry and institutions, as a result, should lead to greater reductions in materials in the economy than simply focusing on households. Activities focused on the household level still have a cumulative impact and are also important from a cultural perspective as they encourage dialogue about our consumer society; however, this chapter explores business to business sharing and opportunities for municipal sharing in the most depth due to their greater potential to advance absolute footprint reductions at a larger scale.

## BOX 3C.3
## BUSINESS TO BUSINESS / INDUSTRY TO INDUSTRY SHARING

A growing number of businesses are recognizing the advantages of sharing resources with their peers, which is happening at a variety of scales including:

1. within shared workplaces;
2. among commercial businesses;
3. within an industrial park (i.e. Industrial Symbiosis); and
4. among large multi-national corporations (e.g. Collaborative Supply Chains and Open Innovation).

### 1. GOODS AND SERVICE SHARING IN SHARED WORKPLACES

The growth in Shared Workplaces opens up opportunities to easily share a range of goods and services, including office equipment, tools and equipment, storage space, subscriptions and a variety of services (e.g., food and janitorial services). Chapter 3b on Shared Spaces explores co-working spaces in more detail.[33]

### 2. COMMERCIAL BUSINESS SHARING

**An innovative example of sharing in the commercial sector is the Strathcona Resource Park and Resource Exchange,** launched by the Strathcona Business Improvement Agency in Vancouver, BC. This project facilitates sharing between local businesses and local residents while also providing community amenities. The Resource Park and Exchange converted an underutilized parking lot into a hub that includes a materials exchange, recycling collection, micro-industrial composting facility, urban garden plots and a public sitting area. The Park was built in large part by volunteers with some support from local government.[34]

Online tools are also launching to help facilitate the sharing of equipment, services, and even personnel between businesses. Examples include:

- FLOOW2 (www.floow2.com), which provides a Business-to-Business (B2B) Sharing Marketplace for equipment, services and staff. One member of FLOOW2 stated that "the sharing platform increases the social cohesion at our business park. It is no longer everyone for themselves, instead people are helping each other and thereby strengthen each other.[35]
- Yard Club (http://www.yardclub.com/), which acts as a peer-to-peer web-based platform to facilitate equipment sharing between contractors, and also includes scheduling and payment capabilities. Yard Club currently operates in San Francisco and plans to expand through California. Caterpillar recently became a funding partner to help grow the tool.[36]

### 3. INDUSTRIAL SYMBIOSIS

Industrial symbiosis may be considered the most advanced type of business sharing because it encompasses every stage of business activity, both up and downstream, and includes materials, services, energy, and human resources into a systemic approach to sustainable business. This form of collaboration involves "the establishment of relationships between organizations to more effectively and efficiently manage resources.[37] These exchanges typically involve waste-to-input linkages, and collaboration around energy, water, and services.[38] Essentially, through industrial symbiosis, public and private entities buy, sell or share their residual products and/or resources in a way that creates mutual economic and environmental benefits.

A leading example of an Industrial Symbiosis project, and one of the first, is in Kalundborg, Denmark. The Kalundborg Industrial Symbiosis project is located around a power plant with a variety of neighbouring partners, including a Statoil refinery, pharmaceutical company, plasterboard manufacturer, fish farm, and the local municipality (through neighbouring houses). The power plant's waste energy is used to heat homes and a fish farm; and the Statoil refinery receives the plant's waste steam. Gypsum is also collected from the plant's scrubbers and used by a wallboard manufacturer; and flyash and clinker from the plant is used for cement production.[39]

**The National Industrial Symbiosis Programme** (NISP) was established in the UK to help facilitate the growth of these kinds of Industrial Symbiosis initiatives. It has since expanded to more than 20 countries with recognition from the G7. It is a proven model for establishing and building relationships among businesses, particularly small and medium-sized enterprises, to optimize resource use and move toward a circular economy. Because of the facilitation approach developed by NISP,

these exchanges are also resulting in new collaborations and social connections among businesses. In an eight year period, NISP in Europe and around the world has helped businesses:

- Save £1 billion in costs
- Generate £993 million in additional sales
- Create or safeguard over 10,000 jobs
- Recover and reuse 38 million tonnes of materials
- Reduce 39 million tonnes of industrial carbon emissions
- Save 71 million tonnes industrial of water[40]

The NISP recently launched in Canada and is exploring pilots in regions across the country, with the goal of replicating this success. There are a number of promising areas of industrial symbiosis activity including the Toronto Project Green profiled in this chapter and the industrial collaborations in the Alberta Industrial Heartland near Edmonton Capital Region.[41]

## 4. MULTINATIONAL CORPORATION SHARING: COLLABORATIVE SUPPLY CHAINS AND OPEN INNOVATION

### Collaborative Supply Chains

Business-to-Business (B2B) sharing is also occurring in the realm of supply chain management with the rise of a new approach pioneered by Kimberly-Clark called Collaborative Supply Chains. In a Collaborative Supply Chain, "two or more companies use the same distribution facility and transportation services to serve mutual customers. This practice reduces costs for manufacturers and provides more frequent replenishment for retailers."[42] After Kimberly-Clark's pioneering efforts to form supply chain partnerships,[43] similar initiatives have sprouted up across Europe, and a non-profit organization (the European Logistics Users, Providers and Enablers Group (ELU- PEG)[44] was created to promote and foster this form of sharing.

### Pre-Competitive Collaboration and Open Innovation

Sharing is also taking place across the globe in earlier stages of business innovation, often referred to as pre-competitive collaboration or open innovation. One of the leading examples of pre-competitive collaboration is The Sustainability Consortium which represents more than 100 of the world's largest organizations who are working together to create sustainability-related knowledge about products.[45]

Open innovation, also called co-creation, includes projects in which a company or organization facilitates the input of a range of contributors to solve design challenges, often focused on enhancing the sustainability performance of a product. The European Network of Living Labs[46] is one such example, as is GE's Ecoimagination program.[47] The Ecoimagination program was initiated with a challenge - an open call for ideas on how to better power the grid and homes, resulting in the submission of thousands of innovative ideas and the eventual funding of start-ups.[48]

### How Can Business Sharing Advance Urban Sustainability?

The B2B sharing initiatives profiled in this section have the potential to advance a range of sustainability objectives. For example, they can contribute to:

- **Living within (ecological) means:** by reducing the resource intensity of business activity.
- **Enhancing resilience:** by reducing demand for inputs sourced from outside of the local community or region (which can also reduce ecologically intense transportation distances).
- **Protecting and restoring natural systems:** by reducing waste streams and toxins produced through business activity and enabling efficient use of resources reducing ecological impact.
- **Advancing a prosperous local economy:** by facilitating economic savings for local business and by redirecting expenditures of resources back into the local community.
- **Ensuring quality of life and wellbeing for all:** by creating a greater sense of community and new opportunities for social connections within and among businesses.

### How Can Local Governments Advance Business-to-Business Sharing?

- Promote and support Shared Workplaces, for example through seed funding - see Shared Spaces chapter for further details.
- Fund Commercial Sharing projects similar to the Strathcona Resource Park model and make property available in support of these initiatives.[49]
- Fund Industrial Symbiosis pilot projects, including those in which a government owned facility acts as an anchor partner (e.g., a government facility that produces excess waste heat which can be used by a neighbouring business).

- Provide, promote or fund online business-to-business sharing marketplaces.
- Promote innovative business collaboration initiatives that are focussed on advancing sustainability objectives.
- Initiate an Open Innovation challenge to address a local sustainability need.

BOX 3C.4
**POP-UP RETAIL**

*"Storefront helped us realize our vision of becoming a retail destination all its own. With their help and support, it may have always stayed another opportunity left on the cutting room floor. In a few years, we hope the MTA will be completely transformed, and Storefront will be partly responsible for that."*[50]

Pop-up retail, more broadly defined as the short-term rental of retail space,[51] is becoming an increasingly popular option for small business entrepreneurs and artisans selling high-end boutique goods, arts and crafts, and services.[52] Pop-up retail models vary and include: short-term rental of a standalone shop; renting footage within an existing store creating a 'store-within-a-store'; and rental of a marketplace stall such as those found at traditional farmers markets. The Sharing Economy is expressed in pop-up retail through a variety of means such as: the promotion and sale of locally produced goods,[53] second-hand and repurposed goods;[54] and the sharing of retail spaces and restaurants during idle hours.[55]

While pop-up retail is emerging as an important component of urban revitalisation efforts, it is an organic response by merchants to economic pressures in the wake of the post-2007 economic downturn. With the price of retail space rising in many urban areas, pop-up retail offers a more affordable, less risky option for many merchants.[56]

Local governments have a critical role to play in aligning pop-up retail with municipal goals such as Main Street and urban revitalization, small business promotion, and sustainability. Since the nature of the goods sold can largely determine sustainability outcomes, local government can step in to influence or regulate: the materials used, local content requirements in order to minimize long-distance transport and foster local economic diversity; disposal; and health and safety.[57]

Governments can also promote the development of thriving pop-up retail spaces, as in New York City, where the Metropolitan Transportation Authority partnered with Storefront, an online marketplace used by thousands of businesses to access short-term retail spaces. MTA is helping to promote pop-up retail spaces within the city's subway stations[58] through the Storefront app,[59] which provides the ability to book and pay online. This partnership provides mutual benefits to both parties: it helps the MTA subway become a much more vibrant place while providing a unique foot traffic advantage for the Storefront platform.

## 3c.2.2 RESILIENCE

There is some evidence that online shared goods platforms contribute to the personal resilience of their participants. For example, Tracey, reports on the generosity of other users of Listia, a free online marketplace, after her house burned down:

*"I can not even begin to tell you how much Listia has changed my life. I joined on August 2013, and have been hooked ever since. On April 1st of this year (April Fools Day – and not a very funny one I might add), our house caught fire and we almost lost everything we owned. The outpour of love that I got from my Listia family was tear jerking. We now have a new home (and I even have my own "Listia office") and my friends and family who were skeptical of Listia, are now believers! Thanks so much!"*[60]

Some Shared Goods are also useful in enhancing the resilience of entire communities and cities in emergency situations, such as sharing equipment and health supplies. There is also a level of resilience that emerges from the social connectivity and trust created in Shared Good

exchanges between communities and businesses. Chapter 4 on Community Sharing explores the social connection that emerges from Sharing Economy activities in more detail, for example, at Fix-it clinics and repair cafes. Cities can draw on this enhanced social infrastructure in times of need. At the city level, municipalities are entering into formal agreements with Sharing Economy platforms including neighbourhood sharing marketplaces such as Nextdoor to serve as alert systems for emergencies and safety warnings.[61] As mentioned in Chapter 3a on Shared Mobility, the San Francisco Department of Emergency Management has taken a number of steps toward engaging Sharing Economy actors and activities into emergency response, with other cities connecting to learn from their approach.

## 3c.2.3 NATURAL SYSTEMS

There are a number of ways in which Shared Goods can advance the protection and restoration of natural systems. If sharing goods reduces the absolute number of goods in circulation and delays their disposal, this activity can lower the pressure on the natural ecosystems that provide resources for new goods (See Living within Ecological Means section above). Sharing Economy actors can also prioritize the circulation of shared goods that have reduced toxicity levels and are biodegradeable... Some online goods marketplaces specialize in these green products, such as Eartheasy,[62] and even eBay is promoting green products by, for example, highlighting non-toxic products for babies.[63] The sharing of outdoor and adventure gear can also increase access and enjoyment of ecosystems within and outside of cities.

Protecting and restoring natural systems requires a level of intentionality in terms of the types of Shared Goods being circulated. For example, 3D printers are becoming rapidly accessible for shared use, including in libraries in places like Denver and Cleveland and in universities such as Dalhousie and the University of Calgary.[64] The Imagine Space in Ottawa Public Library allows users access to 3D modeling, printing and scanning.[65] Biologist and Biomimicry founder, Janine Benyus, is exploring how to ensure that the materials being used in 3D printers are safe for people and ecosystems, and designed for reuse.[66]

> *"We shouldn't have to wash our clothes after we use a 3-D printer, or ask our sons or daughters to take out the hazardous waste trash."*[67]

There is an opportunity to not only reduce the number of 3D printers in production by enabling shared access but also to encourage 3D printing that is ecologically benign – and even beneficial – through a focus on the materials being used and the feedstock or raw materials being used in printing the products.

## 3c.2.4 EQUITY

Providing access to goods through sharing rather than ownership can be an advantageous to low-income communities. For example, there are a number of programs to supply immigrant families with shared furniture when they first arrive in a city before they can purchase their own.[68] A study in the UK also focused on the role of government in catalyzing and providing a supportive regulatory environment for online marketplaces in order to address poverty.[69] But the story of equity and shared goods is more complex than these examples suggest.

Although manufactured commodities have dropped in price overall, income inequality in the US and Canada has also risen substantially with many households spending more of their income on essentials.[70] The US in particular exhibits the highest level of social inequality of any OECD country with the "highest earners pulling away from the rest of the nation."[71] While the sharing of goods and the income gained from doing so can provide benefits for lower-income persons, it may deter people from advocating for a more fundamental shift away from an economic system that creates social inequality in the first place.

In some cases, Sharing Economy actors are making an explicit link between their activities and the need to shift power, build the capacity of vulnerable populations and increase access to resources. In 2010 South Los Angeles, URBAN TxT is a "hacker space" - a space with technology equipment and opportunities to learn computer programming for at-risk teens which "encourages inner city teenage Black and Latino males to become catalysts of change in urban communities."[72] Clothing swaps are also organized with the intention of supporting low income

families and individuals.[73] The next section details some efforts to support vulnerable populations in entrepreneurial endeavours such as developing resource exchanges and shared goods enterprises.

## 3c.2.5 PROSPEROUS LOCAL ECONOMIES

The Sharing Economy is an active space for entrepreneurs, some of whom are focusing their efforts on building local economies. The tool libraries highlighted in Chapter 4 are one example as are Maker Labs that enable small-scale enterprises to emerge by lowering start-up costs such as those for manufacturing equipment. Crashbang Labs, for example – a maker space in Regina Saskatchewan - hosts open houses and workshops to support local tech entrepreneurs.[74] There are several maker spaces in Kansas City including "Home for Hackers" that provides free lodging for start-ups for several months and connects them to other initiatives such as Hammerspace Community workshops for "makers, crafters and inventors".[75] Similarly, the sharing of goods among businesses can reduce the costs of disposing materials in the landfill and lead to the emergence of new enterprises to fill identified resource exchange gaps, as outlined in section 3c.3.2 on Business to Business sharing in this Chapter.

Unfortunately, there are also some negative impacts of shared goods on prosperous, local economies. The rise of convenient purchases in online marketplaces is shifting some consumer purchases away from local economies. Ironically, one online marketplace even celebrates the fact that the user can 'buy local' from local enterprises 'all over the world' and ship it to their home which does not support a local economy.[76] There are also growing concerns about the nature of the jobs employed by online marketplaces – Are worker conditions remaining decent, including for those 'behind the scenes'? Workers packing goods in distribution warehouses for diverse retailers report experiencing long working hours, an intense pace of work, being treated 'like a robot' and the threat of being fired.[77] In contrast, some Sharing Economy enterprises are placing decent employment at the core of their approach, such as Rent the Runway that places an emphasis on hiring women leaders, which comprise most of their Executive team and tech positions, hiring for racial diversity, and experimenting with unlimited vacation, paid leave and other employee benefits.[78]

In summary, sharing goods is not inherently supportive of local, prosperous economies and decent jobs; however, Sharing Economy actors can direct their efforts to advance these goals. Local governments can also influence these goals if they choose to play a role in enabling Shared Goods in support of local priorities including economic development, equity, waste reduction or sustainability more broadly.

## 3c.2.6 QUALITY OF LIFE AND SOCIAL CONNECTIVITY

Sharing goods can have a positive effect on both increasing quality of life and on enabling social connectivity. Chapter 4 highlights the social connectivity that emerges through goods swapping and repair events and through sharing among neighbours. A heightened level of social connectivity among businesses is also being reported by the National Industrial Symbiosis Program because of the methods they employ to connect businesses through interactive workshops. There can also be some indirect sense of connectivity even when exchanges are happening at great distances as strangers can feel greater affinity with others who share their interest in particular goods, such as collectables.

Is sharing of goods leading to a shift in lifestyles and perspectives on 'the good life'? Some say that there is evidence of a change in how people are living, particularly young people. Consider this quote from the World Economic Forum Young Global Leaders report on the Sharing Economy:

> *"The Millennial generation is making it clear that they do not wish to inhabit a world which is depleted of value – and that, by and large, they want to own less, be more connected with others and part of something bigger than their individual selves. We are moving from an asset- heavy generation to an 'asset light' lifestyle."*[79]

It is not only Millennials but also seniors who are experiencing new possibilities to achieve wellbeing through sharing, rather than owning, goods.[80] In an analysis of sustainable lifestyles archetypes, Dr. Jennie Moore notes that achieving

lifestyles with 'One Planet' ecological footprints" requires that "most consumable items are shared both within and among households... [and that] many items are re-purposed and reused."[81]

This is not the full story. Sharing goods is not an inevitable route to more sustainable lifestyles. It can also lead people to pursue luxury goods that were previously out of reach because of cost. Luxury items already lead in terms of consumer product spending.[82] There are a number of platforms and Sharing Economy activities that specialize in providing access to luxury goods such as Rent the Runway (clothing), Bag, Borrow or Steal (handbags), and Adorn (jewelry)[83] "The luxury good is not the goal but the experience of gaining the approval of those who seek 'covetous stares from my peers' – the feeling of one-upmanship that comes with flaunting the season's most sought-after items."[84] Luxury online marketplaces report a shift in membership with economic downturns; they lose those who could barely afford to rent their goods and add those who shift from buying to renting.[85] Millennials are the target group for these online marketplaces because they are "'aspirational shoppers' who haven't reached affluence yet".[86] When we consider this aspect of the Sharing Economy, these activities are not about seeking an 'asset light lifestyle' but about maintaining conspicuous consumption.

On the other hand, businesses are recognizing the value in accessing goods rather then owning them, including with product-service systems. For example, Interface lease their carpets rather than selling them, which provides both economic and environmental benefits: it fosters customer loyalty because of the service agreement; reduces waste as only worn or damaged carpet tiles are replaced; and recycles carpet back to the company to be remade as carpet tiles. Goods sharing is happening for other products too such as for Lego through start-up Pley. Pley is, an online platform that gives a growing number of member-families access to lego sets based on a monthly fee.[87] By explicitly prioritizing asset light lifestyles and social connectivity, Sharing Economy actors can advance these objectives.

# Shared Goods: A Strategic Opportunity to Advance Sustainability

## 3c.3 WHAT CAN LOCAL GOVERNMENTS DO TO ENABLE THE SUSTAINABILITY BENEFITS OF SHARED GOODS AND GET AHEAD OF THE CURVE?

The following are promising areas for local government engagement in advancing sustainability through sharing goods.

### 3c.3.1 FOCUS ON UPSTREAM SOLUTIONS

**RECOMMENDATION:**

Focus on upstream solutions to managing shared goods rather than focusing on downstream waste.

Advancing sustainability is less about solid waste management and more about reducing the amount of goods in circulation, ensuring equitable access to goods, and keeping those materials in circulation for as long as possible. Instead of focusing downstream at the end of the supply chain or life cycle of a product, the opportunity for local government is to focus upstream on the design and production of goods. The following are a number of recommendations for local governments to advance sustainability by not just managing the disposal of goods but by influencing what kinds of goods are being shared in the first place. A key part of a shift upstream is not just about design but also about transforming the economic growth and consumer model that is driving the mass production of cheap goods and supporting the shift to a steady state economy that delivers quality of life equitably within the means of living systems. Peter Victor and Tim Jackson provide guidelines for this transformation in their report on "Green Economy at Community Scale" (2013) encouraging cities and communities to redefine prosperity, investments, enterprise and jobs in order to advance sustainability.[88] This fundamental shift in economic approach is already being explored in the Sustainable Economic Development reports commissioned by the Urban Sustainability Directors Network.[89]

## RECOMMENDATION:

Link support for Sharing Economy activities to campaigns to reduce overall consumption.

There is an opportunity to not only encourage sharing of goods but also for local governments to link these efforts with those to raise awareness about, and encourage a reduction in, consumption. Of course, such campaigns would not be aimed at city residents who need to increase their consumption in order to meet their basic needs, including low-income and impoverished populations. The Canadian National Zero Waste Council is undertaking a review of awareness campaigns that focus on reductions[90] including Metro Vancouver region's "Create Memories, Not Garbage" holiday campaign.[91] Portland's Resourceful PDX as outlined also in Chapter 4 on Community Sharing encourages people to start by "buying smart to create memories rather than excess stuff by planning ahead."[92] There are opportunities to do more to connect sharing activities to ecological footprint reductions, particularly because the focus on access to goods rather than ownership opens the door to conversations about living an 'asset-light lifestyle'.[93]

## RECOMMENDATION:

Redefine 'solid waste management' as 'materials management' in order to reveal sharing opportunities.

Local governments have jurisdiction over key aspects of the solid waste system which means they influence the way the city and key stakeholders perceive and manage goods. Cities are often focused on managing products and materials at the end of their useful life as waste; however, there is a growing movement among governments to reframe their waste and materials policies in order to adopt a more systemic and life-cycle approach. For example, the Federation of Canadian Municipalities offers a series of guides on "Solid Waste as a Resource."[94] This report highlights how this reframing leads to new opportunities for sharing among municipalities:

"Increasingly, municipalities are exploring partnerships and resource-sharing arrangements with other municipalities. Such partnerships may increase the amount of materials and alternative technologies available through improved economies of scale."[95]

Similarly, the State of Oregon shifted its attention from solid waste to managing the full life cycle of products and materials in its 2050 long-term vision in order to minimize materials use and reuse, and to manage materials more responsibly and efficiently.[96] This focus emphasizes prevention and recovery of materials - including through sharing - and influences the activities and priorities of Oregonian cities such as Portland and Eugene. The US EPA's West Coast Climate and Materials Management Forum emphasizes the role that lifecycle materials management plays in action on climate change.[97] Their analysis highlights the often underestimated level of greenhouse gas emissions from the provision of materials and product consumption, and the contribution of 'collaborative consumption' and other Sharing Economy activities in reducing the amount of materials in circulation.

### 3c.3.2 SUPPORT BUSINESS AND INDUSTRY SHARING

## RECOMMENDATION:

Support Business-to-Business exchange through initiating and/or supporting online platforms and Industrial Symbiosis pilot projects, including those where local government provides space or acts as an anchor partner.

It is not only households but also businesses and industry that consume high quantities of materials. There is a great opportunity for local governments to reduce the amount of wasteful resource use and materials disposal by supporting business-to-business resource exchanges. The Partners in Project Green Materials Exchange Program, highlighted in this Chapter provides an example of how a number of municipalities can collaborate with partners to support these types of exchanges. Another example is the role that Metro Vancouver municipalities are playing in facilitating business-to-business sharing through directly creating an online platform – MetroVancouverRecycles.org.[98]

## CITY CASE
## PARTNERS IN PROJECT GREEN: MATERIALS EXCHANGE NETWORK RUN BY TORONTO AND REGION CONSERVATION

*"Businesses need help to find and connect to waste solutions, since waste isn't their core business. Often they don't know where to start. The material exchange program directly addresses this by playing a facilitating role: providing businesses with access to resources and support, and connecting them to solutions tailored to their individual challenges."*[99]

Partners in Project Green[100] is an organization run by Toronto and Region Conservation, which provides a materials exchange network service to partners in the Pearson Eco-Business Zone, Greater Toronto Area, the Region of Peel, the City of Brampton, York Region, and the City of Mississauga. This catchement area includes some 12,000 businesses employing 350,000 workers. Partners in Project Green supports businesses, government entities, institutions, and utilities to extract maximum value from pursuing sustainability in waste management and resource recovery though the Materials Exchange Program,[101] established in 2013.

### Business-to-Business Exchanges

The Materials Exchange Program facilitates the exchange of materials between organizations and service providers, diverting materials from landfills, lowering disposal and input costs, and maximizing the value and recovery of resources. This is achieved through the Materials Exchange Network,[102] an online platform[103] and staff support program that works to match and connect organizations looking to sustainably dispose of materials. It is important to note here the significance of reframing 'waste' streams as 'materials.' Such a reframing can shift perspectives on by-products and reveal the value latent in traditional waste streams.

Businesses and organizations enroll in the Materials Exchange Program voluntarily, at which point Partners in Project Green performs a site visit and materials stream analysis to identify potential exchanges. Project Green staff then work to match organizations who can solve materials challenges, and facilitate the exchange of identified materials. Exchanges are conducted as business transactions, underscoring both the commitment of Project Green to enhance their members' bottom line, and to reframing waste as a resource.[104] For fiscal year 2014, the Materials Exchange Program logged more than 240 tonnes of materials exchanged between members.[105]

### The Role of Municipalities

A key feature of the Partners in Project Green Materials Exchange Network is the inter-municipal nature of the partnership. Early in the development of Project Green it became apparent that no single municipality could achieve their sustainability goals without the active participation of their neighbours. The online platform behind the Materials Exchange Network is emblematic, as it is provided by Second Cycle,[106] a successful exchange network operating in the neighbouring province of Québec.

A second critical aspect of the Materials Exchange Network is the active participation of the municipal governments in the program.

Partners in Project Green receives a majority of its core funding from the partnering municipalities, drawing additional funding as needed from granting foundations active in the sustainable development sector. Oversight of Partners in Project Green Materials Exchange Program is also provided by municipalities and participating businesses and organizations. The Waste Management Committee provides oversight for the Materials Exchange Program, and is staffed by members of municipal and provincial governments, as well as management from participating businesses in the Pearson eco-business zone.[107]

Partners in Project Green's membership includes several municipal governments and entities, including the City of Toronto, the Toronto and Region Conservation Authority, Greater Toronto Airports Authority, the Region of Peel, the City of Brampton, York Region, and the City of Mississauga.

## 3c.3.3
## CONSUMER PROTECTION FOR END-USERS

### RECOMMENDATION:

Adopt an end-user perspective in determining regulatory responses, including for consumer protection.

Local government has a role to play in ensuring that consumers are protected in shared goods exchange. According to Sunil Johal and Noah Jon from the Mowat Centre, policy-makers benefit from adopting an end-user perspective in determining their policy approach:

> *"Governments need to re-consider their approach to regulation and services by shifting towards a mindset that puts end-users, rather than government operations, at the centre of design....Adopting a mindset of making rules designed to be easy to understand would go a long way to making regulatory frameworks more effective, both for existing and new enterprises."*[108]

Authors Koopman, Mitchell and Thierer take a strong stance in their report "The Sharing Economy and Consumer Protection Regulation: The Case for Policy Change"[109] and encourage local governments and other regulators to relax their regulatory requirements for incumbent Sharing Economy actors in order to address problems of market failure and consumer risk and to encourage innovation. They argue that "markets, competition, reputational systems and ongoing innovation often solve problems better than regulation when we give them a chance to do so."[110] By adopting an end-user perspective, local government can balance the need to provide an innovation opportunity with the benefits and protections gained for consumers. Adapting regulations in this way is the focus of a June 2015 workshop by the US Federal Trade Commission which asked for public and expert input on the following:

> *"How can state and local regulators meet legitimate regulatory goals (such as protecting consumers, and promoting public health and safety) in connection with their oversight of sharing economy platforms and business models, without also restraining competition or hindering innovation?"*[108]

The results of the workshop and online discussion will be made available on their website.[112] The challenge is to balance an end-user understanding and market place support with protecting the public benefit.

