

ACLP's "A CLOSER LOOK"

Comprehensive assessments of models, "successes," and other examples cited in support of proposals for municipal broadband networks.

A CLOSER LOOK: SANTA MONICA'S CITYNET
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1. INTRODUCTION

The ACLP's "A Closer Look" series seeks to provide state and local officials with objective, data-driven analyses of the models and other evidence frequently cited by those advocating for or proposing government-owned broadband networks (GONs). Such analyses are essential inputs to policymaking as there have been relatively few enduring successes in the GONs context, and those that present as successful are usually unique outliers.¹ Many other systems struggle to deliver promised benefits – or fail outright. Over the years, GONs in Burlington, VT²; Bristol, VA³; the multi-city UTOPIA project in Utah⁴; and Santa Cruz, CA⁵, among others, have all been cited as models that should be adapted in other cities.⁶ Each project, though, eventually struggled or failed.

Rather than acknowledge these failures and alert the officials to whom these models are offered as proof that a GON can work in their city, advocates instead offer additional examples of "successes" or attempt to distinguish a particular failure from the pending proposal. Unfortunately, local officials rarely have the time, resources, or expertise to vet these claims.

This installment takes a closer look at Santa Monica's CityNet, a GON that is frequently cited as an example of how a municipal broadband system can be built incrementally and without accruing debt. As discussed below, the details of CityNet's rise render it difficult to duplicate elsewhere. Moreover, the very modest benefits generated by this system raise important questions about whether the costs of attempting to replicate this approach would outweigh any benefits generated by it.

OVERVIEW

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SUMMARY OF TAKEAWAYS

1. CityNet's foundation – I-Net – was the product of fortuitous circumstances.

- Santa Monica's I-Net – and thus CityNet – owes its existence to the financial woes of Adelphia, which agreed to essentially fund and build the network in exchange for franchise renewal. The city had very significant and unusual leverage in this negotiation. It is unlikely that another city would find itself in a similar situation.

2. Santa Monica's aggressive use of ordinances to hasten deployment of its GON is unique and could ultimately undermine private broadband investment.

- The city has been aggressive in using its authority over public rights-of-way (ROW) to facilitate deployment of its GON. Some have argued that, by prioritizing its own interests (*e.g.*, reducing GON construction costs) in this manner, along with imposing exacting build-out requirements for private ISPs, the city could reduce private sector incentives to invest in new network build-out. This would be an unfortunate outcome given the very small footprint of CityNet vis-à-vis the citywide footprint of other ISPs.

3. CityNet's impacts are very modest.

- CityNet has captured approximately 2% of the market for business customers, generating just enough revenue to allow the city to maintain and operate this small-scale system. More broadly, there is little hard data indicating a causal relationship between CityNet and economic development gains in the city. To the contrary, there is significant evidence that the rise of the city's – and region's – tech startup scene is due to a range of other factors.

4. The city's Digital Inclusion Pilot does not augur well for a citywide GON.

- The city's digital inclusion experiment is being framed as a potential “proof of concept” for a full-fledged citywide retail GON. Extending the network via the pilot has already cost millions, and even though much of these costs have been offset with federal funds, it remains to be seen whether there is sufficient consumer demand for this service. This, in turn, raises important questions about whether the city would eschew the self-sustaining CityNet model and take on substantial debt to deploy a muni system in an already competitive marketplace.

2. THE EMERGENCE OF SANTA MONICA'S CITYNET AS A MODEL GON

The GON in Santa Monica, CA, has been cited numerous times as a “success” that officials in other cities might study as they contemplate entering the broadband market. Although its status as a model dates back several years,⁷ its emergence as a favorite among those pitching and supporting GONs, especially in California, has only emerged over the last year or so:

- *December 2016.* A “handbook” for local officials “seeking affordable, abundant bandwidth” references CityNet as an example of how to build a GON via an “incremental approach,” *i.e.*, “without a municipal electric department....and without issuing debt.”⁸
- *January 2017.* In Sunrise, FL, a proposal for blanketing the city with Wi-Fi in an effort to enable a range of smart city applications included an extended overview of efforts in Santa Monica to deploy CityNet. The document lists this analysis in a section entitled, “Examples of Communities that have Successfully Implemented Such Projects.”⁹
- *May 2017.* The Fiber Optic Master Plan developed for a consortium of cities in the South Bay area of Southern California (which is near Santa Monica) advised local

officials to “review the successful initiative[]” in Santa Monica as they consider whether and how to deploy a multi-city GON.¹⁰

