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Sustainable LA: Lessons from Vancouver

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Authors

Caballero, Sandra
Chan, Daryl
Rüya Cohen, Aysha
et al.

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**SUS
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LA

**LESSONS
FROM
VAN
COU
VER**

A Report on the 2015 Study Tour
UCLA Luskin School of Public Affairs
Department of Urban Planning

May 2015

In March 2015, 14 Urban and Regional Planning graduate students travelled to Vancouver to explore its successes in urban sustainability and to identify lessons we consider applicable to Los Angeles.

The trip was entirely student organized, but benefited from generous material support and recommendations from a number of individuals and organizations in California, British Columbia and beyond. We would like to particularly thank four donors without whom our trip would not have been possible:

The UCLA Luskin Edward Hildebrand Award for Canadian Studies
The UCLA Center for Canadian Studies
The Fulbright Canada-RBC Eco-Leadership Program
The Liberty Hill Foundation

We would like to especially thank the more than 30 leaders in Vancouver who took the time to meet with our group and share their inspirational work. We would like to particularly recognize UCLA's own Neal LaMontagne, who provided exceptional recommendations and showed us his city, rain and shine.

Gratefully,

Sandra Caballero, Daryl Chan, Aysha Rüya Cohen, Michael Janusek, Brittany Jang, Ben Kaufman, Naria Kiani, Laura Krawczyk, Rachel Lindt, Jeff Loi, Brianne Masukawa, Aaron Ordower, Casey Osborn and Jimmy Tran

The UCLA Vancouver Study Tour
May 2015

UCLA Luskin



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INTRO DUCTION TION

What can Los Angeles learn from Vancouver? While both are dense, diverse, cosmopolitan cities bounded by mountains, LA's sister city to the north is renowned for its compact development and walkable neighborhoods. Vancouver is a model of sustainability, largely due to planning efforts focused on smart growth and environmental protection.

Just recently Los Angeles unveiled its Sustainable City pLAN, which in many ways parallels Vancouver's 2011 Greenest City Action Plan. What will distinguish the two cities' sustainable futures is how strictly they adhere to their visions and how they choose to implement these goals.

In March 2015, a group of 14 UCLA Urban and Regional Planning graduate students travelled to Vancouver to learn first-hand about Vancouver's sustainable planning successes. Students met with over 30 government agencies, non-profits, researchers and private companies working at the front lines of sustainable urbanism. This report highlights a few of the most meaningful lessons learned.

The report is organized around seven lessons which we consider especially applicable and implementable in Los Angeles. Each lesson alludes to an objective from the Sustainable City pLAN. Hashtags at the bottom of each lesson indicate which pLAN sections (economy, environment, equity) the lessons align with.



07
LESSONS
FROM
VAN
COU
VER

LESSON

01

Generate and distribute energy at the neighborhood scale

LA pLAN Objective

Reduce greenhouse gas emissions by 45% below 1990 baseline by 2025

Two of the challenges of generating alternative energy in a large city are reliability (generating consistent supply) and matching the neighborhood aesthetic. Vancouver's Olympic Village and the Southeast False Creek Energy Utility demonstrate that a district approach can overcome these challenges and reduce greenhouse gas emissions.

The Village is a mixed-use residential development originally built to house athletes for the 2010 Olympic Games and now converted into residential housing. The Village is located on a redeveloped brownfield site in Southeast False Creek near Downtown and it is the first community development site in the world to receive LEED-ND (Neighborhood Development) Platinum certification. The Village is an integrated mixed use community connected to public open spaces and innovative water conservation practices.

The Neighborhood Energy Utility System (NEUS) is particularly striking as it employs renewable energy technology to recover heat from wastewater and raw sewage to provide space heating and hot water to all Olympic Village buildings. As far-fetched as the system may seem, the technology is rather practical.