## 3c.3.4
## EQUITABLE ACCESS TO GOODS

### RECOMMENDATION:

Prioritize support for Shared Goods activities that focus on equitable access to goods and foster social inclusion.

The sustainability analysis above highlights how equitable access to goods and opportunity to participate in Shared Goods exchange is not inevitable but needs to be designed into Sharing Economy activities. Local governments can play a role in encouraging and supporting those Sharing Economy activities and actors that demonstrate a commitment to equity and social inclusion. For example, the Hamilton Tool Library in Ontario, Canada donates a membership for a family in need for every membership purchased.[113]

## 3c.3.5
## LEAD BY EXAMPLE THROUGH MUNICIPAL GOODS SHARING AND PURCHASING

### RECOMMENDATION:

Incorporate sharing into public procurement specifications where there is relevant and significant alignment with city priorities - as long this does not distract from the more comprehensive adoption of sustainable procurement practices.

There are some opportunities for local government to specify shareability within purchasing decisions, including sharing cars through a car-sharing company instead of purchasing a fleet, and sharing municipal equipment through new platforms such as Munirent. Other examples of leading by example are provided in Chapter 8 on Strategic Opportunities. These efforts should complement a more comprehensive commitment toward sustainable purchasing across all categories of purchasing. Box 3c.4 provides further detail on this promising area.

## RECOMMENDATION:

Strategically engage in partnerships with other cities to share goods, such as municipal equipment.

Box 3c.5 in this Chapter outlines the opportunities for cities to share goods with other municipalities and particularly emphasizes the value of sharing municipal equipment.

## RECOMMENDATION:

Create an inventory of civic assets, promote the value of civic commons and support Sharing Economy activities through offering underutilized assets.

Municipal governments own an array of assets that can be valued, inventoried and offered for use to Sharing Economy actors. Box 3c.5 provides further detail.

BOX 3C.5

### WHAT IS THE ROLE OF SHARING IN SUSTAINABLE PUBLIC PROCUREMENT?

The scale of city government purchasing is by some estimates 7% of national GDP.[114] As a result, cities can play a key role in greening supply chains.[115] April Rinne notes in her "Top 10 Things a city can do to become a Shareable City" that there is value in 'sharing' specifications:

*"Systematically review all internal operations and policies, and see where you can use, promote or create collaborative economy platforms. For example: employee carsharing and ridesharing programs (such as Zipcar and Liftshare), using Airbnb for business travel; including shareability criteria in local procurement tenders and other municipal contracts."*[116]

Currently, shareability criteria is not routinely included in city specifications, according to Alicia Culver of the Responsible Purchasing Network.[117] Nevertheless, many localities have found that they can save money, reduce waste, lower their energy consumption, and contribute to the local economy by considering sharing in their purchasing practices.

In the face of budget shortfalls, many localities have been sharing heavy equipment with other cities. These include expensive equipment or seldom used goods such as backhoes, street sweepers, tractors, and road striping equipment, as well as furniture and other products.[118, 119] To facilitate this equipment-sharing process, some localities have adopted a shared services resolution or are using services such as MuniRent, which also offers training on the use of the shared equipment.[120]

Other municipalities have been able to save money and shrink their environmental footprint by sharing equipment internally. For example, some cities have "right-sized" their fleets by having several agencies utilize the same vehicles. This enables them to retire older, fuel-inefficient vehicles and reduce their maintenance costs.[121] Similarly, a growing number of local governments are reducing their use of paper, toner and other printing supplies by investing in shared, networked copiers in printers, while removing individual desktop printers.

Another way that local governments are using their purchasing power to support the Sharing Economy is by purchasing equipment – including bicycles, electric vehicle charging stations, and vehicles – that is used both by government agencies and the community.

If sharing criteria is applied superficially, it can be a distraction to a city's effort to undertake a more fundamental, comprehensive revision of its purchasing approach to support sustainability. Cities can apply shareability criteria in promising procurement areas – such as sharing goods that are infrequently used and

have high life-cycle costs such as equipment – while also advancing sustainability through transforming public procurement in an integrated way.

RESOURCES ON SUSTAINABLE PURCHASING AND PUBLIC PROCUREMENT:

- Sustainable Purchasing Leadership Council - https://www.sustainablepurchasing.org/
- Responsible Purchasing Network - http://www.responsiblepurchasing.org/
- Buy Smart Network - http://www.fraserbasin.bc.ca/comm_buysmart.html
- UN Sustainable Public Procurement Programme - http://www.unep.org/10yfp/Programmes/ProgrammeConsultationandCurrentStatus/Sustainablepublicprocurement/tabid/106267/Default.aspx

## BOX 3C.6
## MUNICIPAL GOODS SHARING

WHAT IS MUNICIPAL SHARING?

Some municipalities are directly engaging in the Sharing Economy through Peer-to-Peer (e.g., municipal-to-municipal) sharing and by identifying ways to better utilize (share) untapped or idle civic assets. The following two categories of municipal sharing have the potential to advance local government sustainability objectives: (1) municipal equipment, services and human resources and (2) civic assets. Note that Chapter 5 on Addressing Data Gaps also highlights opportunities for municipal knowledge and data sharing.

PEER-TO-PEER EQUIPMENT, SERVICES AND HUMAN RESOURCES SHARING

Many governments already have well established sharing relationships. For example, a 2013 survey of local municipal officials in New York State found:

- 6 percent share services with an informal understanding,
- 39 percent share services with a MOU / Inter-Municipal Agreement,
- 7 percent share services by utilizing joint ownership, production or purchase,
- 26 percent share services by contracting with another government, and
- 6 percent share services by creating a special district/authority."[122]

New Sharing Economy online tools are being adopted to expand the reach and uptake of these activities. For example, MuniRent, a private sector run web-enabled platform that launched in January 2014, facilitates sharing of equipment and personnel between and within member governments. It provides an online searchable listing and handles reimbursement paperwork. One member of MuniRent stated that "On an enterprise level, MuniRent is the future of intelligent multi-agency equipment sharing."[123] MuniRent has the potential to streamline and simplify existing sharing that has already been occurring between and within local and regional governments.[124]

Marion County, Oregon established an intergovernmental agreement (IGA) to facilitate equipment and human resources sharing in 1994, as well as a program - Managing Oregon Resources Efficiently (MORE) IGA. More than 40 Oregon municipalities participate in this program; and there are plans to adopt the MuniRent tool more broadly.[125]

New York State passed a law to enhance "collaboration between and among different entities like local governments, school districts, fire districts and water conservation districts". The State has found that its local governments are most often sharing public safety, transportation, and recreational and social services; half of them share public transit and highway and road maintenance; and a number of them also share information technology and payroll/bookkeeping services. Many of these governments are reporting resulting savings of two to five percent. For example, Monroe and Franklin Counties share highway and paving equipment with $80,000 in annual savings for each county; and Broome County and the Town of Chenango, report annual savings of $70,400 and $55,200 due to the sharing of a salt storage facility.[126]

CIVIC ASSETS SHARING

Civic assets include a spectrum of physical civic amenities or spaces such as parks, transit stations, schools, community centers, hospitals, libraries, and post offices. The equipment and tools used by governments in carrying out their work are also civic assets – tangible materials that have value for the local government.

There are a variety of ways in which civic spaces can be used for Sharing Economy activities, which are fully explored in Chapter 3b on Shared Spaces and also highlighted in Chapter 4 on Community Sharing. Civic spaces can be used for uses such as the production of edible plants, for pop-up stores and incubator kitchens, or for a shared transportation hub (bicycles or vehicles). See Box 3c.2 on Pop-up Retail above which highlights the rise in 'pop-up' store-fronts as an example of how under-utilized civic spaces can be transformed into an opportunity to support local business start-ups. The Community Sharing Work Group for this project determined that one of the top needs of community sharing innovators is reliable, affordable space for their activities. This resulted in a recommendation that local governments link municipal infrastructure – particular civic spaces such as community centres and public libraries – to the needs of community sharing innovators.

Some governments have been exploring ways in which to better utilize equipment or tools that are idle or no longer needed. There are numerous examples of governments making their surplus assets available to residents at low cost. For example, the BC Government's Asset Investment Recovery Program enables the government to liquidate surplus equipment and supplies through three cash and carry locations, while at the same time providing residents a low-cost option for purchase of their office equipment needs.[127] More sophisticated tools are emerging to facilitate governments and businesses ability to put idle assets to use. For example, the myTurn web-based platform provides a range of functionalities to facilitate sharing, including inventory management, lending library/user management, and money / billing management.[128] The website promotes its use as a tool for setting up and managing lending libraries. myTurn also suggests that their cloud-based architecture contributes to community resilience through its potential to help with disaster planning and recovery as it provides the ability to locate public and private assets through mobile devices.

Civic spaces form the "backbone of any city's civic commons: a network of publicly financed and managed amenities to serve the broader, collective needs of local neighborhoods and to benefit the city as a whole".[129] This roadmap explores Shared Spaces in more detail in Chapter 3b. In recent times many people have disengaged with the civic commons, preferring to spend their time at homes, some of which are in gated communities; or in their private cars instead of using public alternatives.[130] At the same time many governments have been eliminating these assets or reducing operating hours to save money.[131]

Cities are now coming together to explore ways to reposition the civic commons as value creators, particularly with respect to how they can help advance sustainability outcomes. In North America, city leaders convened at Re-Imagine the Civic Commons workshops,[132] and in Montreal, the Civic Assets Project is attempting to create a framework to better 'recognize, preserve and perpetuate the value' of civic commons in part through the development of a series of case studies.[133]

## HOW CAN MUNICIPAL SHARING ADVANCE URBAN SUSTAINABILITY?

The primary ways in which municipal sharing can advance sustainability outcomes are summarized in the table below.

| SHARING OF... | LIVING WITHIN (ECOLOGICAL) MEANS | ADVANCING A STRONG LOCAL ECONOMY/ ENHANCING RESILIENCE | ENSURING QUALITY OF LIFE AND WELLBEING FOR ALL |
|---|---|---|---|
| **Equipment, Services and Human Resources** | Reduced demand for goods/ equipment lowers the resource intensity of municipal services. | Reduced costs of delivering municipal services.<br>Creation of a revenue stream through the rental of idle assets. | Opportunities for building social connectivity among municipal actors. |
| **Civic Assets** | Use of idle assets can contribute to reduced consumption of resources through the avoidance of purchase of new equipment. | Web-based platforms containing inventories of equipment can enhance the resilience of communities.<br>The use of tool libraries can provide affordable access to local businesses. | The use of tool libraries can provide affordable access to residents. |

RESOURCES

- Re-imagining the Civic Commons project, see: http://www.mas.org/wp-content/uploads/2015/06/Re-Imagining-the-Civic-Commons.pdf
- Municipal cooperation: sharing services in NY, by Tim Hoefer and Michael Wright. (2014). See: http://www.empirecenter.org/publications/municipal-cooperation-sharing-services-in-ny/
- Local Government Management Guide: Shared Services in Local Government, by Thomas P. DiNapoli, State Comptroller, Office Of The New York State Comptroller. (2009). See: http://www.osc.state.ny.us/localgov/pubs/lgmg/sharedservices.pdf
- Research Brief: Shared Services Among New York's Local Governments Best Practices and Tips for Success, by Thomas P. DiNapoli, State Comptroller, Office Of The New York State Comptroller. (2009). See: http://www.osc.state.ny.us/localgov/pubs/research/sharedservices.pdf

## 3c.3.6
## ENABLE COMMUNITY SHARING

### RECOMMENDATION:

Adopt relevant recommendations outlined in Chapter 4 on Community Sharing.

Chapter 4 focuses on Community Sharing and explores the question of what local governments can do to enable and help scale Community Sharing innitiatives and behaviours which advance urban sustainability. Many cities have become active players in this field by supporting and/or developing sharing platforms, such as Resourceful PDX in Portland. Such platforms present a cost-effective way to promote the reuse of goods while building community and helping to shift patterns of behavior. Local governments can also support fix-it and repair clinics to extend the life of goods. The City of Flagstaff, AZ and Hennepin County, Minnesota, both detailed in Chapter 4, present particularly useful models for this type of activity.

## 3c.4
## SUGGESTED RESOURCES

- Cascadia Consulting Group and USDN (2015) Sustainable Consumption and Cities: Approaches to measuring social, economic and environmental impact in cities. USDN.
- Damien Demailly and Anne-Sophie Novel (2014) The Sharing Economy: Make it Sustainable. IDDRI. New Prosperity. No.3 / 14. July.
- National Industrial Symbiosis Programme – http://www.nispnetwork.com/about-nisp

1 R. Botsman and R. Rogers (2010), *What's Mine Is Yours: The Rise of Collaborative Consumption*, Harper Business

2 http://www.collaborativeconsumption.com/2013/06/13/report-world-economic-forum-sharing-economy-position-paper/ p.8

3 Juliet Schor, *Debating the Sharing Economy,* Great Transition Initiative, October 2014: 4. http://www.greattransition.org/images/GTI_publications/Schor_Debating_the_Sharing_Economy.pdf.

4 Ibid. 4-5

5 https://www.newdream.org/programs/collaborative-communities/community-action-kit/sharing

6 Jeremiah Owyang, *Collaborative Economy Honeycomb: Version 2.0,* (December 2014). https://www.flickr.com/photos/jeremiah_owyang/15928658251/sizes/k/.

7 Julian Agyeman, Duncan McLaren, and Adrianne Schaefer-Borrego, *Sharing Cities*, Friends of the Earth, (September 2013). http://www.foe.co.uk/sites/default/files/downloads/agyeman_sharing_cities.pdf.

8 USDN *Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities*, 2015: 10.

9 http://www.forbes.com/sites/ciocentral/2013/10/03/the-new-curated-consumer-marketplace-model-10-criteria-for-success/

10 http://www.forbes.com/sites/drewhendricks/2014/08/12/marketplace-startups-are-eating-entire-industries/

11 https://nextcity.org/features/view/bp-oil-spill-new-orleans-gulf-solutions-economy-business

12 http://www.onthecommons.org/magazine/debating-the-sharing-economy

13 https://www.etsy.com/

14 https://boardgamegeek.com/geekmarket; and http://www.kijiji.ca/.

15 http://bankinnovation.net/2014/04/walmart-enters-p2p-space/

16 https://docs.google.com/document/d/19rAEJkLeRzmZgdaslZe01-wO_S16syeFXtP3qLEvPrI/edit?pli=1 Chapter 3

17 http://www.resourcefulpdx.com/about/

18 https://lawreview.uchicago.edu/page/self-regulation-and-innovation-peer-peer-sharing-economy

19 https://lawreview.uchicago.edu/page/self-regulation-and-innovation-peer-peer-sharing-economy

20 As quoted here: http://climateone.org/audio/sharing-economy

21 http://www.greenbiz.com/blog/2014/04/15/yerdle-patagonia-collaborative-economy; http://www.fastcoexist.com/3038383/patagonia-invests-in-yerdle-through-its-internal-venture-fund

22 Interview with Erick Davidson, Listia.com

23 http://www.ellenmacarthurfoundation.org/circular-economy/circular-economy/the-circular-model-an-overview

24 http://www.collaborativeconsumption.com/2013/06/13/report-world-economic-forum-sharing-economy-position-paper/ p.3

25 http://www.iddri.org/Publications/Economie-du-partage-enjeux-et-opportunites-pour-la-transition-ecologique p.26

26 http://www.custommade.com/blog/makerspaces/

27 http://portlandonthecheap.com/homeimprovement.html

28 http://www.stuffstr.com/ourstory/

29 http://www.economist.com/node/13354332

30 http://www.iddri.org/Publications/Economie-du-partage-enjeux-et-opportunites-pour-la-transition-ecologique p.22

31 http://www.iddri.org/Publications/Economie-du-partage-enjeux-et-opportunites-pour-la-transition-ecologique p.1

32 http://www.unep.org/resourcepanel/Publications/City-LevelDecoupling/tabid/106135/Default.aspx

33 http://www.nolo.com/legal-encyclopedia/free-books/sharing-book/chapter11-3.html

34 http://strathconabia.com/sustainability/

35 http://www.collaborativeconsumption.com/2014/06/04/floow2-goes-business-park-sharing/

36 http://www.cnbc.com/2015/05/26/caterpillar-buys-into-construction-rental-start-up-yard-club.html

37 http://nispcanada.com/about/

38 Ibid.

39 http://www.johnehrenfeld.com/Kalundborg.pdf

40 http://nispcanada.com/about/perfect-business-sense/

41 http://ie.tudelft.nl/index.php/Alberta's_Industrial_Heartland; http://industrialheartland.com/

42 http://www.supplychainquarterly.com/ topics/Global/scq201102kimberly/

43 In Kimberly-Clark's pioneering supply chain collaboration they partnered with Lever Fabergé on a pilot project in which made joint deliveries to customers, with each company using half of each truck. Since that pilot they have grown to add a number of other partners in various locations where the company operates. (See: http://www.supplychainquarterly.com/ topics/Global/scq201102kimberly/)

44 http://www.elupeg.com/

45 http://www.sustainabilityconsortium.org/

46 http://www.openlivinglabs.eu/

47 http://www.ge.com/about-us/ecomagination

48 http://www.innocentive.com/blog/2013/10/03/ge-ecomagination-challenge-more-than-just-challenge-driven-innovation-in-action/

49 http://strathconabia.com/sustainability/

50 https://www.thestorefront.com/

51 http://blog.thestorefront.com/what-exactly-is-a-pop-up-shop/

52 http://calgaryherald.com/business/local-business/pop-up-stores-becoming-a-popular-retail-trend?__lsa=e793-d7d9

53 http://www.shopify.ca/blog/11654877-why-you-should-open-a-pop-up-store-and-7-location-ideas-to-get-you-started

54 http://www.seetorontonow.com/shopping/secondhand-chic-10-toronto-vintage-stores-to-get-fab-finds/

55 http://clsbluesky.law.columbia.edu/2015/03/06/regulating-the-underground-secret-supper-clubs-pop-up-restaurants-and-the-role-of-law/

56 https://www.thestorefront.com/about

57 http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB2719; and http://clsbluesky.law.columbia.edu/2015/03/06/regulating-the-underground-secret-supper-clubs-pop-up-restaurants-and-the-role-of-law/

58 http://blog.thestorefront.com/storefront-partners-with-the-metro-transit-authority-to-offer-retail-space-in-new-york-subways/

59 https://app.thestorefront.com/
60 http://www.listia.com/profile/4126480
61 http://www.govtech.com/public-safety/How-the-Sharing-Economy-is-Strengthening-Emergency-Response-and-Recovery.html
62 http://eartheasy.com/our-story
63 http://www.ebay.com/gds/Top-10-Organic-Detergents-and-Cleaners-for-Baby-Items-/10000000177678230/g.html
64 http://www.wired.com/2014/09/makerspace/
65 https://biblioottawalibrary.ca/en/ImagineSpace
66 http://biomimicry.net/videos/2013/the-3d-printing-revolution-explained-in-20-minutes/
67 http://news.nationalgeographic.com/news/2013/07/130707-3d-printing-biomimicry-green-design-science/
68 http://www.pressherald.com/2014/06/15/bill-nemitz-portland-group-helps-to-furnish-better-lives/; http://www.furniturebank.org/us/what-is-a-furniture-bank/
69 http://www.jrf.org.uk/publications/online-marketplaces-poverty
70 http://www.theatlantic.com/business/archive/2012/08/very-sad-graph-how-much-americans-have-left-to-spend-after-essentials-today/260606/
71 http://www.usnews.com/news/articles/2013/11/05/when-it-comes-to-inequality-the-us-is-above-average
72 http://exploringtech.org/about-us
73 http://news.uwlax.edu/uw-l-student-organizes-first-back-to-school-clothing-swap/; http://www.telegram.com/article/20150712/NEWS/150719714
74 http://crashbanglabs.org/about/
75 http://www.davidleeking.com/2014/01/07/tour-of-kansas-city-makerspaces-co-working-spaces/; http://www.homesforhackers.com/; http://hammerspacehobby.com/
76 https://www.scottsmarketplace.com/about/
77 http://www.motherjones.com/politics/2012/02/mac-mcclelland-free-online-shipping-warehouses-labor; https://www.change.org/p/amazoncom-warehouse-workers-are-people-not-machines
78 http://www.fastcompany.com/3045471/most-creative-people/rent-the-runways-formula-for-finding-and-fostering-women-leaders; http://www.glassdoor.com/Reviews/Rent-The-Runway-unlimited-vacation-Reviews-EI_IE473698.0,15_KH16,34.htm
79 http://www.collaborativeconsumption.com/2013/06/13/report-world-economic-forum-sharing-economy-position-paper/ p.3; and Mary Meeker 2012 Internet Trends report update: http://www.kpcb.com/insights/2012-internet-trends-update
80 http://www.marketwatch.com/story/the-sharing-economy-built-for-millennials-boon-for-retirees-2014-10-24
81 Jennie Moore (2015), *Ecological Footprints and Lifestyle Archetypes: Exploring Dimensions of Consumption and the Transformation Needed to Achieve Urban Sustainability.* Sustainability, 7, 4747-4763.
82 http://blogs.wsj.com/economics/2014/01/22/what-products-drove-consumer-spending-luxury-items-mostly/
83 https://www.renttherunway.com/; http://www.bagborroworsteal.com/; http://www.adorn.com/; http://www.theguardian.com/money/2009/jan/04/renting-luxury-goods
84 http://www.nytimes.com/2006/09/12/style/12iht-rrental.2782772.html
85 http://www.theguardian.com/money/2009/jan/04/renting-luxury-goods
86 http://www.entrepreneur.com/article/217262
87 http://www.triplepundit.com/special/rise-of-the-sharing-economy/netflix-legos-mere-childs-pley-sharing-economy/
88 http://metcalffoundation.com/publications-resources/view/green-economy/
89 http://usdn.org/public/Products-EconDev.html
90 http://www.nzwc.ca/campaigns/communications-campaigns/Pages/default.aspx
91 http://www.nzwc.ca/campaigns/communications-campaigns/Pages/create-memories.aspx
92 HYPERLINK "http://www.nzwc.ca/campaigns/communications-campaigns/Pages/create-memories.aspx" http://www.nzwc.ca/campaigns/communicat
93 ions-campaigns/Pages/create-memories.aspx; and
013/06/13/report-world-economic-forum-sharing-economy-position-paper/
94 http://www.fcm.ca/home/programs/green-municipal-fund/resources/waste-resources/tools-and-reports.htm
95 http://www.fcm.ca/Documents/tools/GMF/Solid_waste_as_a_resource_en.pdf p.30
96 http://www.oregon.gov/deq/LQ/Pages/SW/MaterialsManagement.aspx
97 http://yosemite.epa.gov/R10/ECOCOMM.NSF/climate+change/wccmmf
98 http://www.metrovancouverrecycles.org/Pages/Business.aspx
99 Interview with Malaz Sebai, Project Manager, Waste Management, Project Green
100 https://www.partnersinprojectgreen.com
101 https://www.partnersinprojectgreen.com/your-needs/waste-management/materials-exchange-program/
102 https://www.partnersinprojectgreen.com/your-needs/waste-management/materials-exchange-network/
103 https://partnersinprojectgreen.secondcycle.net/en/default.aspx
104 https://www.partnersinprojectgreen.com/wp-content/uploads/2015/04/PPG_MaterialExchangeProgram_FINAL.pdf
105 http://ar2014.partnersinprojectgreen.com/results-waste-management/
106 https://www.secondcycle.net
107 https://www.partnersinprojectgreen.com/about-us/executive-management-committee/waste-management-committee/
108 http://mowatcentre.ca/policymaking-in-the-sharing-economy/ p. 22
109 http://mercatus.org/publication/sharing-economy-and-consumer-protection-regulation-case-policy-change
110 http://mercatus.org/publication/sharing-economy-and-consumer-protection-regulation-case-policy-change p. 19
111 https://www.ftc.gov/news-events/press-releases/2015/04/ftc-examine-competition-consumer-protection-economic-issues
112 https://www.ftc.gov/news-events/press-releases
113 https://www.indiegogo.com/projects/hamilton-tool-library-2015#/story
114 A. Culver (2008), *Buying Smart: Experiences of Municipal Green Purchasing Pioneers*, Green Purchasing Institute, May. p. 2
115 http://www.theguardian.com/sustainable-business/blog/procurement-professionals-sustainable-supply-chain
116 http://www.collaborativeconsumption.com/2014/02/05/top-10-things-a-city-can-do-to-become-a-shareable-city/
117 Interview with Alicia Culver, June 2015

118 http://www.triplepundit.com/2015/03/asset-sharing-new-task-procurement-facility-management/

119 Lake County cities sharing their heavy equipment: *Whatever happened to ...?* http://www.cleveland.com/metro/index.ssf/2013/03/lake_county_municipalities_sha.html

120 https://nextcity.org/daily/entry/sharing-economy-city-equipment-munirent

121 http://www.government-fleet.com/article/story/1999/09/fleets-downsize-to-streamline-cost.aspx

122 http://www.empirecenter.org/publications/municipal-cooperation-sharing-services-in-ny/

123 http://www.govtech.com/internet/Munirent-Brings-Sharing-Economy-to-Government.html

124 Yard Rent (http://www.yardclub.com/) is a web-based platform similar to MuniRent, established in 2013, however, its target users are contractors. Currently it operates in San Francisco with plans to expand through California. Catepillar recently became a funding partner to help grow the tool. (http://www.cnbc.com/2015/05/26/caterpillar-buys-into-construction-rental-start-up-yard-club.html)

125 http://www.co.marion.or.us/PW/Roads/MORE/

126 http://www.empirecenter.org/publications/municipal-cooperation-sharing-services-in-ny/

127 http://www.pss.gov.bc.ca/air/public-sales.html

128 http://myturn.com/government/

129 http://www.knightfoundation.org/blogs/knightblog/2014/7/17/municipal-art-society-nyc-grant-new-civic-commons-work/

130 Re-Imagining the Civic Commons, 2015.

131 http://www.knightfoundation.org/blogs/knightblog/2014/7/17/municipal-art-society-nyc-grant-new-civic-commons-work/

132 http://www.bizjournals.com/prnewswire/press_releases/2015/06/12/DC32628

133 http://thecommonsinc.com/design/civic-assets/

# 3d.

# SHARED FOOD

The tools and approaches of the Sharing Economy are being employed by a wide range of food initiatives, which can be loosely placed in the following categories: land sharing, 'idle food redistribution', meal sharing, kitchen space and equipment sharing, community supported food production and food production in public spaces.[1]

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This Chapter provides an initial scan and analysis of the Shared Food sector of the Sharing Economy. This is a lighter and less in-depth exploration than the previous Chapters focused on the following aspects of this area:

1. **Land sharing:** sharing of backyards, farms, and public spaces for food production.
2. **'Idle' food redistribution:** sharing unwanted or excess food between individuals, groups and businesses.
3. **Meal sharing:** individuals sharing food in community kitchens, inviting people into their homes to share meals, or 'meet-ups' of strangers sharing a meal.
4. **Kitchen space and equipment sharing:** typically employing a co-op or rental model.
5. **Community supported food production:** such as Community Supported Agriculture (CSA).
6. **Food production in public spaces:** community gardens and orchards.