- *October 2017.* In making its case for a citywide fiber-to-the-home (FTTH) GON in San Francisco, a feasibility study cited to Santa Monica as a “very successful municipal effort[]” in California.¹¹ The goal in providing this example was to demonstrate that GON efforts can succeed in the state.
- *November 2017.* The approach used in Santa Monica has been referenced as a model worthy of study by officials in nearby Long Beach, CA.¹² City staff and the consultant with whom they have been working on a GON inquiry noted that the Santa Monica model is “perhaps most similar” to the one being proposed in Long Beach.¹³

SANTA MONICA AT A GLANCE

- *Population:* 92,478
- *Pop. Density:* 10,664/sq. mile
- *College Degree Holders:* 67%
- *Median Income:* \$82,123
- *Median Home Value:* \$1.09M
- *Poverty Rate:* 11.3%

Source: U.S. Census

Why is Santa Monica such a popular model? GONs advocates typically cite the following attributes:

- *Incremental Construction.* CityNet was built incrementally, evolving over time from a fiber-optic institutional network (“I-Net”) that connected municipal buildings; to a larger dark fiber network, access to which was leased to private businesses; to an emerging commercial network that provides service to select low-income housing developments.¹⁴
- *No Debt.* The GON in Santa Monica has been built without debt.¹⁵ Rather, the city has tapped a range of funding sources to expand the network, including millions extracted from a private cable company during its franchise renewal.¹⁶
- *Local Policy Adjustments.* Growth of the network has been facilitated by several municipal ordinances and other regulatory decisions, including cable franchise renewals, “dig once” policies, and other novel approaches to accessing public ROW (e.g., “coordination” requirements that have allowed the city to piggyback network deployment on top of private network construction).¹⁷
- *Supporting Core City Priorities.* In addition to providing capacity to public institutions and private businesses, CityNet is also being used to enable smart city applications, support a Wi-Fi system, and connect low-income households via a Digital Inclusion Pilot.¹⁸

3. EVALUATING CITYNET

When citing these positive attributes in support of proposals for GONs in other cities, oftentimes without providing much in the way of details or data, advocates imply that CityNet is replicable. The following evaluates key aspects of CityNet in an effort to provide policymakers in other cities with more information about a prominent GON “model” so they can make an informed determination as to whether it can be replicated in their community.

3.1 The Backstory: From a Master Plan to an I-Net

The foundation of the GON in Santa Monica stretches back to city planning efforts in the late 1990s.¹⁹ In the aftermath of the 1996 Telecommunications Act, a landmark bill that implemented a range of new policies impacting local authority over communications networks, the city convened a task force in the fall of that year to (1) evaluate Santa Monica’s telecommunications and technology needs, and (2) make recommendations for meeting those needs.²⁰ A Master Plan (Plan) was issued in February 1998.

The Plan recommended the construction of a municipal fiber network “in the form of a fiber ring that will be used to connect every major, and many minor, City buildings.”²¹ As detailed in the report, this network would be built out incrementally over three years at a total cost of about \$2 million.²² By building this network, which many saw as being robust enough to meet future bandwidth needs, the Plan predicted that the city would be able to “reduce certain telecom costs incurred today and in the future” by self-provisioning service rather than relying on existing arrangements with private service providers.²³ The Plan noted that additional revenue could be generated by leasing excess capacity to other entities.

The Plan also considered – and ultimately rejected – the construction of a “full service” network, which would have offered a range of services (television, data, etc.) to residents and businesses.²⁴ The projected cost of this network was upwards of \$57 million. The Plan recommended against this proposal because it was projected that the city, despite being populated by a largely affluent, “computer savvy” population that was increasingly demanding more bandwidth-intensive services, was unlikely to make back its investment. Indeed, the Plan estimated that, after ten years in service, the “full service” network would likely face an operating deficit of \$31 million.²⁵

