



FIRM FOUNDATION

(from left) City of Chelan Mayor Mike Cooney, Rachael Goldie of Chelan Valley Housing Trust, and Councilmember Tim Hollingsworth on the Public Utility District dock in downtown Chelan

WASHINGTON CITIES BUILD THE FRAMEWORK FOR SECURING COMMUNITY IN AN AGE OF DIGITAL DISRUPTION.

by TED KATAUSKAS
photographs by
KAYLA KELLY & DANIEL BERMAN

ONS

At the height of a vacation-home construction boom 13 years ago in Chelan, a rural city of 4,000 whose population swells more than sixfold during the summer tourist season, a group of concerned citizens founded the Lake Chelan Community Land Trust. Modeled after nonprofits that preserve open space threatened by development, Chelan's land trust sought to use the same formula to create a sanctuary for another endangered public resource: affordable housing.

In just three years, the median home price in the Chelan Valley had more than doubled, as Seattleites with dot-com-enriched portfolios invested in ever more expensive vacation homes, pricing the city's workforce out of the housing market. To combat this trend, the land trust sought to purchase acreage it would hold in trust as an affordable housing preserve, then use donated funds to build modest homes on the parcel that would be sold at below-market rates to local families earning a working wage.

Without broad-based support, however, the Lake Chelan Community Land Trust ultimately disbanded. Meanwhile, another phenomenon was reshaping the economy of Chelan and vacation communities the world over: home sharing, fueled by internet-enabled startups like HomeAway (an Austin-based online vacation rental clearinghouse that acquired Vacation Rental By Owner in 2006) and Airbnb (founded in 2008, famously, by a pair of roommates who made the stratospheric rent of their Bay Area apartment affordable by marketing a living-room air mattress online as a virtual bed-and-breakfast).

With online home sharing's rise, the vacation home evolved from pied-à-terre, a luxury asset for the wealthy, to cash cow. According to AirDNA, which collects metrics on Airbnb rentals in cities worldwide, the average Chelan vacation home, when used solely as a short-term rental, generates \$37,000 a year in income, while a private room listed as a short-term rental earns \$19,000 a year. Owners of vacation homes began leveraging that extra income to subsidize heftier mortgages, further inflating housing prices (in 2003, the median sale price of a home in Chelan County was \$131,400; today it is \$334,000), while empty-nesters with extra rooms began marketing apartments that had been leased year-round to locals as weekend or weekly accommodations for vacationers, spiking monthly rental rates (in 2000, just 2 percent of renters in the county paid more than \$1,000 a month in rent; today the average monthly rate for a studio apartment in Chelan is \$1,132). With vacancy rates hovering near zero, local wage earners look elsewhere for available, and affordable, housing; a third of Chelan's workforce now resides outside the city limits, with daily commutes of 25 to 50 miles being commonplace.

"It's just one of the unintended consequences of the internet, I guess," says John Olson, a 1965 graduate of Chelan High School who retired to his hometown after 50 years in Tacoma and, shocked by what he saw, became an affordable housing crusader. "There are some good sides to short-term rentals: they provide more housing opportunities for tourists, and they allow people to buy real estate they otherwise couldn't afford. But overall, the benefits are to the individual, not to the community.

Echoing this sentiment is Rachael Goldie, a more recent Chelan High grad who returned to the city in 2012 with a global studies undergraduate degree from the University of Washington.

"They started Airbnb just wanting to share their living room with people, and then it turned into this thing that is actually affecting people who don't have homes," says Goldie, who can relate, having bounced from couch to couch before finding an "affordable" \$845-a-month apartment in Chelan that she shares with a roommate. "When you have a cluster of vacation

homes that are occupied only during the summer when most people come to recreate, that affects the livability of a community. You walk down the street and have five different houses that are almost never occupied, the sidewalks aren't shoveled.... It just makes the city feel empty, hollowed out."

"FOR ME, IN MY HEART, I'D LIKE TO SEE US BUILD, AS A COMMUNITY, SOMEBODY'S FIRST HOME BEFORE WE BUILD SOMEBODY'S SECOND HOME. AND I HOPE EVERYBODY GETS THAT. WE ARE IN A CRITICAL PERIOD OF OUR TOWN'S HISTORY."