# 3d.1
## SHARED FOOD EXAMPLES

The following section provides examples of Shared Food initiatives in each of the six categories, with an emphasis on those with the greatest potential to contribute to sustainability.

### LANDSHARE PLATFORM EXAMPLES

**Shared Earth**[1] has more than 3.8 million square meters of land for farming and gardening available for sharing across the globe.

**Landshare,**[2] which began in the UK, now has about 75,000 members, and has expanded to Canada and Australia.

**Land linking examples:**
Listings of land linking programs and opportunities are available at:

- http://www.cfra.org/resources/beginning_farmer/linking_programs (US)
- https://www.farmlink.net/en/index.html (Canada)
- http://youngagrarians.org/tools/land/ (Canada)

### Land Sharing

Land sharing brings people together who have land to share with those who need access to land for cultivating food.[3] Numerous organizations around the world have created online platforms to facilitate land sharing, allowing landowners to offer their excess backyards, farmland, or other viable land to others for growing food. The sharing agreements do not usually involve money, but instead include an exchange of gardening services and/or produce.

Farm cooperatives and land linking are two additional forms of land sharing that provide access to farmland for those who would otherwise be excluded due to cost barriers. Although not a new model, Cooperative Farms are an increasingly popular Shared Farm opportunity.

Farm cooperatives can take different forms. In some cases individuals join together to establish a farm on a given

piece of land, or in others businesses join together to create a cooperative farm.[4] There are more than 2,500 farm cooperatives in the US.[5]

Land linking is a relatively new model in which landowners, particularly retiring farm owners, are linked with new farmers. The retiring landowner typically serves as a mentor and ownership is transferred gradually through a mutually beneficial agreement. Land linking provides a number of benefits: it preserves farmland; it transfers agricultural knowledge to the next generation of farmers; and it provides access to land in an affordable way for new farmers who do not come from farming families.[6]

## 'Idle' Food Redistribution

These initiatives involve individuals or business sharing unwanted or excess food. Individuals offer leftovers or produce they've grown. Businesses such as retailers or restaurants donate or sell (at a reduced cost) their excess food with consumers or community groups such as food banks. A few illustrative examples:

- **RipeNearMe**[7] is an app being used around the world by people to share produce they've grown.
- **CropMobster**[8] is a California based initiative which provides "instant alerts" about excess local food and surplus from suppliers in the food chain. They also provide an avenue for crowdfunding (e.g. for seed library start-ups), food donations for foodbanks, and Landsharing.
- **FoodCloud**[9] is a Dublin based non-profit which provides an app and website through which participating businesses can upload details of their surplus food for collection by food banks and charities.
- There are numerous **Fruit Tree programs** in communities around the world, many of which provide an online tool for finding and sharing fruit from backyards and public lands. Typically, volunteers collect these fruits and distribute them to a variety of community groups and food banks. The **Vancouver Fruit Tree Project,**[10] for example, has harvested and distributed more than 24 tonnes of food in the past 14 years. One US-wide program is the **Neighborhood Fruit**[11] which has more than 10,000 registered trees in the US.
- **LeftoverSwap**[12] provides an app for individuals to upload photos of their leftover or unwanted food to donate or sell to other individuals.

## Meal Sharing

### CASSEROLE CLUB

**Casserole Club, based in the UK was developed with the support of local authorities.**

This program's app and website facilitates volunteers sharing extra portions of their home-cooked food with people in their neighbourhood unable to cook for themselves, or who prefer not to. According to their website, more than 7,000 people are now providing home-cooked meals to their neighbours through Casserole Club.[8]

Through meal sharing apps and websites, individuals are connecting with strangers to access or provide home-cooked meals, or to simply get together to share meals in their neighborhoods or while travelling. All of these activities provide the benefit of creating social connections around food, while some provide the added social benefit of supporting those that cannot cook for themselves.

A few illustrative examples of Meal Sharing:

- **Cookening**[14] and **Meal Sharing**[15] connect travellers with local hosts who share or provide home-cooked meals and an 'authentic' local food experience.
- **EatWith**[16] is similar to Cookening but the host is a local chef.
- **Shareyourmeal,**[17] provides the opportunity for neighbours to share meals with neighbours and is based in the Netherlands. More than 120,000 meals have now been shared and there are more than 55,000 members.
- **Eatwithme**[18] through its app and website facilitates food "meet-ups" in any form.
- **Feastly**[19] features chefs cooking in various locations such as home kitchens and pop-up spaces.
- **Restaurant Days**[20] is a food festival / carnival created by thousands of people in cities organizing and visiting one-day restaurants to have fun, share food experiences and enjoy common living environments together.

## Kitchen Space and Equipment Sharing

### VANCOUVER INCUBATOR KITCHEN

**The Vancouver Incubator Kitchen was developed through a partnership between the City of Vancouver and other local organizations.** The City supported this initiative as it would help achieve the goals of the Vancouver Food Strategy, the Greenest City Strategy and the Healthy City Strategy.[23]

### PRESSO, MILAN

**Milan, Italy is finding unique ways to address health and safety issues that arise with Shared Food activities.**

For Expo 2015, the city is opening up existing spaces and constructing new multi-use spaces where people can cook and eat together. Presso,[24] "a cross between a showroom for consumer products and a public living room"[25] allows people to walk in with food in hand to use the kitchen facilities (or even use what's in the on-site pantry) and to sit down and eat. Being a public/commercial space, the building and facilities are up to code and meet health and safety standards, ensuring that legal problems are headed off.

Incubator Kitchens provide food entrepreneurs access to kitchens and in some cases restaurant space. CulinaryIncubator.com currently lists more than 500 kitchens that are available for rental in the US and Canada. Many of these incubators are also providing community services. The Toronto Incubator, for example, provides healthy cooking workshops and training on canning and preserving food.[26] Some communities also have Kitchen Libraries. The Toronto Kitchen Library operates under a cooperative model and signs out kitchen appliances on a weekly basis.[27]

## Community Food Production and Food Production in Public Spaces

Community Supported Agriculture (CSA) is an alternative economic model which enables farmers and consumers to share the risks and benefits of farming. Through CSAs, members pay upfront at the beginning of the year for their share in the harvest of local farmers. CSAs have been around for decades and this model has now been expanded to fisheries in a number of locations. Some CSAs have begun to use Sharing Economy web-based tools.[28]

The following table summarizes the most significant environmental, social and economic outcomes that can be advanced by each of the Shared Food categories. The table demonstrates that some of the Shared Food categories have greater potential to advance community sustainability on a variety of levels.

## Table 3d.1
### SIGNIFICANT SUSTAINABILITY OUTCOMES BY SHARED FOOD CATEGORY

| SHARED FOOD CATEGORY | FOOD PRODUCTION IN PUBLIC SPACES | COMMUNITY SUPPORTED FOOD PRODUCTION | KITCHEN SPACE AND EQUIPMENT SHARING | MEALSHARING | 'IDLE' FOOD REDISTRIBUTION | LANDSHARING / LAND LINKING |
|---|---|---|---|---|---|---|
| Living within ecological means: Reduce emissions/ ecological footprint | ✓ | ✓ | | | ✓ | ✓ |
| Reduced food waste | ✓ | | | | ✓ | |
| Increase local food and resilience | ✓ | ✓ | | | | ✓ |
| Natural Systems – Preserve farmland | ✓ | ✓ | | | | ✓ |
| Equity – Access to healthy food | ✓ | ✓ | | ✓[29] | | |
| Enhance prosperous local economies | | ✓ | ✓ | ✓ | | ✓ |
| Quality of Life: Create social connections | ✓ | | ✓ | ✓ | | ✓ |

### INCREDIBLE EDIBLE

Incredible Edible Todmorden in West Yorkshire, UK is an initiative aimed at making the town self-sufficient in vegetables, orchard fruits and eggs by 2018. This program was initiated by ex-councillors and has received strong support from the local government. The council began by allocating land for a community orchard, and funding for 500 fruit trees, and it later created a land licence scheme in which anyone can approach the council about unused council land to apply for a growing licence.[30]

Community gardens and shared orchards have also been around for decades and are an important component of the Shared Food landscape. A growing number of initiatives are underway to put underutilized public space into food production. One leading example is provided in the box 3d.5.

## 3d.2
## HOW CAN SHARED FOOD ADVANCE URBAN SUSTAINABILITY?

Shared food initiatives can contribute to a range of sustainability goals to varying degrees. The provision of adequate and healthy food is both a global and a local challenge, and the way in which we provide food has a variety of environmental, social and economic implications. Food has always been an important social connector and the Sharing Economy is exploring ways in which to reclaim and expand these connections.

**Some of the key environmental, social and economic outcomes associated with Shared Food initiatives include:**

- Increased local (and sometimes organic) food production.
- Land linking and farming cooperatives in particular contribute to the preservation of farmland, passing down of farming knowledge (through mentorship) and making farming more affordable – particularly for younger farmers.[31]
- Reduction of carbon emissions and other air quality emissions (local food production reduces long-distance transportation emissions; reduction of organic waste reduces landfill greenhouse gas emissions).
- Redirection of idle food or food that would otherwise become waste can reduce the overall food demand of a region, thereby reducing the ecological footprint of food production.
- Increased access to healthy food by those who have difficulty purchasing enough food.
- Enhanced resilience of the community as a result of reduced dependence on imported food.
- Building community through the creation of meaningful social connections around food.
- Contributing to a diverse and rich local economy through the provision of opportunities for aspiring chefs.

## Table 3d.2
### SHARED FOOD CATEGORY AND LOCAL GOVERNMENT ROLES

| CATEGORY | POSSIBLE LOCAL GOVERNMENT ROLES |
|---|---|
| **Landsharing** | Promote; fund non-profits providing the sharing platforms or offer landsharing as an in-house municipal service. |
| **'Idle' food redistribution / Mealsharing** | Regulate and enforce health and safety standards for companies and non-profits active in idle food redistribution and mealsharing. Grant seed funding for local initiatives that provide mealsharing opportunities to those that are having difficulty cooking for themselves and/or for those that are focused on organic and/or local food. |
| **Kitchen space / equipment sharing** | Promote; Fund non-profits providing the service (e.g., through seed funding for start-ups or on-going donations; provide access to government owned space). Regulate and enforce health and safety standards for shared kitchen spaces and equipment sharing. Support and facilitating mobile food vendors. |
| **Community supported food production** | Promote; Support, via government purchasing, community supported agriculture (CSA) produce for in-house needs; Promote, in the US, the use of Supplemental Nutrition Assistance Program (SNAP)[32] for the purchase of CSA shares. |
| **Food production in public spaces** | Allocate public land for community gardens and orchards; Promote non-profits developing these programs. Grant seed funding for local community groups organizing these initiatives. Remove zoning barriers to urban food production. Provide financial incentives to encourage urban agriculture on vacant lots. |

# 3d.3
## RECOMMENDATIONS: HOW CAN LOCAL GOVERNMENTS ADVANCE SHARED FOOD INITIATIVES?

A number of Shared Food initiatives have benefited from the active involvement of local government.

In addition, food sharing and space / land sharing can present a unique set of challenges for local government regulators. The growth in meal sharing and idle food redistribution initiatives are in some cases being met with concern over health and safety issues. (See box 3d.1)

Table 3d.2 below highlights some of the ways in which local governments can become engaged in Shared Food initiatives.

### SHARED FOOD AND ZONING AND HEALTH AND SAFETY REGULATIONS

For meal sharing initiatives the biggest challenge is with violations of zoning and health and safety regulations, as individuals transform their homes into commercial spaces requiring business licences, health inspections, and a host of other compliances.[33]

The potential problems arising from the preparation and serving of food by a host who may have little or no health and safety training, and in an unlicensed kitchen in a home not correctly zoned for commercial use requires strategic action by local governments. Some meal sharing websites are extending insurance policies to cover their users in the event of fines or legal suits, but this is an imperfect solution that fails to move meal sharing from the informal to the formal economy, and thus within the taxation remit of local governments.[34]

Meal sharing platform owners don't consider that existing regulations should necessarily apply for various reasons: they are platforms, not food establishments; some transactions are non-monetized; and regulations vary greatly from one jurisdiction to another.

### Resources

- The Policies for Shareable Cities Report provides an overview of the ways in which municipalities can better support Shared Food initiatives through zoning, bylaws and incentives: http://www.shareable.net/blog/9-urban-food-policies-for-strong-local-food-systems.[35]
- Initiating and sustaining community gardens and community kitchens: A preliminary study in Nova Scotia (December 2014). By Tim Cashion, Irena Forbes, and Dr.Irena Knezevic: http://foodarc.ca/wp-content/uploads/2015/01/Initiating-and-Sustaining-Community-Gardens-and-Community-Kitchens-in-NS-Dec2014-Final.pdf.[36]

1 *Shared Earth: The Largest Community Garden on the Planet!*. http://sharedearth.com/.

2 *Landshare – connecting growers to people with land to share.* http://www.landshare.net/.

3 *Landshare – connecting growers to people with land to share.* http://landsharecanada.com/.

4 Pearson, Emily. *Sharing the farm: How the sharing economy impacts land access for farmers and the implications for sustainability*. March 2015.

5 *Cooperative Facts – National Council of Farmer Cooperatives.* http://www.ncfc.org/information/cooperative-facts.

6 Corey Allen, *Borrowing the Farm,* UBC News, July 22, 2014. http://news.ubc.ca/2014/07/22/borrowing-the-farm/.

7 *Ripe Near Me – local food, home grown vegies, neighborhood fruits.* http://www.ripenear.me/.

8 *CROPMOBSTER – San Francisco Bay Area.* http://sfbay.cropmobster.com/.

9 *FoodCloud – What We Do.* http://foodcloud.net/what-we-do/.

10 *Who We Are & What We Do – Vancouver Fruit Tree Project Society."* http://vancouverfruittree.com/.

11 *Welcome to Neighborhood Fruit.* http://neighborhoodfruit.com/.

12 *LeftoverSwap.* http://leftoverswap.com/.

12 *Casserole Club.* https://www.casseroleclub.com/.

13 *Eat with a local – Cookening.* https://www.cookening.com/.

14 *Meal Sharing: Eat with people from around the world.* https://www.mealsharing.com.

15 *Eatwith.com – Dining Experience, Supper Clubs, Local Food and more.* http://www.eatwith.com/.

16 *Shareyourmeal.net, what's your neighbour cooking?* http://www.shareyourmeal.net/.

17 *Eat With Me.* http://www.eatwithme.net/welcome.

18 *Feastly* https://eatfeastly.com/.

19 *Restaurant Days* http://www.restaurantday.org/en/

21 *Community Kitchens – FoodShare Toronto.* http://www.foodshare.net/community-kitchens

22 Irena Knezevic, *Initiating and sustaining community gardens and community kitchens: A preliminary study in Nova Scotia,* Food ARC, December 2014. http://foodarc.ca/wp-content/uploads/2015/01/Initiating-and-Sustaining-Community-Gardens-and-Community-Kitchens-in-NS-Dec2014-Final.pdf.

23 Vancity Buzz Staff, *City Supports Vancouver Incubator Kitchen,* Vancity Buzz, July 15, 2014. http://www.vancitybuzz.com/2014/07/city-supports-vancouver-incubator-kitchen/.

24 *PRESSO.* http://www.presso.it/.

25 Simone d'Antonio, *As Expo 2015 nears, Milan embraces the sharing economy,* citiscope, March 5, 2015. http://citiscope.org/story/2015/expo-2015-nears-milan-embraces-sharing-economy.

26 *Toronto Kitchen Incubator – FoodShare Toronto.* http://www.foodshare.net/toronto-kitchen-incubator.

27 *How it works – The Kitchen Library.* http://thekitchenlibrary.ca/how-it-works/.

28 For example, Bluebird CSA in Georgia (http://www.farm2uonline.com/bluebird/) provides an on-line hub where local producers gather their harvest.

29 Only for programs designed like the Casserole Club (http://www.casseroleclub.com/), which focuses on neighbours helping neighbours that are sometimes unable to cook for themselves.

30 *Incredible Edible Todmorden*, Landshare, March 4, 2011. http://landsharecanada.com/case-studies/incredible-edible-todmorden/.

31 Affordability can be increased through the unique financial agreements in which transfer of ownership (and payment) occurs over a period of time.

32 SNAP offers nutrition assistance to millions of eligible, low-income individuals and families, see: http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap

33 Jordan Ferguson, *Meal-Sharing Websites May Create Issues for Local Governments*, Best Best & Krieger LLP, November 11, 2014. http://www.bbknowledge.com/public-safety/meal-sharing-websites-may-create-issues-for-local-governments/.

34 Caitlin McGarry, *Move fast and break bread: The strange new world of meal-sharing*, TechHive, August 11, 2014. http://www.techhive.com/article/2462112/move-fast-and-break-bread-the-strange-new-world-of-meal-sharing.html.

35 SELC, *9 Urban Food Policies for Strong Local Food Systems*," Shareable, December 9, 2013. http://www.shareable.net/blog/9-urban-food-policies-for-strong-local-food-systems.

36 Irena Knezevic, "*Initiating and sustaining community gardens and community kitchens: A preliminary study in Nova Scotia*, Food ARC, December 2014. http://foodarc.ca/wp-content/uploads/2015/01/Initiating-and-Sustaining-Community-Gardens-and-Community-Kitchens-in-NS-Dec2014-Final.pdf.

# 3e.

# SHARED ENERGY

This Chapter provides an initial scan and analysis of the Shared Energy sector of the Sharing Economy. This is a lighter and less-indepth exploration and application of the sustainability filter than previous Chapters.

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There is no agreed upon definition of Shared Energy; however, Jeremiah Owyang, founder of Crowd Companies characterizes Shared Energy initiatives as: "bottom-up, democratized start-ups enabling people to collaborate among themselves for energy creation, storage, and sharing".[1]

Owyang also suggests that the Sharing Economy is "an economic model where technologies enable people to get what they need from each other - rather than from centralized institutions".[2]

Currently, Shared Energy projects primarily involve solar and wind, but they have also expanded to include energy efficiency. Decentralized energy systems such as District Energy and micro-grids also represent a shift to a more shared approach to energy.

Renewable Energy Cooperatives are a form of Shared Energy initiatives that pre-date web-enabled platforms, and have played a large role in the deployment of renewable energy. Sharing Economy models are scaling up their potential. For example, Germany, which has been a leader in the deployment of renewable energy, now has about 900 registered renewable energy cooperatives with 90% of members being individual citizens.[3]

## Shared Energy Approaches and Examples

Shared Energy initiatives are being launched by municipally-owned utilities, businesses and non-profit ventures through a range of approaches and arrangements. In most cases a web platform connects renewable energy producers to customers and investors. In some models an investment pool is created to finance up-front costs of renewable energy projects; in others customers participate through an ongoing payment agreement. A growing number of start-ups are using a Peer-to-Peer (P2P) approach where individuals pay for the installation of solar panels on another person's rooftop, with both parties receiving a bill credit using "virtual net metering".[4]

### EXAMPLES OF PEER-TO-PEER PLATFORMS IN NORTH AMERICA:

**US:**

- **Clean Energy Collective:**[5] www.easycleanenergy.com
- **Solar Mosaic:**[6] https://joinmosaic.com/
- **SolarShare:**[7] https://www.smud.org/en/residential/environment/solar-for-your-home/solarshares/
- **Sunshare:**[8] http://mysunshare.com
- **Tangerine Power:**[9] http://www.tangerinepower.com/edmonds
- **Yeloha:**[10] http://www.yeloha.com

**Canada**

- **Solshare Energy:**[11] http://www.solshare.ca/
- **Solar Share:**[12] http://www.solarbonds.ca/

In France, the Peer-to-Peer model expanded to other forms of renewable energy with the launch of Lumo, which offers solar, wind, hydroelectric and biomass projects.[13] Another French organization, Energie Partagée, raises funds from individuals to finance renewable energy and energy efficiency projects.[14] In the US, the privately owned Enlighted uses a unique financing model that connects investors with energy efficiency projects such as lighting retrofits and smart energy systems.[15]

Germany's Vandebron connects customers with independent renewable electricity producers. In their model, energy producers set the rates for the electricity they produce and Vandebron receives a flat monthly subscription fee.[16]

This approach ensure that the company is not incented to increase individual customers' consumption levels.

## How Can Shared Energy Advance Urban Sustainability?

We are at the cusp of a massive transformation in our global energy supply and distribution system, driven by the need to mitigate climate change, and increase local resilience and energy security. This transformation requires a shift from fossil fuels to a low-carbon economy. The Sharing Economy, largely through the proliferation of web-enabled tools, is accelerating the deployment of renewable technologies and in some cases energy efficiency initiatives.[17] These tools are being used to access new markets and connect the financial capital of individuals to Shared Energy projects.

The shift to a low carbon economy is likely to be characterized by a transition from large centralized energy plants and distribution systems to a decentralized approach featuring 'smart' micro-grids, Distributed Energy Resources (which are often wind and solar power), and District Energy systems.[18] Collectively this transformation represents a movement towards a model that facilitates a more shared approach to energy supply and can help foster the creation of compact, complete communities.

There are a range of sustainability co-benefits associated with a transition to renewable energy including green economy jobs and reduced vulnerability to energy shortages and price fluctuations in globally sourced energy.[19]

The Sharing Economy adds an equity benefit to the renewable energy transition by enabling participation by lower-income persons who would otherwise be blocked by cost and related structural barriers. For example, in 2008 the US National Renewable Energy Laboratory found that only 22 to 27% of residential rooftop area in the US is suitable for hosting on-site PV systems (due to structural, shading or ownership issues).[20] Therefore Shared Solar P2P platforms are opening up this opportunity to the often excluded segments of the population.

## RECOMMENDATIONS:

### How Can Local Governments Advance Shared Energy Initiatives

There are numerous examples of municipalities engaging in Shared Energy initiatives. Some have created municipally owned renewable or district energy projects, while others have partnered with a local business or non-profit to create or enable P2P marketplaces. Local governments can also help stimulate the renewable energy market through their own purchasing power or by taking shares in local cooperatives.

Many of the pioneering community Shared Energy projects were developed in partnership with local government operated utilities. In Canada, TREC Renewable Energy Co-operative partnered with Toronto Hydro (the municipal utility) to develop North America's first urban-based commercial scale wind turbine on the Toronto waterfront in 2002. TREC then launched SolarShare, which built and operates about 25 solar projects using a web-enabled platform to attract investors.[21]

One of the first community owned solar energy projects in the US was initiated in Ellensburg, Washington in 2003. In this project, the municipal utility used grant money to build a solar array which it then leased to existing utility customers.[22] Another early community solar array, and the largest of its kind for an extended period, was installed in 2007 by the Sacramento Municipal Utilities District (SMUD). In this project subscribers enter into a power purchase agreement with the utility and the solar power is credited to their electricity bill.[23]

Private and arms-length utilities may have a vested interest in selling higher quantities of energy to increase profits because they have "legacy investments" in fossil fuel infrastructure which they still need to recover.[24] The shift to Shared Energy models that are either delivered, or supported, by local governments can prevent this situation since local governments have broader sustainability objectives to achieve, such as climate change mitigation.

## Resources

**Websites:**

- Community Solar Hub: http://communitysolarhub.com/
- Shared Renewables HQ: http://www.sharedrenewables.org/
- Solar Gardens Institute http://www.solargardens.org/

**Reports:**

- *A Guide to Community Solar*. US Department of Energy, 2011. See: http://www.nrel.gov/docs/fy11osti/49930.pdf
- *New urban economies: How can cities foster economic development and develop 'new urban economies'.* European Union URBACT Programme, 2015. See: http://www.urbact.eu/sites/default/files/01_newurb-web.pdf
- *Shared Solar: Current Landscape, Market Potential, and the Impact of Federal Securities Regulation*. US National Renewable Energy Laboratory, 2015. See: http://www.irecusa.org/2015/05/shared-solar-sunnyside-up-avoiding-the-pitfalls-of-securities-regulation/
- Rifkin, Jeremy. *The German Energy Transition: The Internet of Things, Zero Marginal Cost Renewable Energy, and the Third Industrial Revolution.* 2015. See: http://tinyurl.com/oodpqug

1 Jeremiah Owyang, *How the Sharing and Collaborative Economy is impacting the Energy Sector*, Huffington Post Business: The Blog, April 24, 2015. http://www.huffingtonpost.com/jeremiah-owyang/how-the-sharing-and-colla_b_7128908.html.

2 Ibid.

3 Jenny Koutsomarkou, Emmanuel Moulin, Peter Ramsden, and Maria Scantamburlo, eds., *New urban economies: How can cities foster economic development and develop 'new urban economies'*, Saint Denis, France: URBACT, April 2015. urbact.eu/sites/default/files/01_newurb-web.pdf.

4 This latter model is often referred to as a solar garden. See for example: http://www.solargardens.org/

5 *Clean Energy Collective.* www.easycleanenergy.com.

6 *Home Solar Panel Loans.* https://joinmosaic.com/.

7 *SolarShares.* https://www.smud.org/en/residential/environment/solar-for-your-home/solarshares.htm.

8 *Community Solar Gardens.* http://mysunshare.com.

9 *Edmonds Community Solar Cooperative: Clean Power, Grown Locally.* http://www.tangerinepower.com/edmonds.

10 *Yeloha – The Solar Sharing Network.* http://www.yeloha.com.

11 *Solshare Energy – Community Owned Energy for BC.* http://www.solshare.ca.

12 *SolarShare – Invest in a brighter future.* http://www.solarbonds.ca/.

13 See: https://www.lumo-france.com/.

14 *Energie Partagée – Accueil.* http://energie-partagee.org/.

15 *Enlighted: Sensors designed to change everything.* http://www.enlightedinc.com/.

16 Ben Schiller, *The Sharing Economy Takes On Electricity, So You Can Buy Your Power From Neighbors,* Fast Coexist, September 30, 2014. http://www.fastcoexist.com/3036271/the-sharing-economy-takes-on-electricity-so-you-can-buy-your-power-from-neighbors.

17 Martin Rosenberg, *Solar Meets the Sharing Economy,* The Energy Times, April 21, 2015. http://tdworld.com/energy-times/solar-meets-sharing-economy.

and, Jeremy Rifkin, *The German Energy Transition: the Internet of Things, Zero Marginal Cost Renewalbe Energy, and the third Industrial Revolution,* 2015. http://www.bee-ev.de/fileadmin/Publikationen/Sonstiges/3_19_2015_Digital_Germany_For_March_26th_German_Energy_Transition_Dialogue_Event.pdf.

18 Saya Kitasei, *Powering the Low-Carbon Economy: The Once and Future Roles of Renewable Energy and Natural Gas – Worldwatch Report 184*, Worldwatch Institute, 2010. http://www.worldwatch.org/system/files/184_natural_gas_FINAL.pdf.

and Arnaud Bouillé, *Doing Business in a Low-Carbon World*, Ernst & Young, 2013. http://www.ey.com/Publication/vwLUAssets/Doing_business_in_a_low-carbon_world/$File/Plug_in_May_Doing_business_in_a_low_carbon_world_DX0175.pdf.

19 Union of Concerned Scientists, *Benefits of Renewable Energy*, UCSUSA.org. http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/public-benefits-of-renewable.html#.VdL8LflVhBc.