Another notable aspect of the Plan was its focus on updating the city’s ROW policies. Santa Monica has long been active in its use of local ordinances to protect a way of life that appears to be particular to the city. In the past, the city has passed sweeping ordinances that sought to limit, among other activities, panhandling²⁶, airplane noise²⁷, protests²⁸, and Airbnb rentals.²⁹ In the context of ROW access, the city has been similarly exacting, including in the context of the Master Plan, which recommended a slew of changes nominally aimed at rationalizing policies in light of the 1996 Act and related changes in the telecom market.³⁰ But at the heart of its proposed ROW changes was a desire to limit how often the city’s streets and other assets would have to be disturbed during network deployment.³¹ To that end, the Plan endorsed interim measures that the city had adopted to preserve core aesthetic concerns and overall quality of life.³² This dovetailed with another beneficial aspect of the municipal fiber network touted in the Plan – that it might encourage private ISPs to lease access to it rather than build their own facilities.³³

Often overlooked in the profiles of this GON is the fact that the city did not act immediately on the Plan’s recommendation to build a municipal fiber network. To the contrary, significant forward progress was not evident until 2002, when the city leveraged the franchise renewal of cable provider Adelphia to realize the Plan’s vision for a public network. Context is key to understanding how the city was able to extract the concessions that eventually led to the deployment of I-Net, the forerunner of CityNet.

3.1.1 The Key Role of Adelphia’s Franchise Renewal

Adelphia’s profound financial woes were well known – and unfolding by the day – during the franchise renewal process, which was triggered by the company’s takeover of the local cable company, Century, in 1999. Over the course of the months leading up to renewal in May 2002,

questions began to arise about significant debts that Adelphia had kept off its books.³⁴ In April of that year, the SEC opened a formal investigation into its questionable bookkeeping.³⁵ In an attempt to raise much-needed cash, the company made available for sale its systems in lucrative markets like in Southern California, which encompassed the network in Santa Monica.³⁶ A preliminary deal to sell those systems was in the works with another cable operator around the time that Santa Monica approved the franchise renewal.³⁷ It is not unreasonable to assume that these troubles were top-of-mind for city officials, who perhaps sensed an opportunity to insist on concessions that it might not otherwise have sought. Indeed, the financial struggles of the firm are cited in the renewal agreement as the basis for several contingency clauses.³⁸ (Adelphia would go on to file for bankruptcy a month after franchise renewal.³⁹)

A key part of the renewal was payment of \$3,000,000 by Adelphia “in settlement of past disputes.”⁴⁰ Those disputes are not described, but Santa Monica and Adelphia had been engaged in an adversarial relationship since the company took over Century.⁴¹ Approval of the renewal also hinged on agreement by Adelphia to construct an Institutional Network (I-Net), which would be used by the city for strictly municipal purposes (*i.e.*, to connect anchor institutions and government buildings).⁴² The city agreed to pay for construction of the network, but the renewal agreement noted that Santa Monica could use funds from the \$3,000,000 payment to pay for the I-Net, which means that Adelphia ultimately paid for the system.⁴³ Such opportunism by the city is often omitted in profiles of the system.

3.2 Becoming CityNet

Once live, the I-Net, according to city estimates, helped Santa Monica eventually reduce its annual telecom costs by about \$500,000.⁴⁴ Those cost savings were reinvested by the city into a separate municipal fiber network that would eventually become CityNet. In 2006, the city began leasing excess capacity on that network to businesses, generating additional revenue that was reinvested in the system for operation, maintenance, and expansion.⁴⁵ Over time, the city would expand its menu of offerings to businesses large and small via a range of additional investments, eventually upping its capacity to 100 gigs.⁴⁶ For many years, though, Santa Monica opted against offering service to residents because the local market was, and remains, well served by private providers.⁴⁷

How the network underlying CityNet was deployed matters as much as how it was paid for, and it is here that the uniqueness of Santa Monica’s GON becomes apparent. Indeed, its municipal network was the beneficiary of both serendipity and the extension of exacting control by the local government in the use of ordinances to shape how communications networks of all kinds were deployed.