—MIKE COONEY MAYOR, CHELAN

After working for minimum wage as a tasting-room attendant at several local wineries, Goldie settled into a job pulling shots as a barista at The Vogue, a coffee shop and wine bar with an open-mic stage that doubles as Chelan's unofficial town hall—and appropriately enough is owned by Mike Cooney, the city's mayor. Hearing Goldie talk about the housing woes of Chelan's working class, Cooney encouraged her to run for council, and in the fall of 2017 she did, making affordable housing a central focus of her campaign.

The 28-year-old barista had her work cut out for her: in addition to making espresso at The Vogue, she also waited tables at a local inn and operated a bookkeeping business on the side, so finding the time and effort to campaign was no mean feat, to say nothing of the fact that Goldie was a young newcomer to local politics. In the end, she lost her race by just 56 votes, but Goldie says she's gratified to have had the opportunity to rally her community around an issue she cares deeply about.

"Rachael did not win, but her issue resonated really well with the community, and that was to create an affordable housing initiative to address the middle class disappearing from our town," recalls Mayor Cooney, who convened a town hall meeting on January 16, 2018, the first of many public forums crowding calendars from spring through fall.

Standing beside an easel with a bullet list outlining the elements of the essential problem ("lack of starter homes to own; high rents in town, low inventory; no relief in sight") and its fundamental roots ("growth of high-end second homes; increasing # of vacation homes; lack of high-wage jobs"), Cooney addressed a crowd that packed council chambers.



Mayor Mike Cooney at Chelan City Hall

"When I was on council ... I did not believe that it was hard to find affordable homes in Chelan," said the former Seattleite, who was elected to Chelan's council in 2007, two years after he and his wife retired full-time to the vacation home that became their permanent residence. "Things have changed."

The mayor introduced a consultant the city had retained to draft proposed regulations for short-term rentals, as directed by a revised 20-year comprehensive plan Chelan's council had adopted that past November, then later closed the meeting to accept another challenge mandated by the plan.

"We feel it is a right for people to have your own home here," he told the audience gathered that evening. "For me, in my heart, I'd like to see us build, as a community, somebody's first home before we build somebody's second home. And I hope everybody gets that. We are in a critical period of our town's history."

Earlier this year, **Sammamish**, another city on a lake, confronted one of the most critical challenges of its history, thanks to an altogether different type of technology-driven disruption: a ransomware attack.

When the first employees showed up for work at city hall just after 7 a.m. on January 23, some discovered that their computers were running agonizingly slowly or not responding at all. Detecting a malware virus, IT staff powered down shared servers in an attempt to contain its spread. But they were too late; hackers had seized control of the city's servers, encrypted all data, and demanded that the city pay a ransom for a code that would unlock it. Notified of the attack, Interim City Manager Larry Patterson got in contact with the FBI and declared an emergency, allowing the city to bypass contract bidding procedures to retain the services of LMG Security, a Montana-based cybersecurity consulting firm recommended by the City of Issaquah, which had been targeted by similar, but unsuccessful, malware attacks.

The attack couldn't have come at a worse time for Sammamish, which had just recently seen major turnover in its top management positions, including the city manager, deputy city manager, and IT director. After auditing the city's computer system and security protocols, the previous IT director had identified substantial weaknesses and had recommended hardware and software upgrades, but this issue got lost in the transition.

"All of that led to a perfect storm that left our computer system vulnerable," says Patterson, a Bend, Oregon, contract administrator and 40-year veteran of city government who had been hired in September to oversee the transition. "I was just getting the lay of the land and dealing with some pretty hot topics when we got hit with the virus."

Advised not to pay the ransom (since there was no guarantee that the hackers would unlock the data once paid), the city established a plan to eradicate the virus by wiping all computer hard drives and servers, reinstalling all server operating systems from backups, and restoring the locked data from backups, a painstaking process that would take weeks, during which the city would essentially be thrust back to the predigital age. The city sent out a call for mutual aid—and was humbled by the response.

"We were not the first city in the area to be hit," explains Communications Manager Sharon Gavin, who notes that Yarrow Point, another small city on the east side, had experienced two cyberattacks. "People were very understanding."

Homestreet Bank sent computer security experts. The City of Bothell dispatched its IT department. Employees from Microsoft and Amazon, computer science students from the University of Washington, and volunteers from the community and all across the region offered to do whatever they could. One of them was Steve Schommer, who had just retired in September after more than 31 years at the Northshore Utility District in Kenmore, most recently as its IT director, and who has extensive cybersecurity training and experience.