The False Creek Energy Centre works alongside an existing sewage pumping station to recover heat from untreated wastewater. A system of insulated underground pipes circulates hot water from the energy centre to the Olympic Village buildings where an energy transfer station transfers the energy into hot water and space heating to each

residential unit. The system provides 70% of the annual energy demand of the Village, while the remaining 30% is supplemented by natural gas boilers connected to the energy district.¹

In Vancouver, 54% of greenhouse gas emissions come from buildings and that is exactly why the energy district is fundamental.² As part of the Greenest City target to reduce emissions by 33%,³ False Creek reduces the Olympic Village's greenhouse gas emissions by 50% when compared to conventional energy sources.⁴ Not only does the energy system supply clean energy and reduce greenhouse gases, the entire design integrates itself within the community. Below is a list of key implementation and design elements that Los Angeles can look to as inspiration for future sustainable development.

BUILD A DEMONSTRATION SITE IN A NEW DISTRICT, THEN SCALE IT

The NEUS presents a new type of solution to creating a reliable, diverse energy mix: it breaks up the city into manageable energy parcels and focuses on self-generation within those smaller communities. Because the City worked with such a large redevelopment project, there was enough land available to include the energy generation plant. Los Angeles should consider brownfield sites and other large redevelopment projects as opportunities for district energy generation. A local utility was made feasible because it was built in a new neighborhood, the Olympic Village. Now that it has proven successful, Van-



SOURCE: CHRISTOPHER PORTER

cover can focus on building similar utilities in other new neighborhoods, or consider retrofitting old utilities. The Urban Development Institute estimates that it is about \$8,000 to \$9,000 more expensive per unit to retrofit buildings, but the energy prices are often less expensive than conventional natural gas heating.⁵

BUILD BEAUTIFUL ENERGY UTILITIES AND PEOPLE WILL WANT THEM IN THEIR NEIGHBORHOODS

Based on our experience in Los Angeles, energy utility sites tend to be large utility buildings spanning miles of industrial land and intended to provide energy for the entire region. NEUS' design strategically fits into the community aesthetic. One obvious advantage is that the community it serves is a manageable size, making it easier to manage demand. Additionally, it strategically lies at the edge

of the Olympic Village. Two thirds of the facility lies below ground and the other third lies above ground but is tucked under Cambie Bridge. The facility is surrounded by a community garden and is adjacent to a habitat restoration park.

colors that change according to the energy use of Olympic Village residents. Beyond being an interesting art piece, they are an active indicator of energy demand. It is unclear whether this affects residents' energy consumption, nevertheless its an interest-

URBAN ECOSYSTEM

#Environment
#EnergyEfficientBuildings

Alongside the facility stand five colorful exhaust pipes. The steam that is released from these pipes are lit with

ing concept, especially considering that energy consumers are seldom aware of energy use.

LESSON

02

Use data to drive policies that increase access to green space

LA pLAN Objective

Complete tree-canopy registry to document LA's urban forest and direct new planting to neighborhoods most in need

Vancouver has a goal for every resident to live within a half a mile of a park, and 93% of residents already do. Vancouver's parks are well-connected, and integrated into their neighborhoods. The Los Angeles pLAN has set the goal of providing 75% of residents park access within a half mile by 2035.⁶ Despite Mayor Villaraigosa's One Million Trees strategy, currently only 52% of Angelinos do.⁷ Recently, LA has been investing in pocket parks⁸ and green alleys as a way to increase the amount of accessible green space. But how can LA work to ensure that these investments are enough, and that they're in the right places?

Vancouver's Greenest City Action Plan, much like LA's, relies upon quantifiable ways to measure success. One such example was to double Vancouver's urban canopy. Reliable data has made tracking progress possible.

The Department of Parks and Recreation developed an "Urban Forest Strategy" only after they collected baseline information about their urban canopy and greenspace. Using sophisticated LiDar (remote sensing) technology and more routine GIS analysis available to everyday planners, the department discovered that 63% of their tree canopy was on private property. This informed the department to encourage legislation that limited private property owners' ability to cut down trees.

Although LA has similar tree-cutting requirements, we could benefit from knowing how our canopy is distributed

throughout the city. Vancouver has taken their urban forest strategy a step further, by taking a closer look at how evenly green space is distributed between neighborhoods. This is something especially important to Los Angeles, where there is great inequity in the distribution of trees.

Will Vancouver double their canopy and add 150,000 trees? Planners seemed skeptical, and implied that this was a quite a lofty goal. In the end, the numerical goal might matter less than the actual outcome, which is a well-documented and well-formulated plan for more green space in Vancouver. Like LA's One Million Trees program, an ambitious goal should be celebrated.⁹ And a goal backed by data is even better than that.