With regard to serendipity, the city was able to leverage several miles of abandoned sewer mains before they were repurposed, allowing them to cut the cost of deployment during an early phase of network build-out.⁴⁸ Such a strategy has been rarely used in the U.S. because “water departments often prefer to fill old mains with cement to prevent cave-ins that could shift the ground.”⁴⁹

Santa Monica also used its ROW policies to facilitate the growth of CityNet, an approach that flipped the traditional dynamic of cities engaging in such activities to assist the deployment efforts of private providers. In 2004, the city adopted an ordinance to govern how new wireless networks would be deployed.⁵⁰ Beneath its rigorous aesthetic standards was an opportunistic leveraging by the city of the explosion in demand for accessing public ROW that was emerging at the time.⁵¹ In particular, “coordination” requirements included in the ordinance allowed the city to piggyback the deployment of CityNet on the construction of private communications facilities.⁵² Private

entities seeking access to these ROW had to pay fees (for permits, etc.) on top of the costs associated with accessing the ROW (*e.g.*, digging up and repairing streets). This meant that the city was able to dramatically reduce its fiber deployment costs by as much as 90 percent by “coordinating” with private providers when accessing the ROW.⁵³ Some have criticized this general approach to leveraging public ROW as onerous and likely to create disincentives for private investment in new networks.⁵⁴

3.3 Experimenting with Residential Service

In recent years, Santa Monica has begun to experiment with using CityNet to offer commercial broadband service to residents. Although the city had previously determined that such an ambitious endeavor was too risky and costly, especially in light of robust competition in the local market, officials have nevertheless persisted in their desire to see if the GON can support such an offering.

In December 2015, the city launched a Digital Inclusion Pilot in an effort to “assess the feasibility of expanding CityNet broadband to Santa Monica residents.”⁵⁵ The Pilot targeted “10 Santa Monica Community Corporation affordable housing properties to address the digital divide for low income housing residents.”⁵⁶ The cost of this small-scale pilot was estimated at \$175,000.⁵⁷ Unlike previous GON-related efforts, the city funded this initial allocation out of its General Fund.⁵⁸ Staff estimated that this first phase would likely connect 24 homes (out of a possible 425⁵⁹), generating \$15,000 in revenues in its first year, a very modest figure for a city that has long prided itself on ensuring that its technology projects are self-sustaining.⁶⁰

In 2017, Santa Monica, without releasing data about the success of the initial phase of the pilot, announced that it would expand the program to “500 families living in 29 multi-dwelling affordable housing buildings.”⁶¹ The projected cost of this project is \$1,850,000, a figure many times more than what was spent on the initial phase.⁶² The high cost will pay for “utility undergrounding, conduit installation, fiber optic cable installation, and construction services for the City’s fiber optic network in the Public [ROW].”⁶³ Unlike the initial phase, the city will use federal dollars to pay for much of this expansion. These funds will come via the Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing & Urban Development (HUD).⁶⁴ In 2016, HUD expanded its CDBG program to allow for funds to be used in this manner.⁶⁵ The Pilot expansion will use \$970,000 of the \$1.03 million Santa Monica was allocated via the CDBG program in 2016 and 2017, meaning that 94 percent of these funds for both years will have been put toward expanding CityNet.⁶⁶ An additional \$15,000 has been allocated in support of the Pilot from CityNet revenues.⁶⁷

In all likelihood, this expansion of the Pilot, underwritten with federal dollars, will have the ancillary benefit, intended or not, of helping the city to push further toward its goal of making CityNet available to all residents. CDBG program criteria allow funds to be used in areas that are not exclusively populated by low- and moderate-income households or for infrastructure solely benefiting low-income or public housing developments. Indeed, the program allows funds to be spent in areas “where at least 51 percent of the residents are low- and moderate-income persons and the area must be primarily residential.”⁶⁸

3.4 Examining the Impacts of CityNet

For as much positive attention that CityNet has received over the years, and for as much as advocates cite to the GON as a model that should be replicated elsewhere, a careful examination of its actual impacts in Santa Monica reveal very modest successes.