"They sent an email out to emergency managers in the region for help to start rebuilding endpoint computers, reinstalling Windows, and getting it all reconfigured," Schommer recalls. "It's a very tedious mental process to rebuild 100 computers, so I decided to stop by and see what I could do."

Showing up at city hall six days after the attack, he was sur-

Sense and Senseability

Q&A CARLO RATTI

Architect and engineer Carlo Ratti, director of MIT's Senseable City Lab, talks about why cities need to adopt a "senseable" approach to fostering innovation in urban areas.



What's a "senseable city"?

"Senseable" implies both the sensitivity of digital technologies capable of sensing and responding to citizens' needs and the more human quality of being "sensible," of keeping people and their desires at the center.

How does that differ from the concept of a "smart city"?

The technological foundations for the two concepts are the same; the difference is one of focus. I see the more commonly used concept of "smart city" as reflecting the current technological trend by which the spaces around us are becoming permeated with digital data—the internet is becoming the internet of things. The term "senseable city" humanizes this approach: I believe it better encapsulates the social benefits gained by embedding internet-of-things technologies into our urban spaces.

You've said that local government should create the conditions needed to grow "innovation ecosystems." What do you mean by that?

Supporting academic research in cities and

promoting applications in fields that might be less appealing to venture capital is an important government role. The public sector can also promote the use of open platforms and standards in such projects, which would speed up adoption in cities. But overall, I think that their most important role is to create the conditions for urban innovation to flourish in a bottom-up way, supported by private funds.

What's one example of a city that's doing a good job of this?

Singapore's approach toward self-driving cars. The government has changed regulation, brought around the table both private and public decision makers (through a committee called CARTS, to which I also belong), promoted venture capital investment, and in so doing generated a very rich innovation ecosystem.

Explain your concept of the 2-50-75-80 ratio, and how it applies to cities.

At the global level, cities make up 2 percent of the earth's surface but receive 50 percent of the population and are responsible for 75 percent

CONTINUED ON P.19 ►

prised to find that in the haste to get the city's computer network running again, nobody was working on an upgrade of hardware and software systems that would be needed to prevent another attack. Schommer offered to install the cybersecurity system he had put in place in Kenmore, which had thwarted multiple attempted cyberattacks, and he was hired to do that, and more, as the city's interim IT director.

"The day I arrived there, the city was in 'trying to restore services' mode," recalls Schommer. "And I realized that they had not addressed the security perimeter. It's analogous to a military operation: without a perimeter, the enemy can just walk right back into your camp. So my goal was to put all of our resources on that so that whatever we construct behind the perimeter will be safe and secure."


After procuring and installing a next-gen firewall replacing the city's existing firewall, Schommer procured specialized cyber-

security hardware and software to safeguard it. That included a network security appliance that monitors digital traffic flowing into the city's infrastructure, instantly breaking any connection the device detects as suspicious activity. In addition, Schommer installed advanced email threat protection services that inspect all incoming emails for malicious attachments or links, immediately quarantining them, as well as a proactive endpoint that scans for malicious viruses that may have migrated into the system from an external device.

Once Schommer was satisfied that an effective security perimeter was in place, the work of restoring data from backups began. Like many companies and municipalities, Sammamish had relied on cloud services for its daily data and server image backups, but downloading the six terabytes of data the city had stored in the cloud over even the highest-speed fiber-optic lines would take more time than they had. With many services virtually paralyzed,

"I REALIZED THAT THEY HAD NOT ADDRESSED THE SECURITY PERIMETER. IT'S ANALOGOUS TO A MILITARY OPERATION: WITHOUT A PERIMETER, THE ENEMY CAN JUST WALK RIGHT BACK INTO YOUR CAMP. SO MY GOAL WAS TO PUT ALL OF OUR RESOURCES ON THAT SO THAT WHATEVER WE CONSTRUCT BEHIND THE PERIMETER WILL BE SAFE AND SECURE."

—STEVE SCHOMMER INTERIM IT DIRECTOR, CITY OF SAMMAMISH



City of Sammamish Interim City Administrator Larry Patterson, left, and Interim IT Director Steve Schommer in front of a map of the city

Sammamish asked its provider to transfer the data to a hard drive, which consumed more than a week; when the disk arrived in the mail, another delay ensued when the city discovered the provider had uploaded the wrong files. Once it had the data it needed, the information had to be uploaded onto three separate server hosts—a daylong process for each.