Shoot for the stars, and you'll end up among the treetops.



URBAN
ECOSYSTEM



EQUITY

#Equity
#UrbanEcosystem

SOURCE: DAVID WISE

LESSON

03

Don't be deterred by setbacks in mobility planning

LA pLAN Objective

Improve pedestrian and bicycle infrastructure and other sustainable transport, emphasizing connections to mass transit

In the 1990s, Vancouver began to embrace alternatives to the automobile. Spurred by the success of the Expo rail line in 1986, Vancouver set forth planning two new lines and rapidly expanding bus service. But public transportation was not the only way the City began rethinking its transportation system. Vancouver also made investments in its bicycle networks, so much so that bicycle trips doubled between 1990-2008.¹⁰ Improvements came in the form of bike lanes, bike parking, bicycle boulevards, and separated bike paths, which enhanced the network throughout the city.

Burrard Bridge is a great example that change did not always come easily.¹¹ The bridge is a major connection point to Downtown jobs. In 1996, the city converted two car lanes on Burrard Bridge into bicycle lanes. The six-month trial was met with so much opposition that it only lasted one week. A second trial was attempted ten years later, only to be shot down again. But the third time was the charm. In 2009, through smart design and strong leadership, Mayor Robertson and city staffers gave the lane the opportunity it needed to succeed. Protected bicycle lanes are now a permanent fixture on the bridge, and the International Journal of Sustainable Transportation heralded the project as a huge success.¹²

There were other streets less suitable for bike lanes, but this did not mean that there was not bike infrastructure. Broadway in the Kitsilano neighborhood is Vancouver's

heaviest traveled bus corridor, with buses arriving at stops every two minutes at peak times. This amount of bus traffic makes the street less suitable for bikes, but Vancouver has a complementary bicycle boulevard on a parallel street, W 8th Ave. The city did more than merely put up signs prioritizing bicycles. Intersecting streets have stop signs, allow bikes to continue forward motion without having to worry about right of way, and roundabouts also help bicyclists avoid conflict. Most importantly the street is well-integrated into the larger network - on the map it is part of a complete grid of green bikeways. Unlike in LA, where a bike lane can often leave you stranded at an unsafe crossing or busy street, Vancouver's bike infrastructure is built so that a bike can actually take you anywhere.

“ **In the 1990s, Los Angeles and Vancouver had nearly identical mode shares.**

In Vancouver today, 44% commute using sustainable modes of transit and 41% of bicyclists are women.

VANCOUVER DEPARTMENT OF ENGINEERING



GREEN
ECONOMY



MOBILITY +
TRANSIT

#Economy #MobilityandTransit
#Equity #LivableNeighborhoods

LESSON

04

Create a space in City Hall for city departments and academic institutions to collaborate on design-build projects

LA pLAN Objective

Create partnerships with higher education institutions to retain high-skill graduates

Imagine if the best and brightest undergraduate students from across Los Angeles' universities assembled for a yearlong studio, under the direction of the Mayor's office, charged with piloting a solution to Sustainable City pLAN objectives. Vancouver's CityStudio demonstrates that when given the proper resources, university students can implement creative and successful sustainability projects.

CityStudio is a one-year program within Vancouver City Hall designed for undergraduate students to co-create solutions with City staff to solve real issues as identified in the Greenest City Action Plan. Each studio is responsible for imagining, designing, and implementing a project, which is executed in conjunction with a city office and then methodically evaluating its success. The idea is to pilot sustainability solutions that take advantage of the creativity of the student participants but that are grounded in City institutions, giving students necessary resources to implement, and if successful, for the City to scale. The program also develops unprecedented civic engagement by exposing students to a career in public service. Examples of past projects include a street-to-public space conversion in Downtown Vancouver, outdoor classrooms in the city, and wayfinding to local food assets.

In its first three years, 127 students participated in the yearlong studio program and earned credit towards their degrees. This required commitment from City Managers to mentor teams of students, as well as a few full time staff to

manage the program, which includes teaching the studios. It also required commitment from the participating universities to grant credit and promote the program. The studio is supported by in-kind city support and corporate donations.