20 Jason Coughlin et al., *A Guide to Community Solar: Utility, Private, and Non-profit Project Development*, U.S. Department of Energy, Energy Efficiency & Renewable Energy, November 2010. http://www.nrel.gov/docs/fy11osti/49930.pdf.

21 *TREC Renewable Energy Co-operative.* www.trec.on.ca. And "SolarShare – Invest in a brighter future." www.solarbonds.ca.

22 *Ellensburg, Washington's Community Solar Project.* http://nwcommunityenergy.org/solar/solar-case-studies/chelan-pud.

23 Solar Gardens. *Largest Community Solar Projects.* December 28, 2012. http://blog.solargardens.org/2012/12/largest-community-solar-projects.html

24 Ben Schiller, *The Sharing Economy Takes On Electricity, So You Can Buy Your Power From Neighbors*, Fast Coexist, September 30, 2014. http://www.fastcoexist.com/3036271/the-sharing-economy-takes-on-electricity-so-you-can-buy-your-power-from-neighbors.

# 4.

# COMMUNITY SHARING

Community Sharing innovators offer hope to amplify the best aspects of the Sharing Economy. These innovators work at the local scale embracing sharing in the more traditional sense of the word, with many explicitly adopting practices that enhance sustainability goals such as waste or ecological footprint reduction, social connection, and affordable living, amongst others.

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**What role can local governments play to enable and help scale Community Sharing innovators who advance urban sustainability?**

This key question was explored by the LGSE's Community Sharing Working Group (CSWG), which formed as a result of discussion at "The Role of Cities in Advancing Sustainable Consumption" workshop co-hosted by the USDN and SCORAI in late October, 2014. Membership in the CSWG include local government representatives from Denver, CO; Flagstaff, AZ; Portland, OR; Vancouver, BC as well as the Center for a New American Dream who works with cities across North America on Community Sharing. The work of the CSWG was supplemented by additional primary and secondary research by the LGSE project team.

While the Community Sharing Working Group discussed a range of topics, the following five questions were key:

1. **Why should local governments enable Community Sharing?**
2. **How can local governments enable Community Sharing that advances sustainability?**[1]
3. **What are the most effective, cost-efficient roles for local government?**
4. **How can local governments measure the impact of Community Sharing on relevant city priorities?**
5. **How can local governments scale up the actions and benefits of Community Sharing innovators who are advancing sustainability?**

## BOX 4.1
## WHAT IS COMMUNITY SHARING?

Community Sharing is a subset of the broader Sharing Economy highlighted in the LGSE Project because of its particular relevance to local government. It includes a diverse set of individuals and organizations focused at a local or neighborhood scale that publicly align themselves with the Sharing Economy and some of its beliefs.

**The following are key traits that distinguish Community Sharing:**

- Focused at a local or neighborhood scale
- Use of digital technology to lower transaction costs is more modest and less sophisticated
- Varied structures - non-profit or informally organized models dominate but can also be for-profit, cooperative or social enterprise
- More emphasis is placed on in-person connections
- Non-monetized transactions are more dominant e.g. swapping and bartering
- Greater, explicit emphasis placed on meeting local needs and sustainability goals

**Some of the most common types of Community Sharing include:**

- Community swap meets of clothing, toys, crops, seeds, clothing, baby food, media and more[2]
- Community festivals, such as PorchFest
- Local lending libraries for tools,[3] clothing, toys,[4] seeds, cars
- Timebanking[5] - a reciprocity-based work trading system in which hours are the currency.
- Repair Cafes/Fix-It Workshops[6] where people bring broken appliances, clothes, computers and more to be repaired by volunteer 'fixers'
- Food-related sharing[7] such as food-buying clubs,[8] kitchen shares and community gardens.

Many of these are described in more detail in the Center for a New American Dream's Guide to Sharing.[9]

# Local Government Enabling Community Sharing

# Q1.

## Why should local governments enable Community Sharing?

The motivation for local government to enable and support Community Sharing will vary depend on the priorities of each city's elected officials, senior management, community and other stakeholders. While the LGSE Project uses "living within ecological means" as a first filter for prioritization, Community Sharing has benefits that cut across multiple dimensions of sustainability, so it's easy to link with, and act upon a range of city priorities.

### CLIMATE ACTION, WASTE REDUCTION AND SUSTAINABLE CONSUMPTION

In Portland, Oregon the motivation to start the Resourceful PDX[10] program which includes a focus on reusing, borrowing, sharing and repairing goods was linked to a 2009 Climate Action Plan with key goals by 2030 to: (1) reduce total solid waste generated by 25%; and (2) motivate all residents and businesses to change their behaviour in ways that reduce carbon emissions.

Under Portland's more recent Climate Action Plan, the Resourceful PDX program is an action in support of a new focus on Sustainable Consumption (see Consumption and Solid Waste (pp 89-98)[11] backed by a new consumption-based carbon emissions inventory – the first of its kind ever in a North American sustainability plan.[12]

### AFFORDABLE LIVING AND ECONOMIC NECESSITY

Flagstaff, Arizona based their "Be Resourceful"[13] program on Portland's but did so in response to a community priority around affordable living. Arizona Public Radio did a podcast series on the high cost of living in Flagstaff, called "Poverty with a View",[14] which drew attention to the issue. A 2015 study found that Flagstaff has the lowest hourly wages in the United States when adjusted for cost of living. Then local government staff noticed there was a really active re-use market in Flagstaff with multiple Goodwill and thrift stores, and re-use events being held by almost every type of community group - baby swaps, sport exchanges, school materials and uniforms and more. This was mirrored in the online world with high levels of activity on craigslist, and up to 18,000 people involved in various Facebook groups focused on buying, selling and bartering.

### BUSINESS AND WORKFORCE DEVELOPMENT

Fix-It Tech Clinics in Minneapolis are incubated by the City of Minnesota's IT Department in partnership with a range of partners including non-profit and educational organizations, private sector businesses and foundations.[15] The goals of the Clinics are:

- IT workforce development – students gain experience in tech support volunteering alongside IT professionals who together answer residents' tech questions, provide tips to maintain and protect personal devices, and provide hands-on technical repair.
- Raise awareness of technology programs: the event provides a venue to promote free digital literacy training resources, low cost computer and Internet options, local IT education programs, and IT careers.
- Community (and small business) education - offering hands-on technical experience that helps residents, including small business owners, with technical knowledge and repairs.

### HEALTHY, CONNECTED COMMUNITIES

The CSWG felt that priorities around healthy, connected communities could be an important leverage point in some places. We know, for example, that Seoul, South Korea's primary motivation to become a Sharing City was to restore community connections and rebuild trusting relationships.

Community Sharing has the strongest emphasis on in-person connection and the most explicit focus on building community and social capital [16] of any area and sector of the Sharing Economy. Evidence of this focus in Community

Sharing activities is mostly anecdotal and has not been widely measured, although there is some initial research to draw upon. Building relationships and community are, however, often explicitly stated objectives that influence Sharing Economy activities in Community Sharing. Consider the following examples:

- The Vancouver Tool Library is: "dedicated to taking a proactive and responsive approach to managing our organization, and adhering to the values of inclusivity, empowerment, community building, member participation, and sustainability in all that we do."[17] The VTL takes this mission so seriously that they designed their space to consciously encourage interaction between members and are seeking further to provide a workshop that facilitates further membership connection.[18] Similarly the Halifax Tool Library notes that "we need places to congregate socialize and learn" and the library "provides the opportunity for people to build new relationships as they learn how to build and repair their objects."[19]
- Community swap meets involve person-to-person interaction and often also consciously include potlucks food, music and crafting to promote social interaction. In Detroit, sharers combined a clothing and goods swap with a DJ, music and dance floor as well as opportunities for skillsharing and conversations on developing alternative currencies.[20] When swaps are facilitated through on-line platforms, there are usually efforts to encourage off-line interaction. For example, the volunteers on the food exchange team of the Portland Food Exchange "try to meet up for a few microbrews every couple of weeks to go over ideas. The Internet definitely has a place in all of this, it is so much more meaningful to talk to someone about the Portland Food Exchange while standing waist deep in a pumpkin patch!"[21]
- The mission statements and goals of community gardens often include building a strong sense of community and promoting community health. As the City of Kelowna's Community Gardens webpage states: "Community gardens help grow healthy communities".[22] Research confirms that community gardens do, in fact, build a sense of community, promote enhanced trust and social networks, and promote more healthy lifestyles.[23] A study of a Melbourne, Australia urban community garden called "Dig In" is representative of research findings in this area:[24]

  "benefits include increased social cohesion (the sharing of values enabling identification of common aims and the sharing of codes of behaviour governing relationships), social support (having people to turn to in times of crisis) and social connections (the development of social bonds and networks)."

Cities for whom addressing the creation of healthy, connected communities with enhanced social capital are priorities should view Community Sharing as a priority area.

## RECOMMENDATION:

Align Community Sharing with priority areas such as climate action, waste and ecological footprint reduction, affordable living, workforce development and building healthy, connected communities. This can help elected officials, key departments and staff to recognize the value of Community Sharing in order to build the necessary shared ownership, responsibility and funding for supportive actions.

# Q2.

## How can local governments enable Community Sharing that advances sustainability?

The LGSE Project is focused on helping local governments understand how the Sharing Economy can help their cities live within ecological means while also advancing related aspirations of resilience, equity, local economic prosperity and quality of life. So while Community Sharing can contribute to many city priorities, we are interested as a starting point in how it can contribute to the goal of living within ecological means.

Portland's Resourceful PDX program proves particularly instructive in this regard as it has been fine-tuned over time to focus consciously on areas that support actions to reduce carbon emissions, waste and consumption levels, while also advancing equity.

Resourceful PDX is a program designed to help the residents of Portland make simple changes in their everyday choices so that they consume in ways that save money, support the

community, conserve natural resources and allow people more time to spend with family and friends. It is focused on four key categories:

1. **Buy Smart**[25] – create memories instead of excess stuff by planning ahead e.g. tips, ideas and links to relevant local organizations, events and businesses in key areas of life and its transitions - food and health; holidays; back-to-school; having a baby, etc.
2. **Reuse**[26] – choose second hand, salvage and vintage or repurpose something old into a new creation e.g. tips on home remodelling using salvaged materials; links to second hands goods stores or reuse web platforms
3. **Borrow and share**[27] – cut down on clutter by borrowing, sharing, swapping and renting items e.g. community collection events; swap n plays; tool, kitchen and other local lending libraries
4. **Fix and maintain**[28] – extend the life of what you have with basic maintenance and repair e.g. Repair Cafes; blog entries with tips on buying shoes that be easily repaired and how to maintain them

All but the first category include specific examples that are part of Community Sharing yet the "Buy Smart" category is key because it encourages people to plan ahead so that they purchase less stuff or stuff that is made locally or more durably.

## BOX 4.2
## RESOURCEFUL PDX BUY SMART PROGRAM EXAMPLES

Blog entries for key life transitions and life areas:

- **Holidays –** how to give gifts of time, service, experience, local food or gifts made with re-used material
- **Back to School –** waste free lunches; setting up bike or carpools;
- **Food –** how to shop to reduce food package waste, join a bulk food buying club or Community Supported Agriculture (CSA)

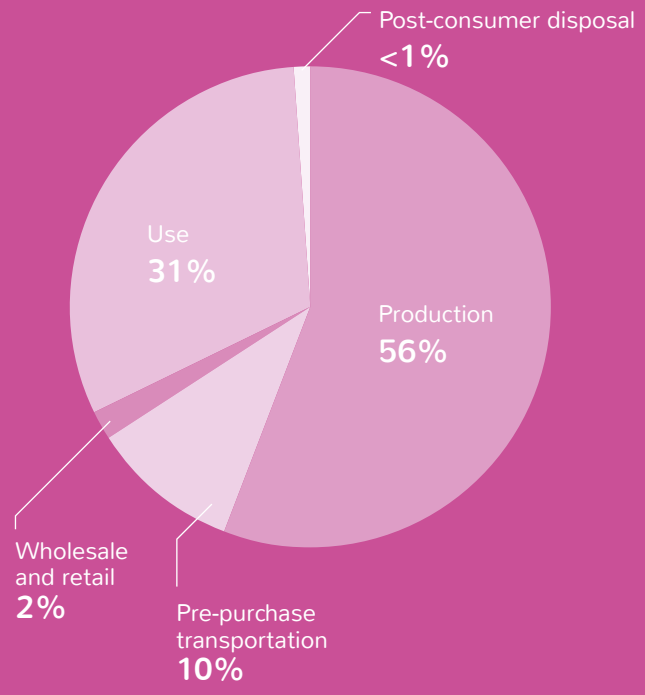
Buy Smart inventory:

- **Green Baby Guide –** website and book focused on how to save money and the planet when you have a baby.
- **SoKind Registry**[29] **–** create customizable online gift registries that include homemade gifts, charitable donations, secondhand goods, experiences, time, day-of-event help, and more.

Portland's 2015 Climate Action Plan demonstrates that their Buy Smart focus is a critical category needed to achieve absolute carbon reductions. Portland's lifecycle emissions chart illustrates (see diagram) that "more than half of all consumption-based carbon emissions are generated during the production phase of the lifecycle. The transportation and sale (wholesale, retail) phase adds an additional 12 percent. On average, 68 percent of a product's lifecycle emissions are generated before a consumer begins to use it."[30]

It is clear then that any focus on community sharing of goods needs to be complemented by an effort to reduce the production of new goods in order to contribute to deep carbon reductions.

## MAKING THE GOODS WE USE GENERATES THE MAJORITY OF THE EMISSIONS FROM CONSUMPTION




**Multnomah County consumption-based carbon emissions by lifecycle phases (2011).** Source: Portland Bureau of Planning and Sustainability.

## RECOMMENDATION:

In order to promote living within ecological means, local government can prioritize efforts to enable Community Sharing in areas that promote reuse, borrowing and swapping, repair and maintenance of goods – together with education that promotes buying less and smarter. Local governments can also link this to other city goals such as affordable living, workforce development and building healthy, connected communities.

# Q3.

## What are the most effective, cost-efficient roles for local government?

The majority of Community Sharing innovators are either informally organized grassroots organizations or non-profit organizations that rely significantly on volunteers and may have paid staff. This reality sparked questions in the CSWG such as:

- How can local government be supportive and enabling of Community Sharing without sustaining their organizational model?
- How can partnerships or agreements be formed when there are significant funding and human resource uncertainties?
- Should local government take on the role of incubating Community Sharing activities? Or is it the role of community innovators to initiate, with local government playing a support role?

Our answers to these questions draw from cities across North America. While each of these places enables Community Sharing with varied budgets and staff commitments, there are remarkable similarities in the key roles and approach taken by local government.

### 1. COMMUNITY SHARING INVENTORIES AND WEB PLATFORMS

A consistent role for local government to play is to inventory sharing assets and bring them together on a publicly accessible web platform. In order to lighten the load for local government, partnerships are a key strategy:

- An intern helped the Portland Bureau of Planning and Sustainability (BPS) with their sharing assets inventory, which included placement into the four program categories - Buy Smart, Reuse, Borrow and Share, Fix and Maintain. The inventory, combined with a blog about community resources, tips and ideas, was developed into a BeResourceful website placed on the BPS web platform. Due to issues with local government promoting selling specific local businesses, it was relocated to a separate web platform with BPS as one of three presenting partners. Renamed Resourceful PDX, it is now co-administered together with Chinook Book (who develop an app and book of sustainable local coupons) and the Oregon Chapter of the Reuse Alliance.[31]
- The City of Flagstaff conducted their own BeResourceful sharing inventory based on Portland's four program areas and set up a basic webpage on the city's web platform with a listing of sharing assets. Rather than focusing a lot of resources on the webpage, Flagstaff set up a Facebook page for the City Sustainability Program,[32] which has 4000 followers and provides resources for reducing consumption.
- Eugene, Oregon, set up a web resource that highlights their sharing assets and links with the help of the Center for a New American Dream, an American non-profit dedicated to improving well-being by inspiring and empowering all of us to shift the ways we consume. The City now manages and maintains the new web platform.[33]

### CHALLENGES AND SUGGESTED SOLUTIONS

- **Updating and maintaining the sharing inventory and web platform –** when start-up grants end, this becomes an ongoing cost so new approaches and partnerships are needed. Portland reduced their website administrative costs by partnering with two external organizations. Another option discussed in the CSWG was to partner with Sharing companies who have a small staff who could help with the inventory, although this would likely require an open source agreement.
- **Make the Sharing inventory more interactive and dynamic –** the City of Portland is currently exploring other options including a map or another interactive feature.

## 2.
## FUNDING, PROMOTING AND FACILITATING COMMUNITY SHARING

The following are three key roles that local governments have played in enabling Community Sharing:

- **Grant funding –** when Community Sharing innovators are getting started, or at a critical stage in their development, the infusion of some modest funds can make all the difference. For example, the North Portland Tool Library received grant funding over a two year period from the city and region of Portland in its early stages. Grant funding has been provided for other tool libraries, community gardens, MakerFaires, neighborhood gear swaps and more.
- **Promotion –** Community Sharing innovators may lack the means to promote their activities effectively so this another key role that local governments can play. Websites, blogs, event calendars, municipal publications, as well as social media have all been used by local governments to promote Community Sharing events and ideas. The City of Flagstaff, for example, uses Facebook to talk about sharing and reducing consumption, posting articles about the Sharing Economy, and putting out new ideas -- which frequently others will take and run with.
- **Facilitator and connector –** local government often has access to a range of resources and is linked to a variety of internal and external people and organizations that can help Community Sharing innovators. For example, Alicia Polacok, Residential Outreach Coordinator from BPS, sits on the steering committee of the Reuse Alliance Oregon and is integral to connecting city resources to the larger resuse community through the organization. BPS uses the role of facilitator and connector effectively also with the neighborhood coalition offices. Rather than coordinating clean-up events themselves, they partner with the neighborhood coalition offices, providing links to valuable resources and helping with promotion.

## 3.
## REPAIR WORKSHOP OR FIX-IT CLINICS

Another common role for local governments concerned with sustainability is to support repair workshops or fix-it clinics. The roles taken, however, vary significantly, from partnering and promoting to actually incubating and coordinating.

### CITY OF PORTLAND - PARTNER AND PROMOTE

Portland's role is to partner and promote Repair Cafés but not to coordinate them. Repair PDX - a volunteer run grassroots organizations - coordinates the repair events, maintaining a pool of volunteer fixers and list of interested host partners. BPS promotes Repair PDX and their repair events through the Resourceful PDX website, event calendar, and related publications. Alicia Polacok, Residential Outreach Coordinator, who plays this role also volunteers on her own time for Repair PDX where she helps with volunteer organization, event registration and set up.

Using this approach, Portland has had many successful Repair Cafés that involve volunteers who fix bikes, computers, small appliances, clothing or niche stuff. Space to host the events has never been an issue. They're hosted at tool libraries, cafe, coffee shops, community centres, bike shops, realtor offices, schools, and seniors' centers in different parts of the city.

### CITY OF FLAGSTAFF - INCUBATE AND COORDINATE WITH A PARTNER

The City of Flagstaff has incubated and coordinated Fix-It Clinics using a partnership approach. The Clinics are held at LocalWorks - a community workshop offering equipment for its members to design, construct, and improve creations. They have also involved STEM - a non-profit dedicated to promoting literacy and businesses in science, technology, engineering and math. The City issues a call for volunteers who can fix things and local businesses donate food for the volunteer fixers. Through the Fix-it Clinics, community members learn how to extend the life of their items and reduce landfill waste. At the event, City staff provide recycling outreach and run a kid's station where children can deconstruct items that cannot be fixed into their recyclable components. Future events will engage Habitat for Humanity ReStore to find broken items to be fixed and provide free workshops on skills like basic clothing repair.

## Challenges and Potential Solutions

Volunteers get busy and things fall through - a challenge for Portland, for example, is that Repair PDX is totally volunteer-based and sometimes people get busy and things fall through. Repair PDX is a grassroots organization and not a non-profit so Portland can only help through providing some staff time and is not able to fund them directly. Potential solutions include:

- Connect the grassroots Community Sharing organization with someone to help them gain non-profit status so that they are eligible for some local government and other funding.
- Consider other models such as those taken by Flagstaff, AZ, and Hennepin County, Minnesota, where local government staff play a role in coordinating Fix-It Clinics.

Lack of funding for Fix-It Clinics or Repair Workshops - Approach ifixit.com - a wiki-based site that teaches people how to fix almost anything - because they may be willing to help fund other fixing events around the nation.

## CITY CASE
## HENNEPIN COUNTY, MINNESOTA – COORDINATING FIX-IT CLINICS

While the City of Portland has had success supporting volunteer-led fix-it workshops by serving as a partner and promoter, there are challenges with depending on community volunteers as they are not always able to commit to delivering the workshops and events can be cancelled. Recognizing the value of goods repair to their waste management goals, the local government of Hennepin County, Minnesota, takes a different approach -- it serves as coordinator of monthly Fix-it Clinics.[34]

### THE INSIDE STORY

Nancy Lo, who is the Environmental Partners Coordinator with the Department of Environment and Energy's Waste Reduction and Recycling Unit, spends about 25% of her time coordinating Fix-it Clinics. She sets up the dates and locations for an ongoing stream of monthly Clinics, helps with some Web and other promotion such as short radio pieces, and leads set-up and takedown at each event. "The volunteers are the heart of the program," Lo says.

In addition to paying for Nancy's time, the only other cost to the County is for snacks and refreshments. The Clinics are held in places such as libraries, city buildings and churches so there is usually no building rental cost.

For Hennepin County, the Fix-it Clinics offer a good return for time and money invested. They have a consistent set of workshops with a regular group of volunteer "fixers." Because there are many possible dates, residents can wait for workshops that are closest to home or fit their schedule.

How does the County track the impact? Because Lo's job is focused on waste reduction she weighs everything that comes into the workshop – broken hair dryers, bread machines, toys, DVD players, clothes with broken zippers and more. And then she conducts a simple survey to track participant satisfaction and to determine what was wholly or partially repaired. This allows her to estimate the number of pounds of waste diverted and collect a stream of comments from happy, grateful people in informal participant surveys. Participants have said:

***"What a fabulous concept. It's cool to be surrounded by such a collection of clever people."***

***"It was wonderful. I have more confidence that I can fix things myself. (Score!)"***

***"It's great! Keep things out of landfills and saves money!"***

***"Thank you so much for providing this service!"***

As Nancy Lo says: "you can make a really good case in support of the Fix-It Clinics. They're low cost, reduce waste, promote community engagement – and foster such good, positive feelings."

### RESULTS TO DATE

Since starting the monthly fix-it clinics in September of 2012, just fewer than 2,000 people have attended bringing with them 2,956 items to be repaired, of which 73% were successfully fixed. The final outcome: 13,946 pounds of waste were diverted from the landfill – all while creating community and teaching basic repair skills.

### CHALLENGES

The most frequent question Nancy Lo is asked by other city government staff and interested stakeholders is 'what if you get sued?' The County developed a liability waiver that all

volunteers and Fix-it Clinics attendees must sign. As Lo points out: "When you come to a Clinic, you see how incredibly happy people are, and it's hard to imagine anybody suing."

See the Appendix in this Roadmap for copies of the Hennepin County Fix-it Clinic Release Form, Informed Consent Form and Sample Participant Survey.

**KEY FACTORS FOR SUCCESS**

- Low cost approach with impressive results
- Simple survey to track waste diverted and participant satisfaction
- Staff (Nancy Lo) dedicated and passionate about waste and with a flair for working with people effectively
- A focus on FUN too!

**TO READ MORE**

http://www.hennepin.us/fixitclinic.

http://www.twincities.com/ci_23404870/at-free-fix-it-clinics-st-paul-volunteers.

# Q4.

## How can local governments measure the impact of Community Sharing on relevant city priorities?

All local governments must justify the use of local government resources – and it is no different with Community Sharing. The City of Portland, for example, must show how its Resourceful PDX program moves the dial on climate, lowering waste and consumption while advancing equity. But how can they know if somebody goes to a 'swap n' play' event to swap toys and childrens' clothes and consumes less as result? Many cities who are members of the Urban Sustainability Directors Network (USDN) are also concerned with climate action and related goals such as waste or ecological footprint, in addition to goals for equity, community connection, affordability and more.

Many ideas were discussed by the CSWG and the following were put forward as key recommendations.

## RECOMMENDATIONS:

- Incorporate measurement into Community Sharing pilots
- Engage Community Sharing innovators in measurement efforts

- Intentionally incorporate measurement into Community Sharing pilots - when local governments get involved with enabling Community Sharing, set it up as a pilot that involves establishing an intentional baseline at the beginning, do the pilot and then measure desired benefits in terms of reduction of waste and carbon emissions, enhancing social connections, equity, fun and other important city priorities.

  One idea discussed among the CSWG was an analysis of other successful behaviour change measurement tools. For example, the Washington DC's Going Green Today[35] approach uses an on-line tool to measure whether 10% of the population shifted their behaviour by at least 30%.

  Measurement can also be relatively simple and low cost yet still remarkably effective. Consider how Hennepin County weighs all of the goods to be fixed before a Fix-It Clinic and then uses a simple 10 question survey to determine how many goods have been partially or wholly repaired to estimate waste diversion, plus asking questions about participant satisfaction (See Appendix for the sample participant survey).

- Engage Community Sharing innovators in measurement efforts - for example, some tool libraries send out an annual survey to their members. A discussion with the tool library could result in the addition of a few additional questions asking members whether they purchased fewer tools or used the tools to undertake green projects. The responses could lend valuable information to local governments and help justify their efforts to enable tool libraries and related efforts like fix-it workshops.

- Review the recent USDN report - "Sustainable Consumption and Cities: Approaches to Measuring Social, Economic and Environmental Impacts in Cities"[36] which summarizes key literature and case studies and presents approaches for understanding and quantifying the scope and impact of sustainable consumption activities, including a focus on repair, reuse and rental of household goods and clothing; as well as tool-lending libraries.

# Q5.

## How can local governments scale Community Sharing that advances sustainability?

The CSWG had broad discussions about how to advance sustainability through Community Sharing and narrowed recommendations down to the following short-list deemed to have the greatest potential.

### RECOMMENDATION:

Shift the focus from individual to community-based behaviour change.

The CSWG felt that focusing on individual change is not sufficient to scale up Community Sharing to a level that would reduce consumption to advance sustainability. There was also a question about whether focusing on behaviour change at a broader scale – such as geographically based communities and communities of interest– could use local government time and resources more efficiently.

There are many communities that are physically based such as neighbourhoods, apartments, offices and universities as well as communities of interest such as people getting married or having a baby who have shown engagement in Community Sharing and have a natural potential for expansion. The following three examples serve to show how local governments might play a role in enabling Community Sharing in a manner that is potentially more efficient and scaleable:

- **Universities –** students lack the funds to purchase high quality new goods and may only need goods for relatively short periods of time. Sadly, many purchase cheap goods that wear out and end up in the waste stream quickly. Reuse, sharing and borrowing targeted at specific university campuses can meet student need for inexpensive goods and address a natural market.

BPS is exploring this potential by bringing together Portland State University who have a re-use room, together with the nearby SoMa EcoDistrict and the Neighborhood Coalition. The question they are exploring - is it possible to scale use of the re-use room by linking it to university residences and possibly multi-family buildings? And, if so, what role does each entity play in making this a reality?

