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.

CHAPTER AUTHORS:

Vanessa Timmer (lead) with Cora Hallsworth and Dwayne Appleby

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]

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 catchment 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. / 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. / The use of tool libraries can provide affordable access to local businesses.	The use of tool libraries can provide affordable access to residents.

3c.4
SUGGESTED RESOURCES

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.

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/