Los Angeles, with its diversity of world class universities, representing effectively every discipline, would be especially well suited to launch its own CityStudio. With the Sustainable City pLAN as a guideline, CityStudio LA could be based in an office such as the City Planning Department's Urban Design Studio or as part of the Mayor's Office of Budget and Innovation, which are already piloting innovative solutions to promote urban sustainability.



TALK TO
US ABOUT
OUTDOOR
LEARNING!



GREEN
ECONOMY

#Economy #ProsperityandGreenJobs
#WorkforceDevelopment

LESSON

05

New development should provide funds for community benefits

LA pLAN Objective

Preserve existing affordable housing

Imagine a city where residents invite new development into their neighborhood because instead of fearing added traffic or changing demographics, they eagerly anticipate the material benefits that will accompany it. Vancouver's strategy for financing growth may be the closest a major North American city has come to linking specific community needs with new real estate development.

Like Los Angeles, the City of Vancouver periodically develops Community Plans which provide long range planning direction at a neighborhood level. In addition to defining land uses and building standards, in Vancouver, these community plans benchmark each neighborhood's physical assets and through a comprehensive consultative process identify neighborhood needs. Recognizing that different neighborhoods start at different points in terms of park coverage, childcare facilities, cultural amenities, and physical infrastructure, the community plans tailor development contributions to match the neighborhood's desires. They gather this information through public events, surveys, focus groups and community meetings. Community plans also define a base density and an upper-bounds density, which can be reached in exchange for providing those defined community benefits.

With this baseline of community needs, Vancouver applies its rigorous regime to capture value from new private development. Since the early 1990s, Vancouver has relied on Community Amenity Contributions from large redevelop-

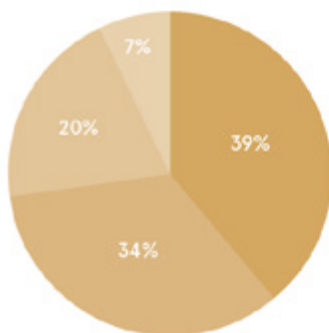
ment projects requiring entitlement change. In 2003, the City passed a "Financing Growth" policy that codified three tiers of development contributions that new real estate development provide to the neighborhoods they are building in:

Development Cost Levies (DCLs), are fees that all new development must pay, even if no zoning change is required. They are similar to Development Impact Fees in California. They can finance parks, childcare facilities, affordable housing, and basic infrastructure.

Community Amenity Contributions (CACs) are expected from developments that require rezoning, and must be delivered to the City before the rezoning is enacted. These are negotiated based on individual project proforma review and are sensitive to the economics of each specific project. CACs support a wider-array of public benefits, as defined by the neighborhood community plan, but can include community centers, daycares, libraries, parks and cultural facilities. Additionally, rezonings require LEED-NC Gold certification, ensuring energy efficiency is a baseline community benefit. Payments can be delivered in kind or through in lieu fees.

Density Bonus Zoning (DBZ) provides a flat rate fee per square foot of "bonus density" built. The bounds of the bonus density are defined in the community plans. DBZ support affordable housing and other community benefits and can be delivered in-kind or in-lieu.

DCLs ALLOCATED
1992-2013



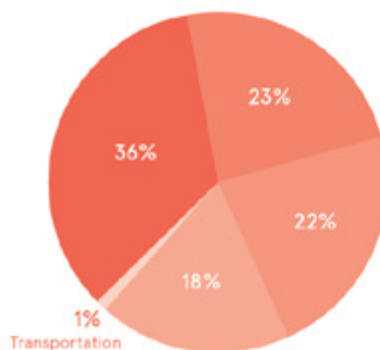
39%
Parks

34%
Housing

20%
Engineering

7%
Childcare

CACs ALLOCATED
2010-2013



36%
Affordable Housing
+ 2,405 market rental units

23%
Heritage

22%
Community Facilities
(Childcare, Social, Cultural, Library)

18%
Parks & Open Space
(Includes Public Art)

SOURCE: VANCOUVER FINANCING GROWTH DEPARTMENT, 2014

In an average year, Vancouver receives 30 to 40 rezoning applications (which require CACs) per year and about 1,500 building permits (which require DCL payments). In 2014, 2,000 citizens identified affordable housing, rapid transit, childcare and community facilities as their top priorities. In the past ten years developer contributions led to: 4,200 affordable housing units, 3,400 licensed childcare spaces and 100 kilometers of bikeways. DCLs go into a general account and can be used across the city while CACs and DBZs must be invested within the neighborhood they occur in.