BOX 4.3

### UK SPACE FOR GROWTH

A recent report from November, 2014, entitled "Unlocking the sharing economy: An independent review," written by Debbie Wosskow,[37] CEO of the peer-to-peer travel Club Love. Home. Swap and founder of the Collaborative Consumption European network, highlights an innovative program undertaken by the UK government to share underused office space:

*"The government has taken a lead in sharing underused office space through the Space for Growth programme, which I commend. This allows start-ups, SMEs, charities and social enterprises to use empty government-owned space for free. This makes the most of what would otherwise have been wasted space, at the same time as helping businesses and social enterprises cut costs and grow."*[38]

While Wosskow recommends that the UK government simplify the registration process by reducing the security vetting in less sensitive government buildings and by improving the online booking, she also notes:

*"local authorities should follow the example set by central government and share their spare spaces with local residents, communities and businesses. This could either be through the existing Space for Growth website, or through their own online presence."*[39]

- **Multi-family buildings –** particularly larger ones such as high-rises have a significant number of people in close proximity who can share kitchen gadgets, tools, camping gear and more.

Could Vertical Living Libraries (VLL) be brought into new multi-family building developments drawing from the approach taken with carsharing agreements?

A Vertical Living Library (VLL) as defined and proposed by Ryan Dyment, Co-Founder of the Toronto Tool Library, is a "shared space within a condominium or housing development where tenants can access a wide range of hand and power tools -- including high-powered vacuum and steam cleaners, ladders, power drills, hand tools, hosting equipment (folding tables and chairs for example), and entertainment products."[40] A VLL would be accessible to all members of a housing development and products could be signed out using a digital application located on a tablet inside each dwelling unit. Products could be borrowed for up to 24 hours (depending on demand) and items would be maintained on a regular basis or on-demand by VLL staff.

The VLL addresses several issues experienced by city dwellers including limited storage space and the high cost of owning and maintaining items used just a few times each year. Developers could realize green marketing potential by incorporating VLLs and might even be given some relaxation on permit or other city requirements for showing a commitment to meeting goals of reducing waste, ecological footprint and/or consumption.

A first step towards incorporating VLLs into new multi-family development would likely be a pilot to test the waters and gather statistics on the positive benefits. Given the cost savings to residents of sharing a range of VLL goods, a pilot involving affordable housing developments on City-owned lands could be a good opportunity.

- Communities linked to major life transitions – Communities are not just physically based but can also be communities of common interest. One of the success factors of Portland's Resourceful PDX program is the way in which it ties behaviour change to major life transitions such as having a baby, buying a house, or getting married. Portland sees a potential effective next step as tapping into transition messengers -- midwives, wedding planners, real estate agents through their associations – and equipping them with good messages and then supporting them to engage their clients and communities.

## RECOMMENDATION:

Link municipal infrastructure, particularly public space and libraries, to the needs of Community Sharing innovators.

The need for affordable space is a common need expressed by Community Sharing innovators. Whether it's space for a new workshop for a tool library, somewhere for a community kitchen to locate or affordable space for hosting Board and volunteer meetings.

Local government has a history of providing space for Community Sharing. Some of the longest running tool libraries are located in public spaces - community centres, old firehouses and public libraries. Community kitchens can also be found in community centres. There are community gardens located in parks, at community centres and in vacant lots.

Public libraries received special attention as a topic of discussion in the CSWG. Could libraries extend beyond lending books to also lending seeds, toys, kitchen gadgets, tools and more? With branch library locations peppered throughout city neighborhoods, libraries offer the local access deemed very important in expanding sharing:

> *"People don't want to travel far in order to borrow, preferably staying within their own neighbourhood."*[41]

The role of public libraries in enabling Community Sharing appears poised for growth. The Center for a New American Dream was an early leader in recognizing the scaleable sharing potential of libraries. They conducted a CommunityShare workshop in November, 2013, with over 50 librarians from Maryland inviting representatives of tool and seed libraries and more. Many ideas were discussed from making meeting rooms available or convening community stakeholders interested in a sharing project, to possibly modifying a community database into a time bank database.

The largest interest was in holding swap events at libraries, because they are deemed an easy entry point. For example,

at Calvert Library, the librarians developed a SWAP team that has partnered with community organizations to host and promote swaps for baby stuff, flower bulbs, seeds, tools and kitchen items, back-to-school gear and many other items. [42] Since this initial meeting in 2013, Maryland libraries continue to explore new Sharing ideas and to branch out further in the activities they are considering.

The Toronto Public Library has followed Maryland's lead and recently entered into a partnership with the Toronto Tool Library (see Power Tools Now Available at Toronto Public Library in this chapter).

## RECOMMENDATIONS:

Link underutilized local public space including community centres, libraries, parks, institutional buildings and more with the needs of Community Sharing.

Local governments in North America can consider adopting a more systematic, on-line approach to sharing space for Community Sharing innovators (as well as non-profits, social enterprise and SMEs advancing local sustainability goals) modelled on the UK Space for Growth programme.

### BOX 4.4
### POWER TOOLS NOW AVAILABLE AT TORONTO PUBLIC LIBRARY

As a result of a new partnership with the Toronto Public Library (TPL), the Toronto Tool Library (TTL) opened a third branch in the Downsview Public Library Branch in North Toronto in April, 2015.[43] While there is a tool library located in the Berkeley Public Library in California, this is the first such collaboration in Canada -- and could be a sign of things to come given the potential mutual benefits.

Housing its newest division at a public library branch is seen as a big step by the Toronto Tool Library in terms of expanding public awareness and access. For a cost of $50, anyone can join the new branch in order to access a wide range of hand, power and gardening tools. Members of the TPL receive a $5 discount on the TPL membership rate. Memberships from the new branch are expected to cover the TTL's operational costs, including a part-time salary and rent with the possibility of a small profit by year end.

The new TTL branch is seen as a positive addition by the TPL who are embracing innovation and technology more broadly. For example, the TPL have Digital Innovation Hubs at three branches that provide free access to technology and training such as 3D printing and new design software. They also hosted a Maker Faire / Festival at the Toronto Reference Library in the summer of 2014 that attracted 10,000 people.

For the Downsview Branch, the TTL was seen as a particularly effective way to reinforce their role as a community hub and boost membership of those in their late 20s and early 30s, and a review of new library memberships suggests that this is happening. The library already reduces the cost barrier of access to media and information so doing the same for tools – especially those with prohibitive costs – is as a logical extension of their mandate.

The new TTL branch is part of a one year pilot that allows both the TTL and the VTL to test it out. The pilot is low cost and minimal risk for the TPL. The TPL receives rent from the TTL, which is located in a secondary staff room which was seldomly used. The TTL took on the renovation of the space using their own tools and volunteers.

For the TTL, locating at the Downsview Branch represents a unique expansion into a suburban location, where people are less familiar with tool libraries and the Sharing Economy in general. As a result, they anticipate it will take them more time to get out the word out. Fortunately they have some grant money from the Ontario Trillium Foundation that includes a modest marketing budget.

If the pilot is successful for both parties, the new Downsview TTL could prompt potential expansion to more public library branches. With over 18 million visits in to the Toronto Public Library in 2013 – and over 70% of Torontonians using the public library – this has potential to scale up TTL's activities and boost its waste reduction potential significantly both in terms of using existing space and lowering the need for people to buy their own tools.

Our discussions with LGSE advisors suggest that the willingness of libraries to embrace Sharing Economy opportunities can vary significantly. Those libraries who are interested in innovating, proving their value, boosting membership – or simply interested in adding more to their offerings – show the greatest interest.

## RECOMMENDATION:

Explore how to scale Community Sharing into neighbourhoods of varied compositions.

The motivations for Sharing may change depending on the makeup of neighbourhoods, varying in urban form, income levels, age profile and ethnocultural composition. More information about the motivations of people to share based on different personal characteristics would help programs such as Portland's Resourceful PDX understand how to scale their efforts into neighbourhoods of varied compositions.

There is very little research on people's motivations to engage in Community Sharing beyond analyzes focused on age. Research undertaken by the Center for a New American Dream is one exception. In 2014, they conducted a national survey that found that, not surprisingly, "millennials make use of the Sharing Economy services at more than double Baby Boomers and Gen Xers - and are more interested in expanding their sharing practices."[44]

A second finding worthy of further exploration is that non-white Americans are interested in sharing more than white Americans. The specific reasons for this are unclear and the means through which to tap into that motivation requires further exploration.

## RECOMMENDATION:

Provide facilitative partnerships or seed funding to add or enhance web platforms to support Community Sharing.

A major reason for the scaling of the broader Sharing Economy is that information technology has made sharing easier, more convenient and less costly. Information technology has historically been used much more modestly by Community Sharing innovators and, in some instances, is shunned for fear that it might erode the ability to build new relationships and enhance social connection.

Local government could potentially assist Community Sharing innovators through facilitative partnerships or seed funding to add or enhance existing web platforms. This can enhance the ease and convenience of sharing at the community level. Libraries with their already sophisticated web catalogues and related expertise are obvious partners with entities such as tool libraries to provide assistance or even to bring tool library inventories into their existing web catalogue systems.

## RECOMMENDATION:

Help Community Sharing innovators get better organized and/or networked.

The largely volunteer nature of Community Sharing entities can make it difficult for local governments to engage with them effectively. They may not have a consistent contact person, lack a clear or consistent mandate, have regular meetings, or have an organizational structure that allows them to receive grants. Volunteers may wane in their engagement over time.

Local governments can help build the capacity of Community Sharing innovators in a number of ways such as:

- linking them with an agent to help them acquire non-profit status;
- providing grants to hire a part-time person or seek advice on critical tasks including building / organizing their volunteer pool, transitioning leadership, and developing effective operations; and
- providing a grant, and potentially some input, into the forming of an effective local Community Sharing Network.

One idea discussed at the CSWG was to expand the Center for a New American Dream's Community Share workshop process with a second phase to help Community Sharing innovators form an effective network structure. The Community Share workshops help local governments engage with local sharing actors in order to develop an inventory of local sharing activities and actors and related web platform.

### BOX 4.5
### TOP 5 CHALLENGES TO SCALABILITY FOR COMMUNITY SHARING INNOVATORS

Community sharing innovators across Canada consistently cited the following five challenges to growing their organizations in interviews conducted in Vancouver, Calgary, Winnipeg, Saskatoon, Toronto, Montréal and Halifax. These innovators are individuals instrumental in the development of sharing activities in their communities such as tool libraries and maker spaces.

1) **REGULATIONS OFTEN LACK FLEXIBILITY**

While community sharing organizations did not mention any reticence on the part of municipal governments to support their projects in theory, they often encountered difficulty complying with regulatory requirements, which they found to be overly rigid or cumbersome.

**EXAMPLE:** Maker spaces often fall outside of standard zoning definitions, particularly because light industrial areas are generally not permitted to draw more than a very few patrons. Maker spaces would benefit from flexibility in terms of zoning bylaws.

2) **INFORMATION SHARING HAPPENS SECTOR BY SECTOR**

While specific community sharing sectors share information readily (i.e., the national tool library listserv), information has not spread as easily amongst sharing organizations offering products or services across different sectors (e.g., mobility, spaces, goods, food, energy, community sharing). The lack of connectivity across sectors of Sharing Economy activities can lead to missed opportunities to share experiences and integrate innovations across the Sharing Economy.

3) **ORGANIZATIONS ARE HIGHLY LOCALIZED**

Particularly in the Canadian context, sharing organizations operate in response to unique local needs and may not see opportunities to scale across to other neighbourhoods or undertake activities at a regional or national scale.

4) **ORGANIZATIONS EMPLOY DIFFERENT BUSINESS STRUCTURES**

Even organizations offering the same service often have significantly different structures and governance, which can add complexity to collaboration efforts and to common strategies.

**EXAMPLE:** The tool libraries in Vancouver, Calgary, Toronto, Montreal and Halifax all have different structures - a consumer co-operative, a program within a neighbourhood community association, a project of an environmental NPO in partnership with the public library, a solidarity co-operative, and a non-profit society, respectively.

5) **ORGANIZATIONS HAVE LIMITED ACCESS TO TRADITIONAL FINANCING**

As dictated by their organizational structures, community sharing organizations have access to different pools of funding for start-up and growth. Some structures lend themselves better to revenue-generation, while others may allow more community involvement in decision-making.

**EXAMPLE:** Co-operatives rely on member-equity and grants from more established co-operatives. Non-profit societies have employed crowdfunding initiatives, but often struggle to maintain adequate operating capital.

BOX 4.6

### TOP 5 MOTIVATIONS OF COMMUNITY SHARING INNOVATORS

Interviews conducted with community sharing innovators in Canada found the following five forces motivate the individuals and organizations involved. The responses suggest regional differences in focus that would benefit from further study.

1) **DESIRE TO BUILD COMMUNITY**

**EXAMPLE:** In rapidly developing urban Calgary, Alberta, building community connections and addressing isolation among new immigrants was cited as the most important goal of the Calgary Tool Library and their programs.

2) **NEED TO BUILD "HEALTH EQUITY"**

**EXAMPLE:** Innovators at Station 20 West in Saskatoon, Saskatchewan have developed their sharing economy initiatives from their work building "Health Equity," addressing the role access to services plays in public health.

3) **RESPONSE TO EMPLOYMENT REALITIES**

**EXAMPLE:** The Social Enterprise Centre in Winnipeg, Manitoba has arrived at their community sharing innovations with the aim to grow employment and training opportunities in their community.

4) **CONCERN FOR ENVIRONMENTAL IMPACT**

**EXAMPLE:** The Institute for a Resource Based Economy which runs the Toronto Tool Library in Toronto Ontario was in large part motivated as a response to environmental degradation and climate-change.

5) **THE BUSINESS CASE**

**EXAMPLE:** Sharing economy advocate and collaborativeconsumption.com curator Lucy Gao from Toronto, Ontario was initially driven by the rational business case for community sharing.

# Conclusions

Community sharing with an emphasis on re-using, borrowing and swapping, repair and maintenance of goods – combined with educational efforts to promote buying less and smarter – can help local governments address the interrelated goals of reducing waste and consumption while advancing more affordable living and enhancing social connections.

Local governments can enable Community Sharing through supporting the creation of an inventory of shared assets, developing web pages and / or promoting events and ideas, and acting as a facilitator and connector. These roles can require a modest allotment of a portion of a staff person's time or they can become a program with dedicated staff such as the Resourceful PDX's program of the City of Portland Bureau of Planning and Sustainability.

Fix-It Clinics are one example where local governments may consider taking an active coordination role given the positive waste reduction, community building and "happiness" outcomes in return for a modest commitment of resources.

There are many opportunities for local governments to scale Community Sharing in a manner that makes potentially more efficient use of local government resources than

focusing on individuals. They include:

- Linking municipal infrastructure, particularly public space and libraries, to the needs of Community Sharing innovators. This was deemed to be a highly manageable role for many local governments that could be scaled by modeling programs such as UK Space for Growth.
- Shifting the focus to partnering with community entities such as universities, churches, senior centres and multi-family buildings who have the capacity, resources and captive audiences interested in sharing community goods.
- Tapping into the associations representing life transitions -- midwives, wedding planners, real estate agents -- and arming them with good messages and then supporting them effectively.
- Exploring how to scale Community Sharing into neighborhoods with varied age profiles, income levels and ethnocultural compositions.
- Supporting Community Sharing innovators in enhancing the role of web platforms for their transactions in order to increase the ease, convenience - and scalability - of sharing assets.
- Supporting Community Sharing innovators in their efforts to become more organized and/or networked so that they have more capacity to reliably engage and partner with local government.

The CSWG recommends the development of a pilot project to explore promising area(s) to scale Community Sharing as listed above linked to an intentional measurement approach. The pilots could include outreach and dialogue with other cities in North America in order to consider the challenges and opportunities of transferring lessons learned. Ideally, the pilots should not only consider the role of local government but also consider how to foster supportive policy at higher levels of government, and in conjunction with relevant non-profits and private sector entities.

## Resources

- Center for a New American Dream – Webinar: How to Start a Tool Library – https://www.newdream.org/resources/webinars/webinar-start-a-tool-library
- Center for a New American Dream – National Poll Analysis - Center for a New American Dream - https://www.newdream.org/resources/poll-2014; https://newdream.s3.amazonaws.com/19/d9/7/3866/NewDreamPollFinalAnalysis.pdf

1 Here we refer to the LGSE emphasis on local sustainability that uses living with ecological means as a first filter and then prioritizes Sharing activities higher that also achieve additional benefits such as advancing equity, prosperous local economies and improving quality of life.

2 *How to Throw a Community Swap Meet.* http://www.shareable.net/blog/how-to-throw-a-community-swap-meet; "How to Stage a Media Swap." http://www.shareable.net/blog/how-to-stage-a-media-swap; *"How to Throw a Toy Exchange."* http://www.shareable.net/blog/how-to-throw-a-toy-exchange; "How to Host a Seed Swap." http://www.shareable.net/blog/how-to-host-a-seed-swap.

3 *How to Start a Tool Library.* http://www.shareable.net/blog/how-to-start-a-tool-library.

4 *How a Denver Toy Library Has Helped Kids Share for 35 Years.* http://www.shareable.net/blog/how-a-denver-toy-library-has-helped-kids-share-for-35-years.

5 *Just in Time."* http://www.shareable.net/blog/just-in-time; *"How to Share Time Through Timebanking."* http://www.shareable.net/blog/how-to-share-time-through-timebanking.

6 *How to Start a Repaire Café.* http://www.shareable.net/blog/how-to-start-a-repair-café.

7 Many examples can be found in the Shared Food section of the LGSE Roadmap [Link to Chapter 3d].

8 *How to Save Big Money on Groceries by Starting a Food Buying Club.* http://www.ehow.com/how_2242161_groceries-starting-food-buying-club.html.

9 Center for a New American Dream, *New Dream Community Action Kit: Guide to Sharing*, 2015. https://www.newdream.org/programs/collaborative-communities/community-action-kit/sharing.

10 *Resourceful PDX.* https://www.portlandoregon.gov/bps/article/531984.

11 City of Portland, *Climate Action Plan*, (June 2015): 89 – 98. https://www.portlandoregon.gov/bps/article/531984.

12 A consumption-based carbon emissions inventory measures global emissions from the local consumption of goods and services by households, government entities, and also some business purchases.

13 *Be Resourceful.* http://flagstaff.az.gov/index.aspx?NID=3078.

14 *Poverty With a View.* http://www.npr.org/podcasts/381444807/poverty-with-a-view.

15 For a good discussion, see the Technology Literacy Collaborative, Minnesota's blog post on Fix-It Tech: http://www.tlc-mn.org/fix-it-tech-sustainable-device-repairs-for-minneapolis-residents/.

16 Social capital is the networks of mutual support, reciprocity, and trust that exist in communities.

17 *What is the VTL?* http://vancouvertoollibrary.com/?page_id=15.

18 Personal correspondence with Craig Massey, Vice President of the Vancouver Tool Library.

19 http://halifaxtoollibrary.ca/why-we-think-this-is-important/

20 http://www.shareable.net/blog/inside-detroit%E2%80%99s-spring-clean-swap-skillshare-and-dj-party

21 *Portland Food Exchange*. http://www.portlandfoodexchange.com.

22 Community Gardens. http://www.kelowna.ca/CM/Page2489.aspx.

23 Megan R. Herod, *Cultivating Community: Connecting community gardens and crime prevention*, https://uwaterloo.ca/environment-resource-studies/sites/ca.environment-resource-studies/files/uploads/files/ThesisCultivatingCommunityMay2012herod.pdf; "Role of community gardens," http://designinghealthycommunities.org/role-community-gardens/.

24 Jonathan Yotti'Kingsley and Mardie Townsend. "'Dig in'to social capital: community gardens as mechanisms for growing urban social connectedness." Urban Policy and Research 24.4 (2006): 525-537.

25 *Buy Smart – Resourceful PDX.* http://www.resourcefulpdx.com/buy-smart/.

26 *Reuse – Resourceful PDX.* http://www.resourcefulpdx.com/reuse/.

27 *Borrow and Share – Resourceful PDX.* http://www.resourcefulpdx.com/borrow-and-share/.

28 *Fix and Maintain – Resourceful PDX.* http://www.resourcefulpdx.com/fix-and-maintain/.

29 This is a program of the Center for a New American Dream that Portland links to which can be found at http://www.sokindregistry.org.

30 City of Portland, *Climate Action Plan*, (June 2015): 89. https://www.portlandoregon.gov/bps/article/531984.

31 *Reuse Alliance.* http://reusealliance.org/.

32 *Flagstaff Sustainability Program.* https://www.facebook.com/FlagstaffSustainabilityProgram.

33 *Neighborhood Sharing.* http://eugene-or.gov/eugenesharing.

34 *Fix-it Clinics.* http://www.hennepin.us/fixitclinic.

35 *Going Green Today*. http://www.goinggreentoday.com/.

36 Cascadia Consulting Group *Sustainable Consumption and Cities: Approaches to measuring social, economic, and environmental impacts in cities for the Urban Sustainability Directors Network* (2015) - http://usdn.org/uploads/cms/documents/usdn_measuring_consumption_project_files.zip

37 Debbie Wosskow, *Unlocking the sharing economy: An independent review*, www.goc.uk, (November 2014). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/378291/bis-14-1227-unlocking-the-sharing-economy-an-independent-review.pdf.

38 Ibid.

39 Ibid.

40 https://www.youtube.com/watch?v=mpDPjvoR030&feature=youtu.be; http://www.thestar.com/news/world/2014/09/29/hammering_home_the_logic_of_pooling_our_tools.html

41 The Sharing Project, *The Sharing Project: A Report on Sharing in Vancouver*. http://ponderresearch.co/projects/the-sharing-project/.

42 *Calvert Library Swap Events*. http://calvert.lib.md.us/swap.html.

43 http://toronto.ctvnews.ca/power-tools-and-paperbacks-now-under-one-roof-in-toronto-as-libraries-unite-1.2351733

44 https://www.newdream.org/resources/poll-2014

# 5.

# ADDRESSING DATA GAPS

There is a major gap in understanding by local governments about how the Sharing Economy impacts a range of city priorities. We found in the LGSE Project that this significantly inhibits local government interest in embracing the Sharing Economy. This chapter explores the current situation and what can be done to address data gaps more effectively.

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## 5.1
## THE CURRENT SITUATION IN TERMS OF SHARING ECONOMY DATA

- **While cities are keen for independent research, the rapid evolution of the Sharing Economy has meant limited time to prioritize efforts or commit funds.** This applies also to organizations[1] that represent cities and Foundations – many who still do not know much about the Sharing Economy.

- **When independent research is conducted[2], it is constrained somewhat by a lack of data from Sharing Economy companies.** For example, the recent study on ride-sourcing in downtown San Francisco by Berkeley's Centre for Transportation Research concluded:

  > "At present, ride-sourcing is a new and controversial subject, and access to industry and membership data for research purposes is limited. Since data on ride-sourcing market size and user characteristics are unavailable, we are unable to describe the sample relative to the larger user population."[3]

- **Sharing Economy businesses are generally reluctant to share data citing concerns about competitiveness and user privacy.** While the strongest reluctance is about sharing data on specific users and customers, there is some support for sharing anonymized, aggregated data in order to inform civic dialogue and understanding:

  > "I understand the issues about revealing specific data about specific customers…but the more a company can disclose the data on an anonymized, aggregated basis, they can use that to make a specific case that they are doing something good. We encourage our portfolio companies to be as public with their data as possible." (Fred Wilson, Union Square Ventures).[4]

- **There is also a tension in terms of stifling positive innovation by expecting Sharing Economy businesses to shoulder too much of the burden for data sharing or research, particularly start-ups.** There is a need to ensure that data is available without placing unrealistic expectations on enterprises, especially small and medium-sized businesses, to take the lead on addressing data gaps.

- **At the same time, the lack of data sharing inhibits innovation by local governments.** For example, the National League for Cities released a report in early 2015 called "Cities, the Sharing Economy and What's Next", highlighting the desire of cities to build transportation apps with integrated, real-time data showing all available options. Yet they concluded that:

  > "Until more cities negotiate data agreements with TNCs [Transportaton Network Companies]– and are able to collect, effectively analyze and integrate this data with other transportation information – such innovative applications will remain on the wish list."[5]

- **Data sharing is discussed predominantly in the midst of regulatory efforts, which are often time-consuming and expensive.** For example, there is an ongoing legal effort in California regarding the regulation of short term rentals that includes a question of whether hosting platforms should be compelled to share data with the city. And, if so, should it be in an aggregated, anonymized way or at an individual level? In another example, Uber has sued the City of Houston because the company does

not want to release records that would reveal how many drivers it has licensed in the city, who they are, and how the company operates in Texas.[6]

- **Consultants, academics and activists are 'data scraping' in order to mine publicly available data from Sharing Economy platforms in order to conduct research and discern impacts.**

  Data scraping is a technique in which a computer program extracts data from publicly available, human-readable output sourced from another program, in this case the program used to inform a Sharing Economy web platform. Data scraping is being used to conduct research about impacts, particularly for carsharing and short-term rentals by the following actors:

  - **Graduate students –** e.g. Simon Fraser University Urban Studies master's student Karen Sawatzky scraped the data from Airbnb's website to discern the number, type, and distribution of listings in the City of Vancouver in order to discern impacts on rental housing supply.[7]
  - **Consultants –** e.g. Urban Systems used geo-snapshots of Car2Go's publically available real time vehicle location information to determine the trip and system characteristics of one-way carsharing in Metro Vancouver.[8]
  - **Community activists –** e.g. Murray Cox who describes himself as a digital storyteller, community activist, and technologist scraps Airbnb listing data to develop Inside Airbnb. Inside Airbnb is a non-commercial set of tools that can help cities or individual neighborhoods answer questions about the numbers and location of listings, revenue generation, which hosts are running multiple listings, and more. [9]
  - **Data scraping consultants –** e.g. individual consultants like Tom Slee[10] and companies like Connotate[11] extract data from the web for a variety of clients, including newspaper, travel magazines, and local governments.[12]

Data scraping has limitations in terms of the data that can be accessed and the usefulness of research conclusions, which are acknowledged by those who use the practice. For example, consultant Tom Slee provides an extensive overview of his methods for Airbnb scraping, and their limitations and usefulness.[13]

- **There are a few cooperative data-sharing precedents between local governments and Sharing Economy businesses.**

  For example, the City of Los Angeles and Waze, the world's largest traffic and navigation app, have a data exchange agreement.[14] The impetus for the agreement stemmed from concerns that Waze could be used to track down and target police officers. Under the new agreement, several government departments are now giving Waze information about construction, film shoots, road closures and other events affecting L.A.'s streets. In return, the city receives real-time data about traffic patterns and roadway conditions, including reports submitted by users. Waze users also receive information about any hit-and-run accidents and child abductions.

## BOX 5.1
## MUNICIPAL KNOWLEDGE AND DATA SHARING

Data, and knowledge derived from best practices, inform many aspects of municipal planning from transportation to education. Unfortunately, data collection and analysis can be a challenge for budget-constrained governments. Not surprisingly, so too is the sharing of data between levels of government, and even between departments within a single governmental organization.