“The moral of that story is: the cloud is great for a lot of things, but I would argue it’s not the best solution for rapid recovery of server and endpoint backups,” Schommer advises, adding that Sammamish now will have a multilevel backup scheme. “Cloud backup conceptually is fine, but when you need to provide customer service functions as an organization, time is a factor.”

Functions like issuing building permits, dog licenses, and passports; processing work orders; and paying vendors (and employees), which all came to a standstill on the morning of January 23.

“From the beginning we knew we had to be completely transparent about our situation, so we put out messages through social media and on our website: This is what’s happening, here’s what we can do, here’s what we can’t do. We also created an FAQ page about the situation and provided updates as we worked through issues,” says Gavin, Sammamish’s communications manager.

“Cities used to work without computers all the time. We just had to find new ways to do our jobs.”

Which more often than not happened to be the old way. When the city finally reopened its permit office on February 15, Gavin posted a tongue-in-cheek announcement on Sammamish’s Facebook page: “Even though our permitting system is still down due to the ransomware ... our Customer Service Artisans will be happy to help you with the genuine, hand-crafted paperwork you need to get stuff done.”

At press time in late March, Sammamish was still in a state of emergency due to the ransomware attack. Although the final bill had yet to be tallied, Schommer noted one industry estimate that said recovering from a debilitating ransomware attack for a local government of Sammamish’s size averages just over \$3 million in both direct and indirect costs.

“We’ve done some tremendously positive and wonderful things with technology, but the landscape of cyberattacks has changed: these threat actors will get access to a city’s system, and then they will sell that access to somebody else on a Dark Web site. It’s a business,” says Schommer, adding that cybersecurity industry contacts tell him they typically respond to four new local, state, or federal government ransomware attacks on the West Coast each week. Sammamish, which hopes never to be one of them again, has nearly doubled its annual IT budget in 2019: to \$3 million.

“Not only are we containing this issue,” says Patterson, “but we are preparing for the future as well.”

A **s is Chelan.** In March 2018, the city retained the services of an expert to help address its affordable housing crisis: Julie Brunner, a housing and community consultant and housing director at OPAL Community Land Trust on Orcas Island. Founded in 1989, OPAL pioneered the concept of using the conservation movement’s land trust model to create permanent affordable housing in Washington. The way it works

of energy consumption and 80 percent of CO₂ emissions. If we improve our cities, even marginally, we can have a great impact on the entire planet. New technologies allow us to use existing urban infrastructures more sustainably.

Like car sharing.

Today, on average, a car is kept in motion only for 5 percent of the time. For the remaining 95 percent, it is unused, parked somewhere. The arrival of self-driving cars will increase the demand for sharing, which is already growing thanks to car-sharing services. I believe this will allow us to create more sustainable urban systems.

What’s one thought you’d like to leave for local government officials to consider?

The need for governments to recognize that they must create situations in which new technologies and innovations from the private sector can develop and make cities more efficient, supporting traditional incubators while also aiming to produce and nurture the regulatory frameworks that allow innovations to thrive. Considering the legal hurdles that continuously plague applications like Uber or Airbnb, this level of support is sorely needed.

How can cities help workers whose jobs or careers might be threatened by advances in technology?

I believe the key words around which we can start

a constructive discussion here are “transition” and “redistribution.”

Transition—to be able to manage the technological upheavals without being overwhelmed, to help those who have lost a job find another and to educate the new generations in tomorrow’s professions. Redistribution—because it is essential to understand who will benefit from the new system.

How do you accomplish that?

An idea would be to levy taxes on robots or other new forms of artificial intelligence.

Robots and AI?

This isn’t a joke: it means taxing capital and transferring income to those who may have lost their jobs. This proposal was unfortunately rejected by the European Parliament a few months ago, but not long after, it found unexpected supporters like Bill Gates.

Why is that important?

If we can manage transition and redistribution, the future could offer us many opportunities: not the end of work, perhaps, but the replacement of less pleasant jobs with more creative ones with greater added value. As John F. Kennedy said in a speech in 1962, “We believe that if men have the talent to invent new machines that put men out of work, they have the talent to put those men back to work.” The times of great transitions have always been also those of great possibilities.