City documents and statements by officials indicate that, to date, CityNet has signed up approximately 153 business customers⁶⁹ out of a total of about 9,500 businesses, representing a penetration rate of less than two percent.⁷⁰ These connections, along with those supporting municipal buildings and anchor institutions, generated approximately \$2,100,000 in revenue in 2016-17.⁷¹ As previously noted, these funds are reinvested in the network, helping to sustain ongoing operation and maintenance of the system. New business connections are paid for by the customers themselves, the rationale being that such an unusual arrangement will pay for itself within a few years “in the form of lower monthly telecom costs” (the city retains ownership of the asset).⁷²

Such tepid use of CityNet, along with a lack of data demonstrating a causal effect on economic development (*i.e.*, that CityNet is directly responsible for a certain amount of economic growth), suggests that, beyond a handful of anecdotal examples of existing businesses putting their new connections to productive uses, the GON has not had a demonstrable impact on an already vibrant local economy. To the contrary, the rise of “Silicon Beach” – a term used to describe the burgeoning tech startup scene in and around Los Angeles, including Santa Monica – is due to a range of other factors, including cost of living (compared to Silicon Valley), weather, location, tax incentives, and overall quality of life.⁷³

With regard to its experiment in the market for residential connections, city projections dating back to the Master Plan make clear that it will be unable to generate revenues sufficient to cover the significant costs of extending the network to every household and business in the city. The city has put aside a profit motive in the context of the Digital Inclusion Pilot, but at the same time, it is viewing that endeavor as a “proof of concept” vis-à-vis a citywide residential network. Whether the city moves forward with funding such a network without being able to self-sustain, as it has done with CityNet, remains to be seen.

Looking ahead, officials are exploring how to leverage its GON for “smart city” purposes. These applications will be enabled by the next generation of wireless networks (aka 5G), which require substantial backhaul. CityNet’s fiber could thus play a role in enabling 5G, but recent changes to ROW policies could undermine efforts to build out these critical new networks in a timely manner. In particular, a 2016 ordinance imposed many new aesthetic requirements, including the undergrounding of most facilities and strict policies around what antennae must look like.⁷⁴ Private mobile companies have argued that these requirements are unrealistic, technically difficult to meet, and, thus, likely to dampen investment and slow deployment.⁷⁵

4. TAKEAWAYS

The following takeaways regarding Santa Monica’s CityNet are evident from this “closer look” at the GON:

- *CityNet’s Foundation – I-Net – Was the Product of Fortuitous Circumstances.* Santa Monica’s I-Net, and therefore CityNet, owes its existence to the financial woes of Adelphia, which agreed to essentially fund and build the network in exchange for franchise renewal. The city had very significant and unusual leverage in this negotiation. It is unlikely that another city would find itself in a similar situation.
- *Santa Monica’s Aggressive Use of Ordinances and ROW Policies Create Disincentives for Private Investment in New Networks.* Santa Monica has long been protective of the “look and feel” of its beachfront community.⁷⁶ As a result,

the city has been incredibly aggressive in its use of local authority to micromanage how communications networks are deployed. The result has been ROW policies that private providers view as onerous and likely to slow deployment of new networks. Yet these policies have ultimately been of value to the city as it has assiduously piggybacked on private deployments to build its own municipal fiber network. It is unlikely that other cities would be willing or able to engage in such command-and-control policymaking, especially at the expense of needed private broadband investment.

- *CityNet’s Impacts are Very Modest.* Even though the city has not used debt to build its GON, the benefits arising from CityNet are very modest. It has captured a tiny percentage of the market for business connections, generating just enough revenue to stay afloat. When considering whether this model is worthwhile in their own city, local officials elsewhere might not find these benefits to be compelling enough to invest resources in trying to build a similar system. Indeed, the transaction costs associated with CityNet include much more than just the dollar value of network construction – as previously noted, the GON benefited from a range of unique circumstances that, when quantified, would likely add significantly to the overall cost if another community tried to replicate this approach, making it less attractive as a model.
- *The Digital Inclusion Pilot Does Not Augur Well For Citywide Service.* The stated goals of the Pilot send mixed messages. On one hand, the city is seeking to close the digital divide by making affordable gig connections available to low-income residents. But on the other hand, the city views it as a “proof of concept” vis-à-vis a citywide residential service. Either way, its foray into residential service appears unlikely to capture much share of a competitive local market or otherwise generate revenues sufficient to sustain it.

* * * * *

ENDNOTES

¹ See, e.g., Charles M. Davidson & Michael J. Santorelli, *Updated Case Study of Chattanooga*, ACLP at New York Law School (Oct. 2015), <http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Chattanooga-Case-Study-updated-October-2015.pdf> (documenting the many unique elements of the GON that make it a poor template for other cities).