The US government has invested heavily in facilitating access to data across the country with the aim of increasing citizen participation, collaboration, and transparency.[15] One of the Federal Government's key initiatives is the creation of the Data.gov website, which provides access to Federal, state and local data, tools, and resources for research, building apps, designing data visualizations, and other applications.[15]

There are also many examples of governments partnering to increase access to data by building GIS (Geographic Information Systems) data sets. These data sets, and related analytical tools, provide useful information for decision making across the spectrum of municipal services. A few North American examples include:

- The **Colorado Data Sharing Network**, a project of the Colorado Water Quality Monitoring Council, is a web tool for organizations to share data with the public and with each other for the protection of regional water quality.[17]
- The **Alberta Municipal Data Sharing Partnership**, a **partnership of Alberta Municipalities**, facilitates the creation and sharing of standardized municipal GIS data for use in emergency, public and private industry applications throughout the Province.[18]
- The **Ontario Geospatial Data Exchange** provides a centralized sharing of spatial data within Ontario's public sector.[19]

# Q.

## How do we address data gaps more effectively?

This question is a challenging one to answer. Here are some ideas for further discussion and exploration:

### RECOMMENDATION:

**Prioritize Sharing Economy research and forge partnerships to fund this research.**

While research without data from the Sharing Economy is more limited in scope, it still provides valuable insights. A two-step approach could be more productive moving forward. First, local governments could come together through an appropriate convening organization or network, such as the Urban Sustainbability Directors Network (USDN), in order to discuss and prioritize desired Sharing Economy research as a group. Second, they could create partnerships with universities, research organizations, foundations, or bodies focused on Sharing Economy research to fund and conduct research efforts. The 2015 report on measuring sustainable consumption supported by cities through the USDN Innovation Grant is an example of this two-step approach.[20]

### RECOMMENDATION:

**Continue to rely on data scraping to understand Sharing Economy impacts.**

Despite its limitations, scraped data is being relied upon to inform policy discussion by local governments in the absence of data sharing by companies.

- Urban Systems recent study on one-way carsharing in Metro Vancouver is being used to inform discussions with Translink, the regional transportation agency, and local municipalities to consider their role in supporting point-to-point carsharing and how to ensure that it complements transit.[21]
- Research conducted by Tom Slee and/or Murray Cox has been relied upon in the recent (May 2015) report on the impact of short-term rentals (STRs) on San Francisco housing by the San Francisco Office of the Budget and Legislative Analyst.[22]

Many Sharing Economy companies do not comment on public scraping of their data, nor are they forthcoming in providing their own data to either support or counter data scraping conclusions. For example, Airbnb refused to provide anonymized listing data to the San Francisco Office of the Budget and Legislative Analyst when requested. When asked to comment on the New York City and Portland data published by Murray Cox of Airbnb replied:

> "We do not comment on public scrapes of our information, because, like here, these scrapes use inaccurate information to make misleading assumptions about our community."[23]

Despite these claims that scaped information is inaccurate and misleading, it is the only resort of local government in many instances to understand the impact on important city priorities. And, so, it is likely to be a practice that continues and possibly flourishes in the absence of data from Sharing Companies themselves.

## RECOMMENDATION:

### Require data sharing when negotiating regulatory arrangements for Sharing Economy activities.

More local governments should follow the leads of Seattle and Portland, which both required data sharing as part carsharing and ridesourcing regulatory agreements respectively. Their approaches are featured in Box 5.2 and Box 5.3 because we view this approach as one of the best ways to more effectively address the information gap about city impacts. Data sharing agreements not only hold the promise of enhancing local government understanding about local impacts and benefits, but accomplishes this in a way that is less time consuming and less costly than other options such as data scraping and protracted regulatory battles. The Portland story in Box 5.2 reveals that the costs for Sharing Economy Companies can also be lower than with other approaches.

### BOX 5.2:
### DATA SHARING PART OF 120-DAY RIDESOURCING PILOT PROGRAM – CITY OF PORTLAND

In April 2015, Portland City Council included a data sharing requirement as part of a 120-day pilot program to test new for-hire transportation regulations that make it legal for ridesourcing companies like Uber and Lyft to operate. This is the first time ride-sourcing companies Uber and Lyft have shared consumer data with any of the cities in which they operate. In return Portland is taking a lighter regulatory approach on issues such as insurance and the allowance of "price surging".[24] As Portland Mayor Charlie Hales was quoted as saying:

> "We're going to get origin and destination data, data about volume and geography. Where the hot spots are, what parts of the city have been getting neglected. Those are important social justice issues so we will keep a close eye on that."[25]

The pilot program includes some other guidelines for ridesourcing companies such as background checks for drivers and access for disabled passengers. It also experiments with deregulating the taxi industry by, for example, eliminating longtime caps on the number of taxi companies and vehicles allowed, plus removing the requirement for new taxi companies to get City Hall approval to get rolling.

The data gathered from the 120-day pilot will shape final recommendations for regulating private for-hire transportation including pricing to vehicles caps to permit policies to whether Uber should be required to dedicate vehicles to disabled riders. Whether the data received will also help ascertain impacts on vehicle miles travelled and transit usage is uncertain,[26] but certainly the combination of origin and destination data, together with date, time and duration of each trip should provide some value in this regard.

Is the partnership approach in Portland that includes data sharing a model for other cities? David Plouffe, Campaign Manager for Uber, is non-committal: "Maybe it is. Maybe it isn't".[27] But available costs show that Uber spent a lot less in their negotiations with Portland than elsewhere. Uber reported spending $68,000 in Portland compared to $600,000 for a voter referendum in Seattle and lobbyist contracts that range from a state total of $208,000 to $945,000. This cost assessment also does not include undisclosed legal costs which are not available, either from suing, or from the company being sued by various entities, including local government.

## RECOMMENDATION:

### Give Sharing Economy companies preferential access to city markets if they are willing to share relevant data.

One of the reasons that Sharing Economy companies are concerned about sharing data is that it may give their competitors a business advantage. But what if local governments offered preferential access to city markets – and where relevant a lighter, yet effective, regulatory approach – for those companies who agree to share data? This would then enable cities to address key risks and understand impact on important city priorities.

There are some Sharing Economy companies that recognize the strategic business value of sharing data with local governments. Ridescout is a free mobile app that allows users to find the quickest or cheapest way to travel to their

destination using real-time data on mobility options, including public buses and shuttles, bikesharing, carsharing, scooter sharing, taxi hailing, parking, cycling and walking, that vary from city to city.[28] At a mobility summit to launch the SUMC in October, 2014, Joseph Kopser, CEO of Ridescout stated his intention to share real-time data about the percentage of people travelling in different modes with cities.[29] As a result of this type of willingness to share data, local government and transportation agencies could view partnerships with Sharing Economy companies like Ridescout more favourably.

## RECOMMENDATION:

### Design simple data sharing systems at the local level based on "carrot and stick" models.

If data sharing is not happening, perhaps local governments could design their own systems at a local level. For example, local governments could make it illegal for STR operators to have an ad on a web platform without a valid permit. As a carrot, they could offer early registrants a free permit for a year (while possibly capping the level or implementing a registration deadline). At the same time, a fine (a "stick") could be leveled at those who do not have a valid permit. Similar to parking tickets, if the fine is paid quickly the amount drops. Pay it after the deadline and the amount rises at key points in time up to a maximum ceiling.

## RECOMMENDATION:

### Participate in, and ideally cultivate, collaborative opportunities to bring public and private sector leaders together to discuss various Sharing Economy topics including, but not limited to, data sharing.

When is a data sharing request going too far and stifling positive innovation particularly for start-ups? What kind of data is really critical to help local governments understand risks and impacts? Since regulatory battlegrounds are the place where requests for data sharing are most often played out, there is little opportunity for productive dialogue in order to explore mutually beneficial answers to these questions. There are, however, some examples of collaboration between public and private sectors worth paying attention to and, ideally, modelling more broadly:

- The **Shared Use Mobility Centre** (SUMC) based out of Chicago is one of the few entities in North America fostering collaboration – in this case to help connect the growing shared mobility industry with transit agencies, cities, and communities across the nation. It is led by Sharon Feigon, formerly the CEO of IGO carsharing, the non-profit organization that started car-sharing in the Chicago region. SUMC convenes regional mobility summits and workshops, webinars, and educational outreach that bring public and private sector leaders together to learn from each other and discuss effective ways forward. They also conduct and share research,[30] resources,[31] and event listings,[32] and collaborate with local governments to scale shared mobility by providing interactive tools, assisting with RFP development, and more.

- Outside North America, **Share Nederland**,[33] a knowledge and network organization in Amsterdam, believes the best way to advance the Sharing Economy is to facilitate collaboration between all stakeholders. They host roundtables on various themes such as mobility, insurance, banking, and trust, and involve a range of stakeholders such as Sharing Economy startups and companies, local government staff, tax authorities, knowledge centers, interest groups, media, and foundations.

### BOX 5.3:
### CAR2GO SHARING SURVEY DATA – CITY OF SEATTLE

What can local governments do while a broader effort to foster data sharing is underway? One of the recommendations of the recent USPIRG Innovative Technology Report (Feb, 2015) was to:

> "Require, when negotiating regulatory arrangements for these new transportation tools, that providers share their data with public officials, who can then better integrate these services into their planning."[34]

Similarly the CarSharing Association states that they are:

> "Supportive of new mobility providers sharing their data with cities to help build seamless integrated mobility across modes."[35]

The City of Seattle recognized the need for data in order to understand the impacts on parking, mobility choices, and congestion when approached in 2013 by Car2Go, a one-way carsharing company. They set up a yearlong pilot with Car2Go that authorized a cap of 500 vehicles, and required a summary of operational and member survey data to be submitted to the city twice a year.[36]

The City of Seattle analyzed the results and published them in May 2014, concluding that "it is unclear how free-floating car share is affecting broader transportation choices throughout the city" based on mixed results:[37]

### Positive impacts:

- 39% of members have given up a car or are considering giving up a car;
- 35% are traveling fewer miles in personal vehicles;
- 39% are using their personal cars less often since joining car2go.

### Negative impacts:

- 47% of members indicate that they now ride transit less frequently
- 63% of members report that they have not changed the number of miles they travel in a personal vehicle, even with Car2Go use.[38]

The results were positive enough to move beyond the pilot and make free-floating carsharing permanent. The City also increased the permit fee to fund transportation demand management (TDM) efforts, required citywide service areas after two years of operation, and added a standardized survey requirement that could better gauge the short and long term effects of the services.

The City expanded the program to allow up to four car-sharing companies, each given up to 500 permits. An extra 250 permits were allowed for operators who provide citywide service.

The City of Seattle also partnered with the University of Berkeley Transportation Research Center lead by Dr. Susan Shaheen to develop the new survey that would better gauge the impact on vehicle miles travelled (VMT). Car2Go paid for the survey to be developed with the City making a contribution. The study was conducted in December of 2014.[39]

1 Such as the Federation of Canadian Municipalities and its provincial chapters, the American and Canadian Planning Associations and their state/provincial chapters, etc.

2 Lisa Rayle, Susan Shaheen, Nelson Chan, Danielle Dai, and Robert Cervero. *App-Based, On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco.* University of California Transportation Center, 2014. http://76.12.4.249/artman2/uploads/1/RidesourcingWhitePaper_Nov2014Update.pdf

3 Ibid.,18.

4 http://www.tnooz.com/article/do-sharing-economy-startups-have-a-civic-duty-to-share-data/#sthash.8KZ41zQm.dpuf

5 Lauren Hirshon, Morgan Jones, Dana Levin, Kathryn McCarthy, et al. *Cities, the Sharing Economy, and What's Next.* National League of Cities. Center for City Solutions and Applied Research, 2015, p. 9. http://www.nlc.org/Documents/Find%20City%20Solutions/City-Solutions-and-Applied-Research/Report%20-%20%20Cities%20the%20Sharing%20Economy%20and%20Whats%20Next%20final.pdf

6 http://www.huffingtonpost.com/2015/04/29/uber-sues-al-jazeera_n_7171892.html

7 https://shorttermconsequences.wordpress.com/2015/06/

8 http://www.citevancouver.org/quad2015/program/87.pdf

9 http://insideairbnb.com/about.html

10 http://tomslee.net

11 http://www.connotate.com

12 http://www.sfchronicle.com/business/item/Window-into-Airbnb-s-hidden-impact-on-S-F-30110.php

13 http://tomslee.net/2015/04/airbnb-data-collection-methods-and-usefulness.html

14 http://www.latimes.com/local/lanow/la-me-ln-garcetti-partnership-waze-20150421-story.html

15 http://www.data.gov/cities/

16 http://www.data.gov/cities/; The San Diego Regional Data Library published a series of case studies of Municipal Open Data Policies and made recommendations for San Diego area governments to create their own policies. See: http://www.sandiegodata.org/reports/municipal-open-data-policies/

17 http://www.coloradowaterdata.org/aboutcdsn_cdsn.html

18 http://amdsp.ca/index.html

19 http://www.ontario.ca/environment-and-energy/land-information-ontario

20 http://usdn.org/uploads/cms/documents/usdn_measuring_consumption_project_files.zip

21 http://www.citevancouver.org/quad2015/program/87.pdf p.4

22 http://dig.abclocal.go.com/kgo/PDF/265259701-Airbnb.pdf

23 http://www.capitalnewyork.com/article/city-hall/2015/02/8562038/scraped-airbnb-data-shows-58-listings-possibly-illegal

24 http://www.oregonlive.com/commuting/index.ssf/2015/04/user_pays_67750_in_portland_fi.html

25 http://www.cnbc.com/id/102636568

26 http://www.portlandmercury.com/BlogtownPDX/archives/2015/06/04/heres-what-top-secret-info-uber-and-lyft-are-sharing-with-city-officials

27 http://skift.com/2015/06/24/how-uber-conquered-portland-oregon/

28 Ridescout does not include Uber or Lyft currently but does include Sidecar, the small ride-sourcing company operating in San Francisco, Seattle, Los Angeles, Austin and Philadelphia.

29 https://www.youtube.com/watch?v=6UG_Z9YjrQU

30 http://sharedusemobilitycenter.org/research/

31 http://sharedusemobilitycenter.org/news/; http://sharedusemobilitycenter.org/newsletter/

32 http://sharedusemobilitycenter.org/events/; http://sharedusemobilitycenter.org/summits/

33 http://info.sharenl.org/

34 *The Innovation Transporation Index: The Cities Where New Technologies and Tools Can Reduce Your Need to Own a Car.* U.S. PIRG Education Foundation. 4 February 2015, p. 7. http://www.uspirg.org/reports/usf/innovative-transportation-index

35 http://carsharing.org/2014/04/seattle-reports-out-after-one-year-with-car2go-on-the-city-streets/

36 Ibid.

37 *2013 Seattle Free-Floating Car Share Pilot Program Report.* Seattle Department of Transportantion. March 2014. https://worldstreets.files.wordpress.com/2014/04/2013_free_floating_car_share_report.pdf

38 Ibid.

39 Ibid.

# 6.

# STRATEGIC OPPORTUNITIES

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There are many opportunities for local governments to engage with the Sharing Economy to advance urban sustainability as outlined in this roadmap. **But how can local governments make strategic choices and prioritize their efforts in order to use the Sharing Economy as a tool to most effectively advance urban sustainability?**

The answers to this question varies with each city given political and community priorities, organizational capacity, and the nature of Sharing Economy activity and impacts. This section highlights some strategic opportunities for navigating a way forward:

- Learn, connect, and prepare
- Focus and align
- Align local government roles with Sharing Economy actors
- Lead by example
- Match roles to the maturation of Sharing Economy innovations
- Commit to equity
- Take a more systematic and integrated approach over time

This list is partly drawn from and inspired by a number of resources that go into greater depth about how to lead change from within local government. We recommend the following to our readers:

- **The Guide to Greening Cities** (2013) by Sadhu A. Johnston, Steven S. Nicholas and Julia Parzen. This book "is written from the perspective of green city leaders and champions who are working inside city governments in North America and who have succeeded in pushing forward innovative green projects."[1]
- **ICLEI Sustainability Planning Toolkit** (2009) – a comprehensive guide to help cities and counties develop a sustainability plan with toolkits and resources.[2]
- **Creating, Leading and Managing Change: A Resource Guide for Local Sustainability Leaders Version 2.1** (2012) by the Institute for Sustainable Communities for the Urban Sustainability Leadership Academy (USLA).[3]

## 6.1 LEARN, CONNECT, AND PREPARE

### Learn and Connect

To the uninitiated, the Sharing Economy can be confusing and difficult to understand. To those who have primarily read mainstream media articles, it may seem that it's just about large companies like Airbnb or Uber, but we know from the LGSE Project that it is a lot more.

Reading about the Sharing Economy from a variety of sources is important. We provide many perspectives throughout this report and provide a list of further resources in Chapter 7.

> *"But to really understand how the Sharing Economy works and the opportunity it holds for urban sustainability requires trying it out."*

As April Rinne states in an article for the World Economic Forum entitled, "Four ways cities can embrace the sharing economy":

> "Start simple, like using a carsharing or ridesharing app one day. Then, go out and meet community members. Talk to people who use Airbnb, either as a traveler or a host. Meet people who use LiquidSpace for work meetings, EatWith for social meals, or TaskRabbit for errands. Ask them about their experiences, their results, and what's missing. See how you feel when you do this: what changes, and what opens up?"[4]

We suggest exploring and sampling the Sharing Economy across all five categories: 1) for-profit, 2) social enterprise / cooperative, 3) non-profit, 4) community sharing, and 5) public sector organizations.

Community sharing is less digitally enabled, so test activities in person and talk with some of the people involved. Visit a tool library or maker space, or go to a swap meet, community garden, community kitchen, or fix-it clinic. Check out web platforms with a local of neighbourhood focus such as those for landsharing or swap sites. Some cities also have organizations that bring together community sharing innovators. They may be part of Shareable's Sharing Cities Network and be listed on their city directory.[5] Connect with them and learn about their aspirations, results, challenges, and future plans in your city.

### Prepare

> *"As you're learning about and connecting with Sharing Economy users and actors, we recommend that you create an inventory of what's happening in your city."*

We suggest that you categorize Sharing Economy actors and activities in order to avoid being overwhelmed. We found the following two categories useful:

1) Sharing Economy sector (e.g. mobility, goods, food, energy, etc.)
2) Type of actor (e.g. for-profit, social enterprise / cooperative, non-profit, community sharing innovators, and public sector)

You could use Table 1.1 from Chapter 1 as a starting point, which includes five categories of Sharing Economy actors. Add specific examples from your city and then categorize by sector such as mobility, space, energy, food and so on. If you prefer the first category to be the Sharing Economy sector, then move the table columns accordingly.

The final preparation steps that we recommend are creating lists of:

- How Sharing Economy different sectors or examples potentially support or detract from a range of different city priorities; and
- Current roles that your local government plays in the Sharing Economy; refer to "Local Government Roles" in Chapter 1.

## 6.2
## FOCUS AND ALIGN

Sadhu Johnston, Deputy City Manager of the City of Vancouver and Founder and Co-Chair, Urban Sustainability Directors Network, notes the following in *The Guide to Greening Cities*:

> *"You can't do everything and do it well. Focus on key areas in which you can make progress toward targets that are aligned with priorities of the mayor, city council, city manager, or other key stakeholders."*[6]

We suggest the following three steps for following Johnston's advice regarding the Sharing Economy:

### STEP 1
DETERMINE THE AREAS WHERE ECOLOGICAL IMPACTS ARE GREATEST IN YOUR CITY.

Consider reviewing:

- Key metrics such as the city's carbon footprint, ecological footprint if available, and metrics from sectoral sustainability plans for transportation, waste management, etc. Where can the greatest ecological sustainability gains be made in your city – transportation, waste, food?
- Compare an average household in your city to consumption benchmarks such as those for food, built environment, transportation, consumables and waste. Consumption benchmarks termed "lifestyle archetypes" have been developed in these five areas matched to different degrees of impact on ecological carrying capacity.[7] The Sharing Economy is a unique opportunity for local governments to have some influence on household consumption levels.

## STEP 2

### DETERMINE WHAT AREAS AND ACTIVITIES OF THE SHARING ECONOMY CAN HELP REDUCE KEY ECOLOGICAL IMPACTS IN YOUR CITY PLUS MOVE FORWARD OTHER DIMENSIONS SUCH AS RESILIENCE, EQUITY, PROSPERITY, AND QUALITY OF LIFE.

As we presented in Chapter 3, start by determining what is currently known about integrated sustainability impacts for shared mobility, goods, spaces, (and to a lesser degree) shared food, and shared energy.

## STEP 3

### FROM A LIST OF POSSIBLE SHARING ECONOMY SECTORS AND/OR ACTIVITIES IDENTIFIED FROM STEPS 1 AND 2 ABOVE, ALIGN WITH CURRENT PRIORITIES OF YOUR MAYOR, CITY COUNCIL, CITY MANAGERS AND STAFF, AND OTHER KEY STAKEHOLDERS.

As we identified in the first section of the Chapter 4 and throughout Chapter 3, the Sharing Economy can align with, or impact, a variety of city priorities including carbon, waste and footprint reduction, emergency management and disaster preparedness, workforce and economic development, affordable living, affordable housing, equity, healthy and socially connected communities, renewable energy transition, and sustainable food systems.

If you align with areas of momentum or priorities of key champions both inside and outside city hall, there is a greater chance of successful implementation and results. Finding and cultivating champions within and across departments – and in the Sharing Economy sector of your city – can help with finalizing priority setting and developing and implementing solutions that achieve multiple sustainability benefits.

Consider factors which are standard in organizational change such as matching the ambitiousness of actions to organizational capacity and readiness. There are also some other factors to consider when determining which action(s) to take:

- *A blend of regulatory and enabling roles*
  In some cities, responding to large Sharing Economy players like Airbnb or Uber warrant the majority of local government attention and resources in order to manage risks and determine appropriate regulatory responses. At the same time, we recommend choosing some facilitative 'enabling' actions with a low level of city effort that encourage other Sharing Economy activities that support city priorities. This could include providing a funding grant or civic space to a sharing innovator or start-up, or gathering and assessing data on another area of the Sharing Economy in order to consider future actions. See Table 1.3 for more examples of the range of local government roles.

- *A blend of actions across different types of Sharing Economy actors*
  The Sharing Economy is a lot more than for-profit companies and start-ups as we have shown in this Roadmap. For local governments concerned with advancing sustainability, consider a blend of actions that also include enabling the benefits of cooperative, non-profit, and community sharing actors and activities. There is more on aligning local government action with Sharing Economy actors below in Section 6.3.

- *Seeking out scalable actions*
  The Sharing Economy itself has been highly effective at scaling largely due to information technologies and web platforms which increase the ease and convenience of transactions and reduce their costs. Local governments with limited resources can learn from this by supporting Sharing Economy activities with the most positive sustainability outcomes that are also scaleable,[8] including:

  1. **Replication:** Replicating positive innovations in different contexts (e.g. expanding tool libraries into new neighbourhoods or bringing carsharing into suburban municipalities);

  2. **Expansion:** Growing positive innovations in the same context (e.g. supporting the expansion of carsharing through allowing more permits and/or new carsharing entities; supporting the expansion of renewable energy web-based platforms and co-ops that allow previously excluded individuals the opportunity to share in existing wind and solar projects and finance new energy projects);

3. **Diffuse and influence:** Diffusing the principles of positive innovations to inspire new innovations (e.g. the mobile and digital technology behind Car2Go carsharing systems is now spurring a new model of bikesharing that doesn't require permanent docking stations for users to return and pick-up bikes but instead enables users to leave and retrieve bikes throughout the city).

## 6.3 ALIGN LOCAL GOVERNMENT ROLES WITH SHARING ECONOMY ACTORS

As mentioned, this roadmap outlines five different categories of actors. Are local governments playing different roles depending on the Sharing Economy actor? We find that the roles do not vary exactly by Sharing Economy actors and their ownership structure, but instead ultimately depend on how the local government determines the risks and benefits of each Sharing Economy activity in light of whether it advances city priorities and positive innovation. We have identified some trends that are worth noting:

1. **Social enterprise and non-profit Sharing Economy actors have a stronger tendency to prioritize non-financial goals such as advancing environmental sustainability and targeting low-income users.**

   Non-profit carshare companies, for example, have made the greatest efforts – and achieved the most success – at reaching low-income populations.[9] "Unless the operator is a social enterprise or unless the government mandates a focus on low-income communities, (carshare) operators are unlikely to target potential low-income users, given their need for a financially viable business model. This dynamic has played out in Chicago and Philadelphia, where non-profit car-share companies were acquired by for-profit businesses that subsequently dropped some of the benefits to low-income users."[10]

   Non-profit and cooperative carshare entities also have a stronger, more explicit, and more consistent emphasis on reducing car dependence, promoting active transportation, and supporting sustainable lifestyle behaviour more broadly. Consider: "Our motto has always been, 'Walk, bike, ride the bus, but when you need us, we're here.' That's why we like to locate our cars next to B-cycle, bus, and light rail stations, and why we keep bike and bus maps in our cars" (IGO CarShare, non-profit).

   In terms of local government roles, this has led to some instances in which local governments preferentially partner with non-profit or cooperative carshare and bikeshare entities given their mission-based orientations.[11]

2. **Large, for-profit Sharing Economy actors that elicit high levels of local government concern about risks or impacts tend to receive the highest level of regulatory response, which requires often a high level of commitment and resources.**

   Regulatory actions for short term housing rentals, one-way carsharing and ridesourcing are prime examples. There are a variety of responses from regulation to outright bans. Local governments may not respond to large, for-profit players if the Sharing Economy activity is not deemed a significant risk or if regular market forces are sufficient to manage issues including risk and safety.

3. **Community Sharing is a major new category of the Sharing Economy that can support city priorities of climate action, waste and footprint reduction, affordable living, workforce development and building healthy, connected communities.**

   This is an area where local government involvement is not predominantly regulatory but instead range across a spectrum of roles, which often focus on enabling these activities. These local government roles include many facilitative actions with relatively lower levels of city government effort and commitment such as: conducting Sharing Economy inventories and developing web pages or sites to profile these activities and actors; providing grant funding; promoting sharing activities through the web, municipal publications, and social media; connecting sharing actors with resources; and funding entities and relevant organizations. There are only a few cities that are going further than 'enabling' in

order to convene, incubate, and leverage activities in more committed ways including Portland, Oregon, Flagstaff, Arizona and Hennepin County, Minnesota.

4. **Public sector organizations can be a part of the Sharing Economy by supporting or forging partnerships with Sharing Economy actors, and also through leading by example.**

   Municipal Sharing is one of the primary ways in which the public sector has been engaging in the Sharing Economy. This peer-to-peer engagement allows municipalities to share information in order to identity untapped or idle civic assets. Examples of municipal sharing have begun to be documented across three categories: 1) municipal equipment, services and human resources; 2) civic assets (described in Chapter 3c: Shared Goods) and 3) knowledge/data (in Chapter 5).

   Leading by example is another strategy in which a city itself implements chosen sustainability priorities as a way to demonstrate commitment to and encourage sustainability across sectors. With control of real estate, streets, transportation systems, waste management, infrastructure, parks, and operations, there are numerous opportunities for local governments to implement demonstration projects with municipal assets. Though change can be difficult, and leading by example requires continuous innovation, the commitment of a city to "practice what it preaches" has been an effective way to build legitimacy, catalyze, and inspire change in the private sector and the wider community. Moreover, there are numerous examples of local governments already engaging in municipal demonstration projects rooted in various areas of the Sharing Economy such as shared mobility and data sharing. They are explored further in the next Section 6.4 Lead by Example.