In California, development impact fees are generally paid on a per-unit basis (though often differentiated whether it is an attached, detached or mobile home). In Vancouver, these fees are levied on a square foot basis, meaning larger units contribute a proportional share of benefit.

The Urban Development Institute, a real estate industry association which

represents more than 650 companies in British Columbia, plays an important role in the formation of these established fees. It ensures that the sort of sensitivity analysis over the quantity and diversity of DCLs per neighborhood is balanced and realistic given acceptable market rate returns. Another example of their advocacy was the campaign to eliminate parking requirements for rental apartments in Vancouver and neighboring West-

It is not uncommon for large projects that require entitlement change in Los Angeles to offer community benefits that include open space, affordable housing or cultural amenities. However, Vancouver's model effectively preempts this negotiation in advance, and provides developers a clear menu of what is expected if they wish to change zoning or increase density.

GREEN ECONOMY **HOUSING + DEVELOPMENT**

#Economy
#HousingandDevelopment

minister as a strategy to create more rental units.

LESSON

06

Increase housing affordability by encouraging “hidden density”

LA pLAN Objectives

1. Streamline the building of TOD and affordable housing
2. Pilot new regulations governing second units and granny flats
3. Revise parking management to align with new infrastructure and mobility options

Without a doubt, the single biggest challenge facing Vancouver is the scarcity of affordable housing. Vancouver is such a desirable place to live (and invest in real estate), that Vancouver was recently identified as the second most expensive city in the world after Hong Kong.¹³ The same beautiful waterfront and mountains that attract residents, have physically constrained development. Nearly built-out, it is rumored that there is not a single-family lot left to be developed. It appears the only land-uses available for new development within the city are on the shrinking number of brownfield industrial sites.

Given this scarcity of available land, the city is piloting an innovative approach to create new housing on existing single family lots.¹⁴ Starting in 2010, the City of Vancouver legalized the conversion of garages that face alleys (called laneways in Canada) into apartments. The City has already permitted 1,000 laneway homes,¹⁵ adding needed rental units to the housing stock, particularly in built-out neighborhoods of mostly single-family homes. This innovative policy allows homeowners an auxiliary source of income for mortgage payments, and assists elderly family members to age in place nearby relatives. Laneway homes also allow young adults to live independently in the neighborhoods where they grew up, increasing the diversity and generational mix of a neighborhood.

A few key decisions help ensure laneway homes remain affordable. First, property is not allowed to be subdiv-

ed, which restricts laneway homes from being sold. This guarantees that laneway homes add to the rental stock. Second, even though they are located in residential areas, the parking requirements are at the parcel level¹⁶ meaning laneway homes do not require additional parking spots. This reduces development costs and adds flexibility on smaller lots. Similarly, laneway homes are not required to comply with standard setback requirements, meaning the home can come all the way up to the lot line.

Los Angeles already identified new regulations governing second units and granny flats (sometimes known as in-law units) as part of its strategy to increase the supply of rental housing. The City’s small lot ordinance is another example of innovation in this area. LA should explore Vancouver’s success with this model. Many small lots in LA are effectively precluded from building second units given current setback and parking standards. Laneway housing is an ideal way to increase the density and affordability of neighborhoods with single-family homes. Best of all, this “hidden density”¹⁷ does not change the character of a neighborhood, providing a more palatable alternative to neighborhoods that fear increased development.