(from left) Councilmember Tim Hollingsworth, Rachael Goldie of Chelan Valley Housing Trust, and Mayor Mike Cooney on the porch of The Vogue in downtown Chelan

“A YEAR LATER, IT’S REALLY HARD TO BELIEVE THAT WE STARTED OUT JUST CHATTING ABOUT THIS, AND NOW IT’S BECOME A HOUSING TRUST THAT HAS WIDE COMMUNITY SUPPORT.”

—RACHAEL GOLDIE CONTRACT ADMINISTRATOR, CHELAN VALLEY HOUSING TRUST

is elegantly simple: the nonprofit acquires a tract of land that’s held in trust as a community asset; develops no-frills, modestly sized homes that are sold to qualified buyers at below-market rates and financed with fixed, low-interest-rate loans; and leases the land beneath the home to the owner, who agrees to resale restrictions that keep the home affordable for the next qualified buyer. Since its founding, OPAL has developed 105 affordable homes on Orcas Island, with more than 70 home resales (a 1,224-square-foot, two-bedroom home in the reserve recently sold for \$207,000 in a market where the median listing price is \$550,000).

“There are a couple benefits to having a community land trust be involved,” says Brunner, who recently advised the City of Houston about the model. “One of them is that we know how to do owner-occupied affordable housing and keep it affordable. The other is this idea of community control and community determination. . . . You can’t pull something like this off without broad support in a small community. It just can’t happen.”

Over three days in April 2018, Brunner visited with stakeholders in Chelan, convening roundtable discussions with employers, social service providers, builders, real estate professionals, Chelan’s Latino community, and the city’s council and planning department and ending her visit with a presentation about the land trust concept at a community forum at The Vogue. She met with the city’s eight-member affordable housing committee, including Mike Cooney, Rachael Goldie (newly appointed as a planning commissioner), and Tim Hollingsworth (a surveyor who had been elected to Chelan’s council in November 2017), three friends who had begun meeting regularly at The Vogue to discuss affordable housing. That conversation crescendoed in the weeks following Brunner’s visit, and by June the committee had chartered a new nonprofit, the Chelan Valley Housing Trust, with a level of community engagement that had eluded its predecessor a dozen years prior.

“The land trust made sense: it was a good fit for a fairly conservative but tight-knit community not necessarily looking for big-government solutions,” explains Hollingsworth, the trust’s board president, who notes that the nonprofit is a community effort, relying on donations of not just land but capital and services from local businesses and residents. “We’ve had good feedback from a variety of different viewpoints,

from conservative businessmen to more progressive social service groups—everybody can see where they fit in with this organization.”

Brunner puts it this way: “Cities aren’t good at owning housing and building housing, but they do have the resources to make housing happen.”

Following the lead of the city, which has earmarked \$100,000 to defray the Chelan Valley Housing Trust’s operational costs for five years and pledged another \$100,000 to subsidize hookup fees for new homes, developers of The Lookout (a lakeside enclave of high-end vacation homes) donated a 2.5-acre parcel of land outside the gated community, along with blueprints for single-family homes; North Cascade Bank pledged \$2 million in construction loans; one general contractor chipped in \$50,000; and a local resort donated \$25,000 while offering guests who contributed to the nonprofit a discounted “affordable housing” room rate. In addition, Chelan County recently joined the partnership, donating a 20-acre parcel and \$100,000 to the cause. By next year, the trust expects to hand 17 new owners the keys to 1,100-square-foot homes, priced at around \$200,000 and financed by conventional mortgages and USDA direct low-interest loans.

Although she’s still sharing an apartment, Rachael Goldie now has her dream job: a half-time position as the trust’s administrator.

“A year later, it’s really hard to believe that we started out just chatting about this, and now it’s become a housing trust that has wide community support,” she says. “I think it could be the same anywhere, as long as you have the right people start it.”

People like Goldie, the daughter of an apple packer who grew up understanding what it was to want and decided to do something about it.

“At the age of 30, she’s kind of thinking about buying her first home, and there’s two numbers that will never match up no matter how hard she works: the median household income is about \$45,000 a year, and the median house price is about \$450,000,” says Mayor Cooney. “It’s such a cool and compelling story that she’s now leading the charge to get affordable homes built for families just like hers.”

Both earning, and building, her community’s trust. **C**