## 6.4 LEAD BY EXAMPLE

Once city priorities are established for the Sharing Economy, a promising approach is for the city to lead through demonstration projects. Leading by example is not an end in itself but a way to catalyze and inspire broader change. As the co-authors of "The Guide to Greening Cities" (2013) note: "If the city can't do something, don't expect the private sector to do it. For example, complete energy retrofits of city buildings before requiring that privately owned buildings become energy efficient. Engage with facilities staff and use their experience to shape programs and policies."[12]

Existing examples of local governments leading by example include:

**CARSHARING**

Many cities across North America like Houston, Philadelphia, and Vancouver are entering into partnerships with carsharing companies so that city staff can use the vehicles, some of which are electric.

**BIKE SHARING**

A number of cities have developed, funded, and operate public bikesharing systems (e.g. Capital Bikeshare in Washington D.C. has 2500 bikes across 300 stations).[13]

**SHARED SPACES**

Cities can share their municipal spaces e.g. the UK Government is sharing underused office space through the Space for Growth programme for start-ups, businesses, charities and social enterprises (See Box 4.4).

**DATA SHARING**

Montréal facilitated the development of a snow removal app – INFO-Neige MTL – by sharing relevant data, hosting an app competition and providing funding to the successful developer. Portland and New York City are sharing data for the development of transit apps.

**SHARED GOODS**

A few municipalities are leading the way through legislation, policy and programs to facilitate the sharing of municipal equipment and services for public safety, transportation, recreational and social services and so on. See Box 3c.6 in Shared Goods.

**COMMUNITY SHARING**

A few municipalities are coordinating, or serving as the lead partner, for example, in hosting Fix-It Clinics.

**SHARED ENERGY**

Some community shared energy projects are being launched by municipally-owned utilities, or government operated utilities as serving as key partners.

Besides shared mobility where local governments have a strong history of leading by example, many of the above examples are not yet widespread and thus represent a tremendous untapped opportunity. However, it is important to be critical and selective when making decisions about which Sharing Economy activities to support and ensure that they align with city priorities and advance urban sustainability.

There are also other areas where local government could lead by example in the Sharing Economy such as purchasing, however, according to Alicia Culver from the Responsible Purchasing Coalition, 'sharing' is currently not part of the filter that cities are adopting in terms of sustainable, green, or ethical purchasing and shouldn't be overemphasized in light of other purchasing priorities. As noted in Chapter 3c, there are opportunities to align purchasing with advancing those aspects of the Sharing Economy that support city priorities including waste reduction through collective ownership of, for example, equipment and supplies or emergency preparedness through partnerships with Sharing Economy actors.

As we know from other areas of sustainability, leading by example requires a lot of innovation and hard work. It is worth the effort – not only can local governments reap desired sustainability benefits, but they can also spur similar actions outside city hall by demonstrating value, lowering the risk for early adopters, and addressing regulatory and other barriers through their own experience. By leading and testing out desired Sharing Economy activities with sustainability benefits, local governments can set the stage for others in the community and business world to do the same.

## 6.5 MATCH ROLES TO THE MATURATION OF SHARING ECONOMY INNOVATIONS

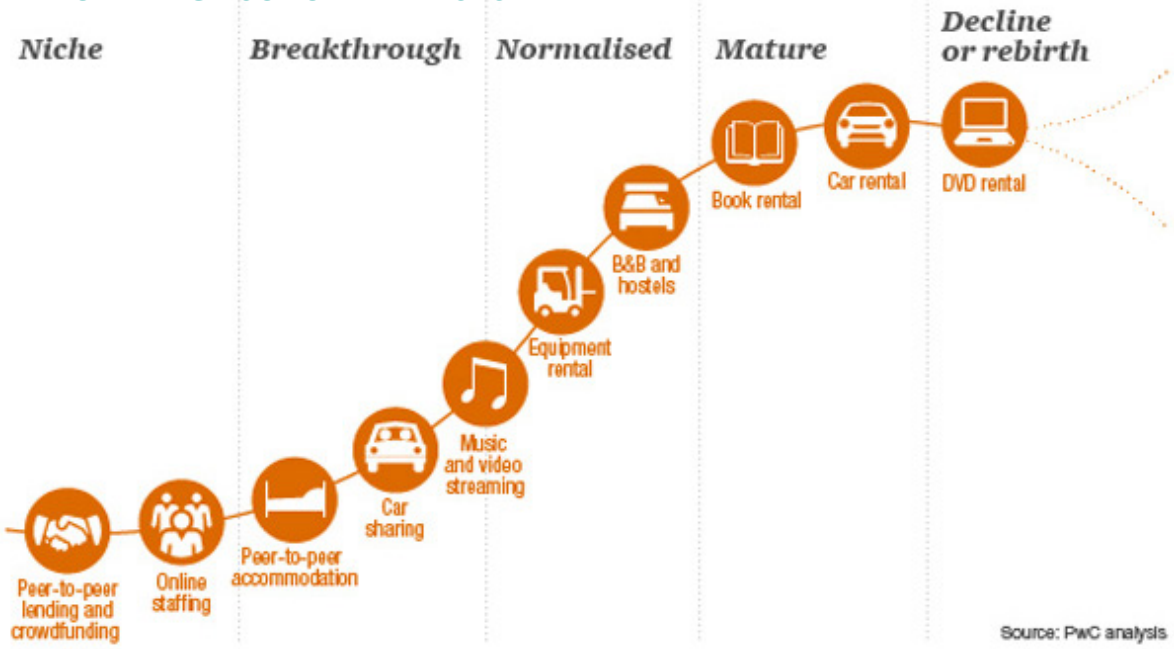
As noted in Chapter 1 Defining the Sharing Economy, the roles that local governments play in the Sharing Economy can shift over time due to factors such as changing priorities, capacities, risks or benefits.

> *But there is another reason that we believe should influence the strategic choice of local government roles: the degree of maturation of Sharing Economy activities.*

The maturation of Sharing Economy activities should also influence the role that local governments choose to play.

There are already some efforts to chart the maturation of Sharing Economy activities that could guide local governments in this endeavour. A report by Price Waterhouse Coopers, for example, charts Sharing Economy sectors (particularly rental) at different stages of development.[14]

**Fig 6.1**
**THE SHARING ECONOMY LIFE CYCLE[15]**



As Sharing economy activities evolve through this cycle, their needs change. By shifting local government roles in response to the maturation of Sharing Economy innovations, ideally municipal leaders can use their resources and allocate their effort more efficiently.

*For example, the City of Vancouver requested a number of reserved on-street and multi-family dwelling parking spaces for Modo: the Car Cooperative (originally called the Cooperative Auto Network) when Modo first launched and when carsharing was a new emerging niche. As the carsharing sector matured and new carsharing entrants arrived, the City evolved its approach to accommodate all car-sharing players.*

By 2010, the City Council unanimously approved the "introduction of a fee for on-street reserved spaces for car-sharing vehicles and that Residential Parking Permits (RPP) be provided to car-sharing vehicles to park in the residential areas" and made corresponding amendments to the Street and Traffic By-Law and Parking.[16] By 2010, two other car-sharing entities, Zipcar and CityFlitz, had joined Modo in the City so the carsharing parking and permit allowances were generally applicable to carsharing entities rather than focused specifically on supporting Modo.

Local governments can also learn from urban sustainability innovation research such as the recent report developed by Pete Plastrik with Julia Parzen for the Urban Sustainability Directors Network. The authors propose an "innovation pipeline" in the shape of a funnel that distinguishes between emerging, core, and advanced core innovations. Not all innovations succeed the authors' caution:

> "The innovation process usually starts with ideas, proceeds to design and testing, then working out the bugs and launching the innovation — and, finally, spreading what works. The pipeline acts as a funnel, wide at the front end, where concepts and prototypes enter, and narrow at the back end, where ideas that work — meaning they reliably produce repeatable results — emerge. Not every idea hits pay dirt; the funnel is where innovations live or die."[17]

The authors highlight a number of examples in each of the three innovation categories as outlined in Table 6.1. It is interesting to consider how Sharing Economy activities might link with these examples. For example, bike lanes, paths, and routes are advanced core examples and bikesharing is one of the highest growth areas of the Sharing Economy currently. Renewable energy purchasing is a core activity underway in about half of USDN communities so the LGSE Roadmap investigation of Shared Energy opportunities may have promise and potential to scale.

## Table 6.1
### EXAMPLES OF CITY INNOVATIONS ALONG THE INNOVATION PIPELINE[18]

| INNOVATION CATEGORY | EXAMPLES |
|---|---|
| **Advanced Core**<br>(underway in three-fourths or more of USDN communities) | · Bicycle lanes, paths, routes<br>· Municipal fleet efficiency<br>· Residential recycling<br>· Green building standards |
| **Core**<br>(underway in about half of USDN communities) | · Complete Streets<br>· Renewable energy purchasing<br>· Residential building energy retrofitting<br>· Sustainability indicators<br>· Green business certification |
| **Emerging**<br>(underway in about a third of USDN communities) | · Transportation demand management<br>· Waste-to-energy capacity<br>· Industrial building energy retrofitting<br>· Smart energy grids |

Understanding how other Sharing Economy examples for shared goods, food, space, and community sharing fit into these innovation categories would be useful to understand. Further, the choice to invest in Sharing Economy innovations at different innovation stages would be guided by many factors such as:

> "expert analysis, cost, access to financing, availability of implementation expertise, culture of the community, local political will, regulatory context, and more."[19]

## 6.6 COMMIT TO EQUITY IN THE SHARING ECONOMY

Local governments play a critical role in determining who participates and makes decisions about Sharing Economy activities and who bears the burden of negative impacts. Committing to equity supports vulnerable populations in cities and ensures that Sharing Economy benefits are available to all. In this roadmap, we already highlight the importance of equity in our sustainability filter, and we reinforce it here because engagement on the Sharing Economy is a strategic opportunity for social inclusion.

As we note in Chapter 2, the USDN's Working Group on Social Equity definition is "fair access to basic environmental health and safety, opportunities for livelihood and economic wellbeing; educational, social and environmental resources; full participation in the political and cultural life of the community; and self-determination in meeting fundamental needs and achieving one's full potential."[20] Efforts to foster equity include cultivating a deep understanding of the experience of historically marginalized communities, reducing barriers to participation, building community capacity including through training and education, preventing regressive impacts through targeted assessments, building and sharing power, and creating opportunities for developing and redistributing wealth and assets.[21]

There is evidence from the 2014 survey conducted by the Center for a New American Dream that people of color – Asian-Americans, African-Americans, and Hispanic / Latino Americans – are more likely to participate than white Americans in some Sharing Economy activities including carsharing, accommodation sharing, tool libraries, and community gardens.[22] However, this participation can be undermined, often in subtle ways. Sharing Economy activities are often accessed through information technologies or credit cards that are not available to all users or 'consumers'. Participation as 'providers' offering shared spaces, cars, and goods on Sharing Economy platforms requires ownership of those assets which privileges those with higher income and quality assets to share. Boston College Professor, Juliet Schor notes the importance of ownership because "the more the platforms are backed by and integrated with the large corporations that dominate the economy, the more monopolized the sector will be, and the less likely value will flow to providers and consumers."[23] The location of Sharing Economy activities in a city can also influence the ability of vulnerable populations to participate especially if these activities are established and targeted primarily at affluent neighbourhoods.

Bikesharing is an area of the Sharing Economy where solutions are emerging that promote equity. While it is deemed more effective and appropriate to design bikesharing with equity in mind, the case study in Box 6.1 reveals that it is also possible to advance equity in Sharing Economy activities that are already underway.

We recommend building equity into all aspects of a Sharing Economy activity right from the design phase of projects, policies, and practices through to the phases of implementation, evaluation and adaptation. Without a clear commitment, Sharing Economy activities can replicate existing social divisions, as is indicated by evidence of racial discrimination taking place on platforms such as Airbnb, TaskRabbit, and Uber.[24] In order for Sharing Economy activities to advance equity, local government needs to play a key role of maintaining the public interest. In contrast, for-profit companies are focused on profit-making and shareholder returns and this can lead them to prioritize higher-income users who can afford higher rates. As Tufts University Professor of Urban and Environmental Policy and Planning Julian Agyeman notes:

> "Social justice doesn't simply happen; sharing systems must be designed around equity and justice: these cannot be retrofitted."[25]

There are a number of existing guides which local governments can reference in developing a strategic approach to advancing equity when engaging with the Sharing Economy including:

- USDN Equity and Sustainability Scan: A scan of best practices for how local governments have defined equity and incorporated it in sustainability programming, lessons they have learned, innovative tools they can use, and opportunities to collaborate to build on these successes. (USDN Special Project, 2014)[26]
- City of Portland, Bureau of Planning and Sustainability (BPS), Equity Work Group publications.[27]
- Equity indicators project in King County (Washington)[28]
- City of Toronto Equity, Diversity and Human Rights Division publications and funding support.[29]

### BOX 6.1: NICE RIDE MINNESOTA BIKE SHARE PROGRAM ADVANCES EQUITY

The Nice Ride Minnesota Bike Share Program expanded the City's bikeshare program to a diverse, low-income area of Minneapolis in 2010.[30] It became clear after the one-year pilot that simply installing bike kiosks in this low-income neighbourhood is not enough. Community focus groups highlighted the need to also: lower annual subscription costs; make memberships available at convenient community locations, not just online; target outreach strategies including free trials; and integrate membership with public transit systems. In 2014, Nice Ride launched the Nice Neighbourhood program providing bikes to 140 lower-income and immigrant participants for three months in exchange for completing tasks at the local bike shop and participating in Nice Ride community gatherings.[31]

> "What the Nice Ride Neighborhood program did was make highly-visible bicycles extremely accessible to people who normally do not bike. This was not about changing the street layout or making better bike trails. It was about giving people bicycles. The program also addressed a common reason lower-income people do not own a bicycle: the cost. Many people do not see the value in investing money into a bike or are tired of buying cheap bikes that routinely break down. Nice Ride loaned high-quality bicycles to people so they could experiment with using one on a daily basis. This alone changed the cityscape. For one, new bicyclists started appearing in areas of the city where bicycle infrastructure is lacking. Over 100 people starting riding a bike and they certainly stood out." [32]

In addition to increasing bike visibility, participants report higher bike safety awareness and some indications of improved physical and mental health.[33] It became clear that barriers to bike riding are just as much about the associations people make about bike riders (business people or poor people) as they are about the 'hardware' of bike infrastructure, and there is evidence that the Nice Ride approach is shifting those perceptions.[34] Nice Ride Neighbourhood is now launching its second year of the program doubling its size and expanding into a new neighbourhood with the aim of enhancing cycling culture. This case and others are inspiring the Better Bike Share Partnership to partner with JPB Foundation on $375,000 awards to cities (Austin, Boston, Brooklyn, Charlotte, Chicago, Portland and Washington DC) to establish best practices for equitable bike-sharing, including subsidized memberships and outreach campaigns.[35]

## 6.7 TAKE A MORE SYSTEMATIC AND INTEGRATED APPROACH OVER TIME

Local governments in North America have taken a largely reactive or piecemeal approach to the Sharing Economy. The Sharing Economy is new, and rapidly evolving, so this is understandable. It's been important and necessary to respond to risks, safety concerns, and vocal lobby groups related to entities like Airbnb or ridesourcing companies.

Some local governments have taken a more proactive role to enable the Sharing Economy in North America, but this has been limited to key areas with the most widespread being shared mobility such as bikeshare, carshare, and rideshare.

Other places in the world such as Seoul, South Korea, and Amsterdam have taken approaches to the Sharing Economy that are more systematic and integrated, declaring themselves Shareable Cities. As Juliet Schor contends:

> "outside the US, the impetus to share is more integrally tied to city-level goals of carbon emission reduction, informational transparency and genuine democracy. By embedding sharing practices in those larger municipal level movements, the likelihood that the sharing movement can achieve its stated goals is greater."[36]

There are indications that more strategic, integrated approaches are starting to happen in North America that could allow local governments to get ahead of the curve and more systematically link the Sharing Economy to a range of sustainable city priorities.

## INTEGRATIVE APPROACHES IN NORTH AMERICA ARE EMERGING

### Sharing Economy Task Forces

A number of cities in the United States have set up Sharing Economy task forces such as those in West Hollywood and the City of Denver. We use the City of Hollywood's Task Force here as an example.

The City of West Hollywood: Shared Economy Taskforce is comprised of staff and representatives of the Planning Commission, Transportation Commission, Business License Commission, Chamber of Commerce, and Visit West Hollywood. It has met 8 times since July 23, 2014 to assist in the review of impacts and policies related to Sharing Economy businesses, with a primary focus on short term rentals and shared ride services (e.g. Uber and Lyft).

Each meeting included an opportunity for public and staff comment, guest subject matter experts, and time for Task Force deliberation. Subject matter experts included representatives from Airbnb, the LA Short-Term Rental Alliance, Uber, and Lyft. A separate meeting was held with taxi franchise operators.

The Task Force maintained a website that includes meeting agendas, press releases, and policy recommendations. Members of the public that were unable to attend could email their comments to be shared with the Task Force, or post through EngageWeHo.com, one of the City's engagement platforms.

The Task Force provided recommendations to Council in February 2015, which considered all input received. Ride-sourcing recommendations focused around safety, fairness, insurance, and enforcement of ride-sourcing businesses. STR recommendations addressed education and enforcement to reinforce that STRs are not allowed in West Hollywood.

The West Hollywood Task Force should be commended for its open and transparent process that shows a clear effort to engage and consider the evidence and varied perspectives of members of the public, staff, and Sharing Economy businesses. Yet to date it has only focused on regulating the Sharing Economy in two key areas, and has not yet considered the many opportunities to more proactively enable the Sharing Economy in order to realize goals related to waste management, sustainable energy, social connection, and more.

**Recommendation: Sharing Economy Task Forces or Working Groups should consider a combination of regulatory and other proactive, enabling roles such as those in Table 1.3.**

### Strategic Approaches to the Sharing Economy

Are any local governments in North America developing a more systematic, integrative approach across a variety of areas of the Sharing Economy that blends regulation with enabling roles? The City of Vancouver is going down this path and its journey is summarized in Box 6.2. Seoul, South Korea has taken potentially the most comprehensive approach to the Sharing Economy where city roles blend regulatory and a range of enabling roles. The following Case Study on Seoul's Sharing City Initiative provides more detail.

## CITY CASE
## THE CITY OF VANCOUVER STRATEGIC APPROACH TO THE SHARING ECONOMY

Enabling the Sharing Economy is not new to the City of Vancouver, but what is new is a recent effort to view the Sharing Economy as part of how the City strategically achieves its priorities.

### HOW THE CITY OF VANCOUVER ENABLES THE SHARING ECONOMY

The City of Vancouver has played a variety of roles in the Sharing Economy linked to a number of city priorities – transportation, local food, waste and footprint reduction, affordability, and community connection. Consider the following examples:

#### CARSHARING

Since 1997, the City of Vancouver has been supporting the expansion of carsharing, including the following four

companies – Modo, ZipCar, Car2Go, and the most recent addition, Evo.[37] The City provides dedicated parking spaces on city streets and in private parking lots and provides residential parking permits, increasing the attractiveness of the service and reducing the number of cars on city streets. They also facilitate the integration of carshare agreements into new multi-family developments, allowing communities to be developed around local walkability.[38] The City of Vancouver's efforts through its Greenest City initiative[39] raise the profile of carsharing across North America and inspire other cities to adopt progressive carsharing policies. Recently, the City threw its support behind the 2015 CarSharing Conference, bringing it to Vancouver and continuing to profile the City's innovation in this area.

### GRANTS FOR SHARING STARTUPS

The City of Vancouver provides grants for Sharing Economy start-ups and operations, the most notable of which is the Vancouver Tool Library, which was established in 2011.[40] The Tool Library provides access to, and sharing of, tools used for everything from bicycle repairs to metalworking, electrical, plumbing, and home garden jobs.[41] More recently, The City also provided a grant to ShareShed, an app that connects people wanting to rent outdoor equipment with people looking to rent theirs out. Not only does ShareShed promote healthy, outdoor living but more affordable living, reduced consumption of new equipment, and enhanced community connections.

### PROVIDING SPACE FOR SHARING

The City has provided space for a variety of sharing activities, including: space for community gardens in parks, at community centres and in vacant lots; space for community kitchens and swap events at community centres; and light industrial land for a new Green Recycling Hub where resources, office and warehouse space are shared between Recycling Alternatives, a private recycling business, and United We Can, a social enterprise that supports local binners (wastepickers).[42]

### SUPPORTING RESEARCH ON THE SHARING ECONOMY.

This has been a key part of the City of Vancouver's approach. A major project supported by the City was The Sharing Project,[43] which enabled researchers to survey and analyze Vancouver citizens to determine how people share in Vancouver and to highlight opportunities for growth in the local Sharing Economy. In an ongoing role the City supports the work of CityStudio – an innovation hub and collaboration of six post-secondary institutions where university students, community members and City staff co-create, design and launch projects on the ground.[44] CityStudio students conduct research on a variety of topics, including many related to Sharing such as: a Shareable mapjam; Britannia FoodShare; Recreational Sharing Libraries, and developing new community gardens.[45]

One challenge facing the City, which is by no means unique to Vancouver, is the long-term sustainability and development of Sharing Economy activities. While the City can provide grant funding and regulatory frameworks to bring the Sharing Economy into the formal economy, the success of activities and initiatives ultimately relies on the buy-in of individuals within the community and the response of the market and users. In short, grant funding only goes so far, and bylaws and regulations only set up necessary conditions for Sharing Economy activities to develop – community leaders, consumers, and entrepreneurs have to step up and help ensure the Sharing Economy is equitable and sustainable. The City's interest lies in ensuring that the benefits of the Sharing Economy are actually achieved whether through regulation or through the business models that are supported.

### A NEW STRATEGIC WAY FORWARD

The City of Vancouver is building on this history of enabling the Sharing Economy and they recognize the opportunity to do more. The promise of the Sharing Economy includes leveraging underused assets, creating social connections, and reducing waste and consumption – many of which are in line with City priorities such as in the Greenest City Action Plan, the Healthy City Strategy, the Emergency Management plan, affordable housing and more.

The City of Vancouver sees the opportunity to leverage the Sharing Economy to help achieve City goals, however the challenge is in understanding how to best enable Sharing practices while protecting citizens. Starting in 2014, the City has created a working group to look at just that – how the City can be more strategic in its support and response to the Sharing Economy. The group is currently bringing together city departments to develop and assess these opportunities.

## CITY CASE
## SEOUL'S SHARING CITY INITIATIVE

In September of 2012, the Mayor of Seoul, South Korea, Won-Soon Park, announced the Sharing City initiative, paving the way for legislation to enact a wide-reaching, municipal-led shareable city program. Since its inception, Sharing City has rapidly launched initiatives aimed at nurturing existing Sharing Economy programs, both public and private, and fostering the emergence of new areas of activity. These include: the support of Sharing Economy businesses; administrative and financial assistance to sharing organizations and businesses; and promoting citizen engagement through festivals, public hearings and lectures, workshops, courses, and a range of public art events.[46]

Seoul's municipal government has leveraged the city's densely populated form, specifically the high proportion of people living in apartment blocks, to catalyze the creation of in-building lending libraries. It is further leveraging the internet and mobile platforms to connect the city's tech-savvy citizenry into the Sharing Economy, and supporting tech start-ups aimed at spreading sharing throughout the city.[47]

### POLICY FOR THE SHARING ECONOMY

Seoul tackled the regulatory side of Sharing City in a pragmatic way, first establishing a baseline definition of sharing organizations and businesses to determine eligibility for government support and the issuance of certifications, before embarking on its ambitious program of support.48 The city has been systematic in its approach to enacting Sharing City, identifying three areas of core activity for the municipal government: 1) changing outdated laws and systems; 2) supporting the development of sharing enterprises; and 3) fostering participation by the city's population.

> *"The city needs to build infrastructure such as law, institution and social trust capital – the city needs to pave the way and strengthen the ecosystem for the Sharing Economy to thrive."*[49]

– In-dong Cho, Director General of the Seoul Innovation Department

In order to build social trust of Sharing Economy enterprises, the government is officially supporting sharing businesses which lends credibility that would otherwise take time to build. Because citizens deem government-endorsed businesses trustworthy, they experience growth – in some cases doubling sales over the course of a single year.[50]

The municipal government is not taking a radically top-down approach to supporting the Sharing Economy; rather, it sees itself as playing a partnership role with emerging sharing initiatives.[51] This blending of public and private activity towards a common goal is a hallmark of Korean development policies. An interesting extension of Korea's development policy legacy into the emerging Sharing Economy is Seoul's banning of Uber. The city has decided to develop its own app to link into the existing official taxi industry, essentially integrating the taxi service into the broader municipal transportation system.[52]

### INTERNATIONAL NOTORIETY

Sharing City Seoul has become relatively well known for its Sharing Economy activities in a very short span of time. Around the world, an increasing number of cities are starting to experiment with municipality-led shareable city initiatives based on the Seoul's Sharing City model.[53]

1 Sadhu A. Johnston, Steven S. Nicholas, and Julia Parzen. The Guide to Greening Cities (Washington DC: Island Press, 2013), 53.

2 Angela Vincent. *ICLEI's Sustainability Planning Toolkit*, Massachusetts Association of Planning Directors, 5 June 2013. http://www.slideshare.net/mapdadmin/iclei-sustainability-toolkit-mapd-2010

3 http://www.sustainablecommunitiesleadershipacademy.org/workshops/urban-leadership-3

4 https://agenda.weforum.org/2014/11/four-ways-cities-can-embrace-sharing-economy/

5 http://www.shareable.net/sharing-cities

6 Sadhu A. Johnston, Steven S. Nicholas, and Julia Parzen. *The Guide to Greening Cities* (Washington DC: Island Press, 2013), 15.

7 Moore, Jennie. *Ecological Footprints and Lifestyle Archetypes: Exploring Dimensions of Consumption and the Transformation Needed to Achieve Urban Sustainability.* Sustainability 7, no. 4 (2015): 4747-4763.

8 More about the theory of saleability can be found here: http://www.forumforthefuture.org/sites/default/files/images/Forum/Documents/SI%20document%20v4.2%20web%20spreads_1.pdf

9 https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_CASE-STUDIES.pdf

10 https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_Full-Report.pdf ,p. 19

11 https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_CASE-STUDIES.pdf

12 Sadhu A. Johnston, Steven S. Nicholas, and Julia Parzen. The Guide to Greening Cities (Washington DC: Island Press, 2013), 15.

13 http://www.capitalbikeshare.com/home

14 PricewaterhouseCoopers, *The Sharing Economy – Sizing the Revenue Opportunity.* http://www.pwc.co.uk/issues/megatrends/collisions/sharingeconomy/the-sharing-economy-sizing-the-revenue-opportunity.jhtml

15 Ibid.

16 City of Vancouver 2010 report with 2015 current on-street policy and car-sharing recommendation for reserved on-street car-sharing parking spaces and residential parking permits for car-share vehicles:
http://former.vancouver.ca/ctyclerk/cclerk//20100119/documents/ttra2.pdf
Minutes noting unanimous approval by Council: http://former.vancouver.ca/ctyclerk/cclerk/20100119/documents/ttraminutes.pdf

17 Peter Plastrik, and Julia Parzen. *Toward a Sustainable City: The State of Innovation in Urban Sustainability.* Urban Sustainability Directors Network. Innovation Network for Communities. (September 2013), 9. http://usdn.org/uploads/cms/documents/state-of-innovation.pdf

18 Ibid., 10

19 Ibid., 9.

20 As we note in Chapter 2, the USDN's Working Group on Social Equity definition is "fair access to basic environmental health and safety, opportunities for livelihood and economic well-being; educational, social and environmental resources; full participation in the political and cultural life of the community; and self-determination in meeting fundamental needs and achieving one's full potential."