6330



HOUSING +
DEVELOPMENT



MOBILITY +
TRANSIT

#Economy #MobilityandTransit
#HousingandDevelopment

LESSON

07

Promote adaptive reuse of large public or privately-owned buildings for affordable housing

LA pLAN Objective

Streamline the building of TOD and affordable housing

As rents rise in Vancouver's Downtown Eastside, there is a looming question of whether or not there will still be room for low-income residents in the neighborhood known as "Canada's poorest postal code." The Downtown Eastside, or DTES, is analogous to Los Angeles' Skid Row with exceedingly high rates of poverty, drugs, and mental illness. Development pressure is visible, with new high-end coffee shops and luxury condominiums built adjacent to social housing projects. Vancouver recognizes adaptive reuse as a practical way to preserve its heritage buildings and reduce upfront construction costs for buildings with social purposes, such as low-income housing. The City is working with developers and nonprofit housing providers to identify unused government properties and other large vacant buildings to create low-income housing and stabilize the community's existing residents.

The 250 Powell social housing complex is particularly poetic example of adaptive reuse. The monolithic 1973 former remand center used to hold prisoners awaiting trial, but has been vacant since its closure in 2002, despite an operating juvenile court facility on the ground floor. The Bloom Group is converting the former jail to serve as housing for at-risk aboriginal youth and other low-income tenants. The 96-unit adaptive reuse project will be a mixed-income community, with social units cross-subsidized by low-end market units. Units that are paid for through individuals with allocated shelter allowance, a program similar to Section 8 project-based subsidies,

will generate enough revenue to subsidize lower-income units. The design features smaller units, with studios up to 485 square feet and one-bedroom units up to 590 square feet.¹⁸ These smaller sizes, while sometimes more costly per square foot, reduce overall cost to renters. British Columbia's Housing Minister Rich Coleman has supported the project's adaptive reuse of the building, saying that this drastically reduces the overall construction cost and makes the project financially feasible. The project was also made possible through funding by BC Housing, the City of Vancouver, and the national government. As Vancouver's DTES is challenged with meeting the needs of both low-income residents and an influx of new higher-income businesses and residents, 250 Powell St. demonstrates the ability to harmoniously balance past with present.

The United States Federal Real Property Council and Government Accountability Office estimates that there are nearly 1,000 vacant or underutilized government buildings in California, and up to 77,000 across the country.¹⁹ This national building stock includes office towers, warehouses, veterans affairs properties, and operations buildings, and may be costing taxpayers a total of \$1.7 billion in annual maintenance expenses. Furthermore, this represents potential missed opportunities in Los Angeles, a city hard-pressed to increase its housing supply.

As the government continues to right size and dispose of unused buildings, Los Angeles should prioritize adaptive



SOURCE: HENRIQUEZ PARTNERS ARCHITECTS

reuse by community-serving social purposes. Steps have been taken by cities in the United States to expedite these interactions. In 2004, San Francisco passed the Surplus Property Ordinance which gave the Mayor's Office of Housing authority to repurpose the city's vacant properties for homeless and low-income housing. Current federal policy stipulates the disposition process to first offer properties to federal, state, and local agencies for absorption, followed by offers to nonprofits and finally assessments to determine feasibility as homeless shelters. A streamlined process would facilitate a greater utilization of these buildings for the public good.²⁰



GREEN
ECONOMY



HOUSING +
DEVELOPMENT

#Economy
#HousingandDevelopment

LOCAL EXPERTS

INDIVIDUAL

Andy Yan
Ian Fisher
Vic Frieseny
Lon LaClaire
Krisztina Kassaye
Neal LaMontagne
Lena Soots
Dana McDonald
Eugenio Cornejo
Sam Cameron
Bill Briscall
Gary Killacky
Doug Smith
Jonathan Oldman
Trudi Shymka
Bill Knight
Phil Kehres
Sarah Tseng
Martin Wachs
George Benson
Kelsey Taylor
Scot Hein
Gavin Duffus
Patrick Santoro
Dave Hutch
Matthew Roddis
Nack Page
Zane Hill

AGENCY OR ORGANIZATION

Bing Thom Architects
British Columbia Rapid Transit Company
British Columbia Rapid Transit Company
City of Vancouver, Streets and Transportation
City of Vancouver, Viva Vancouver
City of Vancouver / UCLA
CityStudio, City of Vancouver
Evergreen BC
LaneFab
"Livable Laneways Project/Vancouver Public Space Network"
RainCity Housing
Southeast False Creek Neighbourhood Energy Utility
Sustainability Group, City of Vancouver
The Bloom Group
The Bloom Group
TransLink
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TransLink
UCLA Luskin School of Public Affairs
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University of British Columbia
Urban Development Institute
Urban Development Institute
Vancouver Board of Parks and Recreation
Vancouver Board of Parks and Recreation
Vancouver Board of Parks and Recreation
Vancouver Board of Parks and Recreation