21 City of Portland, Bureau of Planning and Sustainability (BPS), Equity Tool and Climate Equity Implementation Guide, 2015. http://www.portlandoregon.gov/bps/article/463573

22 Center for a New American Dream and Policy Interactive, *New American Dream Survey 2014: A Public Opinion Poll*. www.newdream.org/poll2014

23 Schor, Juliet. *Debating the Sharing Economy*. Great Transition Initiative. October (2014), 8-10. http://www.greattransition.org/publication/debating-the-sharing-economy

24 Ibid.; http://www.theguardian.com/sustainable-business/2014/nov/12/algorithms-race-discrimination-uber-lyft-airbnb-peer

25 http://julianagyeman.com/2014/07/beyond-sharing-economy-case-sharing-cities/

26 http://usdn.org/uploads/cms/documents/usdn_equity_scan_sept_2014_final.pdf

27 http://www.portlandoregon.gov/bps/62922

28 http://www.kingcounty.gov/elected/executive/equity-social-justice.aspx

29 http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=d84ae03bb8d1e310VgnVCM10000071d60f89RCRD

30 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3748276/
http://invisiblecyclist.com/2014/07/09/retrofitting-equity-and-justice/

31 https://www.niceridemn.org/news/2014/07/21/134/orange_a_new_outreach_effort_from_nice_ride_minnesota/

32 http://incompletestreets.com/2014/11/niceride-bikeshare-hoffman/

33 http://www.peopleforbikes.org/blog/entry/nicer-rides-for-all-neighborhoods-equity-efforts-in-minnesotas-bike-share

34 http://invisiblecyclist.com/2014/07/09/retrofitting-equity-and-justice/

35 Better Bike Share Partnership (BBSP) is a collaboration between PeopleForBikes, the City of Philadelphia, Bicycle Coalition of Greater Philadelphia and the National Association of City Transportation Officials (NACTO);
https://nextcity.org/daily/entry/bike-share-partnership-award-375000-bike-share-equity-work
http://www.peopleforbikes.org/blog/entry/6-bike-share-cities-you-should-watch-grant

36 Schor, Juliet. *Debating the Sharing Economy*. Great Transition Initiative, October (2014). http://www.greattransition.org/publication/debating-the-sharing-economy

37 http://www.modo.coop/blog/how-the-sharing-economy-is-shaping-vancouver-via/

38 http://www.metrovancouver.org/services/regional-planning/PlanningPublications/1507_PPE_MV_Car_Share_Study_14Oct20HR.pdf

39 http://vancouver.ca/green-vancouver/greenest-city-action-plan.aspx

40 http://www.modo.coop/blog/how-the-sharing-economy-is-shaping-vancouver-via/

41 https://vancouver.myturn.com/library/inventory/browse

42 http://vancouver.ca/news-calendar/unique-partnership-launches-vancouver-s-first-innovative-green-recycling-hub.aspx

43 http://ponderresearch.co/projects/the-sharing-project/

44 http://citystudiovancouver.com/what-we-do/

45 http://citystudiovancouver.com/

46 http://english.sharehub.kr/wp-content/themes/sharehub/report.pdf

47 http://www.shareable.net/blog/sharing-city-seoul-a-model-for-the-world

48 http://english.sharehub.kr/wp-content/themes/sharehub/report.pdf

49 http://www.shareable.net/blog/sharing-city-seoul-a-model-for-the-world

50 http://www.shareable.net/blog/sharing-city-seoul-a-model-for-the-world

51 Ibid.

52 http://www.shareable.net/blog/why-banning-uber-makes-seoul-even-more-of-a-sharing-city

53 http://www.theguardian.com/sustainable-business/2015/mar/12/disruption-challenge-neoliberalism-commons-political-system

# 7.

# SHARING ECONOMY RESOURCES

CHAPTER AUTHORS:
Lindsey Ridgway with Rosemary Cooper and Vanessa Timmer

# Table 7.1
## SHARING ECONOMY NETWORKS & EXPERTS: WHO'S DOING WHAT?

| ORGANIZATIONS & EXPERTS | WHAT THEY OFFER |
|---|---|
| **Center for New American Dream (founded 1997)**<br>http://newdream.org<br>· 501(c)(3) non-profit<br>· Full staff, board, budget, fundraising | · "Collaborative Communities" initiative<br>· Produces tools and resources:<br>– Guide to Sharing<br>– Guide to Going Local<br>– CommunityShare Training Workshops |
| **Collaborative Consumption Curators**<br>http://collaborativeconsumption.com<br>· Global (30+ countries) network<br>· Initiative of Collaborative Consumption and Collaborative Lab | · Writing, speaking, curated content<br>· Global thought leadership<br>· Raise voice and profile of Curators<br>· Network effects and Curator cross-learning |
| **OuiShare (founded 2011)**<br>http://ouishare.net<br>· French non-profit<br>· HQ in France, European-wide presence, also in Brazil / South America<br>· Crowd / 'swarm' / organic approach – difficult to assess governance structure<br>· Funding from sponsorships; barter and donations; debate about revenues / income | · Global "city tours" (locally led): informal education and awareness-building; social events<br>· OuiShare Fest (annual marquis event in Paris)<br>· Online content – OS Connector community<br>· Focus on non-monetized platforms, New Economy (beyond #collcons), P2P models |
| **Peers (founded 2013)**<br>http://peers.org<br>· 501(c)(3) non-profit<br>· B corp subsidiary<br>· Board of Directors + advisors<br>· Team: ~10 F/T employees<br>· Funding from Omidyar Network, individual VCs in sharing economy | · Mission: "to grow, protect and mainstream the sharing economy"<br>– Grow: help people connect (suppers, share fairs)<br>– Protect: member campaigns and petitions<br>– Mainstream: raise profile and visibility (media)<br>· Grassroots focus: member-driven initiatives<br>· Do: grassroots advocacy<br>· Do not: work directly with local governments |
| **Shareable (founded 2009)**<br>http://shareable.net<br>· 501(c)(3) non-profit<br>· Small team (2.5 employees)+ many media 'contributors' / writers<br>· Funding from various small foundations and individuals | · Founded as a media portal / magazine (Shareable.net); many contributors and articles<br>· Since 2013, also on-the-ground grassroots pilots – "Sharing Cities Network": grassroots leaders<br>· Do: grassroots and crowdfunded initiatives<br>· Do not: focus on local government engagement<br>· Prefer: non-tech-enabled / non-monetized models |

| ORGANIZATIONS & EXPERTS | WHAT THEY OFFER |
|---|---|
| **April Rinne**<br>http://aprilrinne.com | April is a sharing economy and Sharing Cities expert, focusing on the linkages and opportunities between the sharing economy and cities; policy; travel and tourism; and emerging markets. She advises companies, local and national governments, entrepreneurs, think tanks, investors and development banks, working across for-profit and non-profit models. She is a skilled public speaker and facilitator who has presented to executives and practitioners on five continents about a wide range of topics, from policy reform to urban resilience, sustainability and the future of work and labor. She contributes regularly to news and media about the sharing economy.<br><br>Previously April was Chief Strategy Officer at Collaborative Lab, where she built and led the Lab's Shareable Cities practice. She also advises numerous enterprises, ranging from BOP marketplace creation to trust, alternative currencies and new forms of insurance, across a range of developed and emerging economies.<br><br>April is a Young Global Leader at the World Economic Forum where she leads the Sharing Economy Working Group and serves on the Urbanization advisory group. She also serves on the Advisory Boards for Seoul Sharing City (South Korea), Amsterdam (The Netherlands) and the National League of Cities (USA). She is a Director of the World Wide Web Foundation and a member of REX. She is an avid globetrotter, having traveled to 90 countries (at last count) and worked in more than 50, and does a mean handstand. |
| **Lisa Gansky**<br>http://lisagansky.com | Lisa Gansky is an entrepreneur, investor, speaker and author of the bestselling book, The Mesh: Why the Future of Business is Sharing and the chief instigator of Mesh Labs www.meshing.it (a global directory for the sharing economy). She works in the design of new products, policies, services, partnerships and models in which 'access' to goods, services and talent triumphs over the ownership of them. Lisa invests, advises, speaks and writes on the topics of innovation, collaboration and the Sharing Economy including: cities as platforms, power of peers, shareable business models, building trust in a shared world, the hidden value in waste, and the rise of entrepreneurship. |

## 7.2
## SHARING ECONOMY READS


**"2014: The Year of Collaborative Consumption".** In Good Money, Edition 2. Australian Ethical. 20 February 2014. https://www.australianethical.com.au/news/collaborative-consumption/

Agyeman, Julian, Duncan McLaren, and Adrianne Schaefer-Borrego. **"Briefing: Sharing Cities".** 'Big Ideas' Project. Friends of the Earth. September 2013. http://www.foe.co.uk/sites/default/files/downloads/agyeman_sharing_cities.pdf

Bliss, Sam. **"The Sharing Economy is Bullsh!t. Here's How We Can Take It Back."** In Grist Magazine. http://grist.org/politics/the-sharing-economy-is-bullsht-heres-how-we-can-take-it-back/

Demailly, Damien, and Anne-Sophie Novel. **"The Sharing Economy: Make it Sustainable."** Institut du développement durable et des relations internationals (IDDRI). Study: New Prosperity 3,14. 14 July 2014. http://www.iddri.org/Evenements/Interventions/ST0314_DD%20ASN_sharing%20economy.pdf

Mastny, Lisa, Wendy Philleo, and Wen Lee. "**New Dream Community Action Kit: Guide to Sharing: Exchanging Stuff, Time, Skills, and Space."** The Center for a New American Dream, and Shareable. 25 April 2012. https://www.newdream.org/programs/collaborative-communities/community-action-kit/sharing

Orsi, Janelle, Yassi Eskandari-Qajar, Eve Weissman, et al. "**Policies for Shareable Cities: A Sharing Economy Policy Primer for Urban Leaders."** Shareable, and Sustainable Economies Law Center. 9 September 2013. http://www.shareable.net/blog/new-report-policies-for-shareable-cities

Rinne, April. **"Top 10 Things a City Can Do To Become a Shareable City."** Collaborative Consumption, 5 February 2014. http://www.collaborativeconsumption.com/2014/02/05/top-10-things-a-city-can-do-to-become-a-shareable-city/

Rinne, April, et al. "**Circular Economy Innovation & New Business Models Initiative – Young Global Leaders Sharing Economy Working Group Position Paper."** World Economic Forum, Young Global Leaders Sharing Economy Working Group. 2013. http://www.collaborativeconsumption.com/2013/06/13/report-world-economic-forum-sharing-economy-position-paper/

Schor, Juliet. **"Debating the Sharing Economy."** Great Transition Initiative. October 2014. http://www.greattransition.org/images/GTI_publications/Schor_Debating_the_Sharing_Economy.pdf

Stokes, Kathleen, Emma Clarence, Lauren Anderson, and April Rinne. **"Making Sense of the UK Collaborative Economy."** Nesta, and Collaborative Lab. September 2014. http://www.nesta.org.uk/sites/default/files/making_sense_of_the_uk_collaborative_economy_14.pdf

# 7.3
## GET INVOLVED: JOIN LISTSERVS, BROWSE RESOURCES, FIND COMMUNITIES, SHARE OPPORTUNITIES

**Center for a New American Dream**
Center for a New American Dream aims to improve well-being by inspiring and empowering all of us to shift the ways we consume. Here you can sign up for newsletters and browse videos, webinars, publications, blogs, and other resources.
https://www.newdream.org

**Collaborative Consumption**
Collaborative Consumption focuses on the ways sharing is reinvented through technology. This site allows to you track upcoming events, use the job board, browse the service directory, and sign up for the latest e-newsletters. http://www.collaborativeconsumption.com

**OuiShare**
OuiShare's mission is to build and nurture a collaborative society by connecting people, organizations and ideas. Here you can become a member, find jobs, access toolkits, join communities, find events, read the OuiShare magazine, and more.
http://ouishare.net/en/

**Peers**
Peers aims to make the sharing economy work for the people who power it. Here you can become a member, find work, manage work, or get advice related to the sharing economy.
http://www.peers.org

**Shareable**
The Sharing Cities Network connects local sharing activists in cities around the world for fun, mutual support, and movement building. Here you can join communities, collaborate, and access SCN Toolkits: http://www.shareable.net/sharing-cities

# 8.

# FINAL THOUGHTS & NEXT STEPS

There are many reasons to celebrate the Sharing Economy. This roadmap provides evidence that some Sharing Economy activities are: reducing waste and greenhouse gas emissions; increasing social connection and wellbeing; building economic and emergency resilience; and supporting social inclusion and equity.

CHAPTER AUTHORS:
Vanessa Timmer (co-lead) and Rosemary Cooper (co-lead)

There is also evidence that some Sharing Economy activities are at odds with city priorities including sustainability. Some are even perpetuating and exacerbating problems by contributing to health and safety risks, negatively impacting workers and vulnerable populations, and accelerating wasteful resource use and climate change.

Whether the Sharing Economy advances urban sustainability depends on what is being shared and the conditions around sharing, and it is also related to ownership models of Sharing Economy actors. Community sharing innovators and cooperative entities appear to be more inherently aligned with sustainability goals while most for-profit models need to explicitly align. Non-profit, social enterprises and public sector vary, but tend to lean towards stronger sustainability alignment too.

Local governments hold the power to shape their response to the Sharing Economy to advance sustainability. They can promote, fund, convene, or partner with the most sustainable sharing innovators and businesses. They can pursue city-led roles such as developing new plans or programs, leading by example, or even owning Sharing Economy activities.

To date, sustainability has not featured strongly in the motivation to regulate the Sharing Economy as compared with the desire to ensure fair business practices and to address safety, liability, affordability, or worker protection concerns. Local governments can shape regulatory frameworks to address this gap and support Sharing Economy activities with promising sustainability benefits. Likewise, where necessary, cities can oppose or stop those Sharing Economy activities that show evidence of unacceptable risks or sustainability outcomes.

Each city government is making different decisions about how to engage with the Sharing Economy based on their unique goals, priorities, assessment of risks, and resources.

*This roadmap encourages local governments to **use the Sharing Economy as a tool** to help create just, resilient, liveable, and ecologically sustainable cities that ensure quality of life for all equitably within ecological limits.*

## 8.1 SUGGESTIONS FOR FURTHER ANALYSIS AND ACTIONS

The Sharing Economy field is rapidly evolving and covers areas and sectors that are not explored in this roadmap.

Areas of promising further investigation and support include:

- Opportunities for **collaboration amongst cities** to collectively develop and advocate for the most effective policy and regulatory responses to the Sharing Economy and scale up their efforts;
- Strategies for **addressing data gaps** in order to support evidence-based decision making by local governments to advance more sustainable cities;
- Support for the launch of **city-based Sharing Economy pilots** that advance sustainability, including those with both low and high levels of effort;
- Further analysis on **how local government roles vary in relation to Sharing Economy actors**, including

across business or organizational model and scale of operations (e.g. large for-profit platforms, community sharing initiatives at neighbourhood scales, and cooperative sharing entities at different scales);

- Clarification in terms of the **evolving roles of local governments as Sharing Economy activities mature and change over their innovation life cycles**;
- Exploration of **strategies for including sustainability concerns in Sharing Economy regulations** in order to provide effective oversight that manages risks while encouraging positive innovation;
- **Application of the sustainability filter to other Sharing Economy areas** including shared skills, shared finance, shared education, and a greater in-depth analysis of shared food and energy; and
- **Exploration of the roles of other actors** such as companies, national governments, industry associations, universities, cooperatives, and investors in supporting Sharing Economy activities that advance sustainability.

The Sharing Economy is a subset of activity in the consumption and production system. Sustainable consumption and production (SCP) is a promising area for innovation and there is a commitment among city members of USDN to implement SCP communication strategies and actionable programs and policies. This roadmap is a contribution to this larger effort.

## 8.2 ENGAGING STRATEGICALLY WITH THE SHARING ECONOMY

There are a number of recommendations in this roadmap as to how local governments can engage strategically with the Sharing Economy; however, we also recommend not letting enthusiasm and publicity about the Sharing Economy distract us from focusing on existing local government programs and activities that effectively advance sustainability. For example, shared mobility should be viewed as a complement to, and extension of, local mass transit. The effective integration of transportation and land use with high quality urban design – including equitable transit-oriented development – should remain a key area of focus.

This roadmap encourages municipal leaders to make use of Sharing Economy opportunities where they align with and advance city priorities, but continue to focus their resources on established policies and programs that advance sustainability. In fact, it is not necessary to link an existing or emerging set of policies and programs to the Sharing Economy if it is already supported as part of other city platforms such as 'healthy cities' or 'resilient cities'.

One of the most promising aspects of the Sharing Economy is the way it encourages us to explore and make use of underutilized assets and services. When engaged with strategically, the Sharing Economy can be harnessed to serve local government priorities and to create better cities.

# APPENDICES: SAMPLE CITY ORDINANCES, SURVEYS AND LEGISLATION

# LOCAL GOVERNMENT MATERIALS:
## SAMPLE ORDINANCES, BYLAWS, LIABILITY WAIVERS

The following is a selection of sample local government materials that can serve as templates for other city and provincial governments as they develop their own ordinances, bylaws and waivers related to the Sharing Economy.

## CANADA

### GOVERNMENT OF QUÉBEC VACATION RENTALS
Ch 3b: Shared Spaces

Tourist Accommodation Classification

http://citq.qc.ca/en/classification.php

Regulation respecting tourist accommodation establishments

http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=3&file=/E_14_2/E14_2R1_A.HTM

An Act Respecting Tourist Accommodation Establishments (Sept 2015)

http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/E_14_2/E14_2_A.html

### CITY OF TORONTO CAR-SHARING PERMIT APPLICATION PROCESS
Ch 3a: Shared Mobility

Toronto City Council authorized the expansion of the car-share vehicle parking area program to a maximum of 40 spaces per year (10-20 CVPA locations, subject to the number of spaces at each area). Car-share Organization/Companies can submit applications to Transportation Services for the creation of additional CVPAs.

http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=efd6a84c9f6e1410VgnVCM10000071d60f89RCRD&vgnextchannel=cd4c4074781e1410VgnVCM10000071d60f89RCRD

### VANCOUVER CARSHARING ALLOWANCES
Ch 6: Strategic Opportunities

City of Vancouver 2010 report with 2015 current on-street policy and car-sharing recommendation for reserved on-street car-sharing parking spaces and residential parking permits for car-share vehicles: http://former.vancouver.ca/ctyclerk/cclerk//20100119/documents/ttra2.pdf

Minutes noting unanimous approval by Council: http://former.vancouver.ca/ctyclerk/cclerk/20100119/documents/ttraminutes.pdf

### VANCOUVER COHOUSING BYLAWS
Ch 3b: Shared Spaces

The City of Vancouver, Canada changed its rezoning bylaw in 2013 to enable development of cohousing. Detailed report at: http://www.mayorofvancouver.ca/cohousing

## USA

### SEATTLE, WASHINGTON CAR2GO SURVEY
Ch 3a: Shared Mobility

Free-Floating Car-Share Ordinance

http://www.seattle.gov/council/committees/transportation/attachments/transp%20comm%20free%20float%20car%20memo.pdf

### AUSTIN, TEXAS SHORT-TERM RENTAL
Ch 3b: Shared Spaces

Austin STR Ordinance No. 20130926-144: http://www.austintexas.gov/edims/document.cfm?id=199458

### PORTLAND, OREGON SHORT-TERM RENTAL
Ch 3b: Shared Spaces

Portland's Accessory Short Term Rental Ordinance: https://www.portlandonline.com/auditor/index.cfm?c=28197&a=501886

Airbnb's (redacted) agreement with the City of Portland: http://www.documentcloud.org/documents/1223398-lodging-tax-agreement-between-Airbnb-and-the.html#document/p10/a167057

### SAN FRANCISCO, CALIFORNIA
### SHORT-TERM RENTAL
Ch 3b: Shared Spaces

Short-term Residential Rental Ordinance: http://sf-planning.org/index.aspx?page=4004

### STATE OF CALIFORNIA
### SHORT-TERM RENTAL
Ch 3b: Shared Spaces

A bill enabling municipalities to pass legislation requiring STR platforms to disclose this type of data is making its way through the State of California legislative process now. State of California's Thriving Communities and the Sharing Economy bill SB-593: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB593

### CITY OF SAN DIEGO
### SHORT-TERM RENTAL
Ch 3b: Shared Spaces

Prospective San Diego Short Term Vacation Rental / Home Sharing Regulations: http://www.sandiego.gov/planning/community/cpc/agendas/Short-Term-Vacation-Rental.pdf

### STATE OF CALIFORNIA
### COOPERATIVE HOUSING
Ch 3b: Shared Spaces

Amendment to State of California legislation to reduce burdens on cooperative housing; passage of bill AB 569 in September 143:

tinyurl.com/qb6fqax and https://www.d3n8a8pro7vhmx.cloudfront.net/theselc/pages/108/attachments/original/1412098276/20130AB56993CHP.pdf?141209827

### LOS ANGELES
### DATA SHARING
Ch 5: Addressing Data Gaps

Data-sharing partnership agreement – City of Los Angeles and Waze: http://clkrep.lacity.org/onlinedocs/2014/14-1741-S1_mot_04-28-2015.pdf

### PORTLAND AND RIDESHARING (UBER, LYFT, ETC.)
Ch 5: Addressing Data Gaps

Interim Administrative Rule for Transportation Network Companies: http://www.portlandoregon.gov/transportation/article/528139

### HENNEPIN COUNTY, MINNESOTA
### FIX-IT CLINICS
Ch 4: Community Sharing

See below for Fix-it Clinic Release Form, Informed Consent Form, Participant Survey.

# Hennepin County Fix-It Clinic Release Form

Thank you for participating in the Hennepin County Fix-It Clinic Program (the "Program"). These services are provided free of charge. Because this Program uses volunteers, Hennepin County cannot guarantee the integrity, usability or effectiveness of the repairs undertaken at the Program. Neither Hennepin County nor its employees, agents or volunteers accept any liability for any damage or injury to person or property resulting from the use of item/s repaired.

In consideration of being allowed to participate in the Program at no cost to me, I hereby waive, release and forever discharge Hennepin County, its employees, agents and volunteers, and any others acting on their behalf, from any and all responsibilities or liability from damages or injuries of any kind to my property, anyone else's property, or to me or any other person, in my party or otherwise, as a result of my participation in this Program.

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

Signature _____ Phone _____

Print name _____ Date _____

**Hennepin County**
Environmental Services
612-348-3777

**Hennepin County**
**Informed Consent Form**
**(Environmental Services – Fix-It Clinic Program)**

I, _____, am requesting to be allowed to participate as a volunteer in the Fix-It Clinic program (hereinafter the "Program").

Volunteers participate in the Program at their own risk. I understand that Program activities may involve certain inherent risks, including the risk of physical injury. I currently have no known physical condition that would impair my ability to participate in the Program, including, but not limited to, engaging in vigorous physical activities. I have carefully considered the risks involved and voluntarily agree to participate in the Program.

I have carefully read and fully understand everything written on this form.

_____ Date _____
Participant's Signature

Participant's Name (Printed) _____

If a participant is a minor, this form must also be signed by a parent or guardian.

I give permission for my child to participate as a volunteer and agree to be bound by the conditions stated in this Informed Consent Form.

_____ Date _____
Parent or Guardian's Signature
(if participant is younger than 21 years of age)

Return completed Volunteer Informed Consent Form to:

Nancy Lo
Hennepin County Dept. of Environmental Services
701 4th Ave S, Suite 700
Minneapolis MN 55415

# Fix-It Clinic Participant Survey

Thank you for participating in this event. This survey is for research purposes only and will help us improve future events.

**1. How did you learn about this event?**

- ☐ City newsletter
- ☐ Television
- ☐ Social media (Facebook/Twitter)
- ☐ Hennepin County website
- ☐ Newspaper (Which one? _____ )
- ☐ City website
- ☐ Word of mouth—neighbor, friend, family, etc.
- ☐ Other _____

**2. Which city do you live in?** _____

**3. Have you attended a Fix-It Clinic event in the past?** ☐ Yes ☐ No

**4. What item(s) did you bring?** 1) _____ 2) _____ 3) _____

**5. Did it/they get fixed?** 1) ☐ Yes ☐ No ☐ Other 2) ☐ Yes ☐ No ☐ Other 3) ☐ Yes ☐ No ☐ Other

**6. Why did you attend this event? Choose all that apply:**

- ☐ Didn't want to buy something new
- ☐ Community/meeting new people
- ☐ Free assistance
- ☐ Provided motivation to act
- ☐ Saving money
- ☐ Learning new skills
- ☐ Thought item could be repaired but didn't know how
- ☐ Other(s) _____
- ☐ Didn't want to throw something away
- ☐ Convenient location

**7. How long did you wait to be helped?** ☐ 0-14 minutes ☐ 15-29 minutes ☐ 30 minutes or more

**8. How long did you work on your item?** ☐ 0-14 minutes ☐ 15-29 minutes ☐ 30 minutes or more

**9. How satisfied were you with this event?** ☐ Very satisfied ☐ Satisfied ☐ Somewhat satisfied ☐ Unsatisfied

**10. Do you have any additional comments, or suggestions for improving future Fix-It Clinics?**

_____

_____

34-602-07-14

Hennepin

**Hennepin County**
*www.hennepin.us/FixItClinic*

## ABOUT ONE EARTH

One Earth is a Vancouver-based non-profit organization focused on sustainable consumption and production across scales. One Earth led the development of the Local Government and Sharing Economy (LGSE) project, conducted the research, and prepared this roadmap in consultation with an advisory committee and advisors. One Earth is working toward North American leadership in consumption and production and new economies, with partners including the Urban Sustainability Directors Network (USDN), Sustainable Consumption Research and Action Initiative (SCORAI), Canadian Community Economic Development Network (CCEDNet), the Center for a New American Dream, the New Economy Funders Network, the New Economy Coalition, and The Story of Stuff Project. From 2013 to 2015, One Earth was the curator of the New Economies theme of Cities for People, initiated by The J. W. McConnell Family Foundation. The LGSE project is part of Cities for People – an experiment in advancing a movement to create more resilient and livable cities through innovation networks. One Earth is a member of the City of Vancouver Greenest City Advisory Committee, is on the Board of the National Zero Waste Council, and is promoting eco-industrial networking through the National Industrial Symbiosis Program - Canada. One Earth is also a co-founder of the Global Research Forum on Sustainable Production and Consumption and the North American Roundtable on Sustainable Production and Consumption. With international partners, One Earth is catalyzing Disruptive Imaginings: creating better futures – a global initiative aimed at producing positive and compelling visions of life in sustainable futures.

**Contact us**
share@oneearthweb.org

**One Earth Website**
oneearthweb.org

**Project website**
LocalGovSharingEcon.com

one earth

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