END NOTES

- 01 Vancouver Neighborhood Energy Utility District Factsheet
- 02 U.S. Energy Information Analysis (EIA) Greenhouse Gas Emissions Overview
- 03 From 2007 levels
- 04 Vancouver Neighborhood Energy Utility District Factsheet
- 05 LA's tree planting program: <http://www.cityplants.org/>
- 06 https://www.tpl.org/sites/default/files/files_upload/2014_CityParkFacts.pdf
- 07 50 new parks initiative: <http://nextcity.org/daily/entry/los-angeles-new-parks-50-parks-initiative-progress>
- 08 LA BSS Tree Removal Policies: <http://bss.lacity.org/UrbanForestry/FAQs.htm>
- 09 <http://articles.latimes.com/2013/apr/23/opinion/la-ed-million-trees-mayor-villaraigosa-20130423>
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- 11 Ibid.
- 12 <http://www.tandfonline.com/doi/abs/10.1080/15568318.2014.890767>
- 13 Cox, Wendell, Pavletich, Hugh. (2014). 11th Annual Demographia International Housing Affordability Survey. <http://www.demographia.com/dhi.pdf>
- 14 This is in addition to previously allowed secondary suites, which means Vancouver homeowners can build up to two additional units on their land. This means that up to 98% of land previously zoned single-family residential means up to 3 units can be built on a property. With the Laneway homes, Vancouver became the first city to adopt this policy citywide.
- 15 http://www.huffingtonpost.ca/ramesh-ranjan/vancouver-laneway-homes-explainer_b_5635569.ht
- 16 Residential unit parking requirements were actually reduced when Laneway housing was approved, from 2 spots per parcel, to 1.
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APPEN DIC ES

vancouver

los angeles

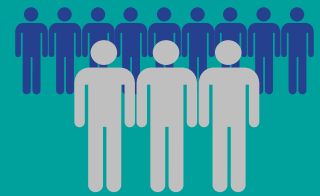
DEMOGRAPHICS



26%

CITY RESIDENTS

City vs. Region Population



28%

CITY RESIDENTS



5,249

PEOPLE/KM²

Population Density



3,124

PEOPLE/KM²



19.8%

PEOPLE LIVING
IN POVERTY

Poverty Rate



22%

PEOPLE LIVING
IN POVERTY

vancouver

los angeles

ENVIRONMENT



10.2

GREEN BUILDINGS
PER 100 PEOPLE

Number of
Green Buildings



1.2

GREEN BUILDINGS
PER 100 PEOPLE



32%

RENEWABLE

Percent Energy from
Sustainable Sources

(Excluding Natural Gas)



20%

RENEWABLE



55%

OF WASTE DIVERTED

Waste Diversion
Rate



75%

OF WASTE DIVERTED
(EXCLUDING FOOD WASTE)

vancouver

los angeles

HOUSING



\$4,936
PER MONTH

Average
Monthly Income



\$4,595
PER MONTH



\$1,400
PER MONTH

Average Monthly
Apartment Cost
for a One-Bedroom Apartment



\$1,814
PER MONTH



75.97
OUT OF 100

Cost of Living
Index



73.26
OUT OF 100

vancouver

los angeles

PUBLIC SPACE



Park Space



11.7%

OF TOTAL AREA



7.9%

OF TOTAL AREA

Number of Community Gardens



85

TOTAL



45

TOTAL

Walk Score



78

OUT OF 100



64

OUT OF 100

vancouver

los angeles

TRANSPORTATION



24.5%

RESIDENTS THAT RIDE
TRANSIT TO WORK

Public Transit
Riders



9.7%

RESIDENTS THAT RIDE
TRANSIT TO WORK



35%

CONGESTION
LEVEL

Traffic Congestion
Level



39%

CONGESTION
LEVEL



2.3

BIKE LANES PER
SQUARE MILE

Number of Bike
Lanes



0.8

BIKE LANES PER
SQUARE MILE