² See Charles M. Davidson & Michael J. Santorelli, *Understanding the Debate over Government-Owned Broadband Networks: Context, Lessons Learned, and a Way Forward for Policy Makers*, at p. 18, ACLP at New York Law School (June 2014), <http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Government-Owned-Broadband-Networks-FINAL-June-2014.pdf> (“*Understanding the Debate*”). The City Council in Burlington recently agreed to sell the failed municipal system to a private company. See Pat Bradley, *Burlington City Councilors Choose Burlington Telecom Buyer*, Nov. 28, 2017, WAMC, <http://wamc.org/post/burlington-city-councilors-choose-burlington-telecom-buyer>.

³ See Charles M. Davidson & Michael J. Santorelli, *Updated Case Study of Bristol*, ACLP at New York Law School (Dec. 2016), <http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Bristol-Case-Study-Update-December-2016.pdf>.

⁴ *Understanding the Debate* at p. 75-79.

⁵ The then-emerging GON in Santa Cruz was cited as evidence that a similar municipal broadband model proposed in a feasibility study in Madison, WI, could succeed. However, the Santa Cruz example was omitted from subsequent documents prepared in support of the GON in Madison. In addition, the example was also omitted from a report on “successful” public-private partnership models authored by the same consultant who prepared the initial feasibility study for Madison. *Compare City of Madison Fiber-to-the-Premises Feasibility Analysis*, CTC Technology & Energy (Aug. 2016), <http://bloximages.chicago2.vip.townnews.com/host.madison.com/content/tncms/assets/v3/editorial/6/f6/6f687e3f-09af-55fo-bc46-b38508e6a8a4/57a963a7371d3.pdf.pdf>, with Joanne Hovis et al., *The Emerging World of Broadband Public-Private Partnerships: A Business Strategy and Legal Guide*, Benton Foundation (May 2017), <https://www.benton.org/sites/default/files/partnerships.pdf>. This is likely due to the fact that the GON-like arrangement that Santa Cruz had struck with Cruzio, a private ISP, has changed substantially in recent years. See, e.g., Jessica A. York, *Santa Cruz Defers Building Citywide Fiber Optic Internet Utility, Cruzio Deal Dies*, May 10, 2017, Santa Cruz Sentinel, <http://www.santacruzsentinel.com/article/NE/20170510/NEWS/170519970>; cf. *The Sentinel Missed the Mark: Santa Cruz Fiber Project Still Very Much on Track*, May 12, 2017, Cruzio Blog, <https://santacruzfiber.com/blog/the-sentinel-missed-the-mark-santa-cruz-fiber-project-still-very-much-on-track> (noting that the ISP would continue to work with the city to deploy its fiber network, but not disputing reports about how the city had elected to pass on using municipal bonds to fund a citywide FTTH network via a public-private partnership with Cruzio).

⁶ Obama-era officials were especially sanguine about municipal broadband networks, but some of the networks they cited as models ultimately failed. See, e.g., *Connecting America: The National Broadband Plan*, at p. 153, FCC (2010), <http://download.broadband.gov/plan/nationalbroadband-plan.pdf> (citing the GON in Bristol, VA, as a model that other cities follow); *Community-Based Broadband Solutions: The Benefits of Competition and Choice for Community Development High-Speed Internet Access*, at p. 30, Executive Office of the President (Jan. 2015), https://www.whitehouse.gov/sites/default/files/docs/communitybased_broadband_report_by_executive_office_of_the_president.pdf (same).

⁷ See, e.g., Eric Lampland & Chris Mitchell, *Santa Monica City Net: An Incremental Approach to Building a Fiber Optic Network*, Institute for Local Self-Reliance (March 2014), <http://ilsr.org/wp-content/uploads/2014/03/santa-monica-city-net-fiber-2014-2.pdf> (“Incremental Approach”); Masha Zager, *Santa Monica City Net: How to Grow a Network*, at p. 44-47, Broadband Communities (May/June 2011), http://www.bbpmag.com/2011mags/mayjune11/BBC_MayJun11_SantaMonica.pdf (“Grow a Network”).

⁸ See Blair Levin & Denise Linn, *The Next Generation Network Connectivity Handbook (Vol 2.0)*, at p. 13, Gig.U (Dec. 2016), <http://www.gig-u.org/cms/assets/uploads/2016/12/next-gen-handbook-v2.pdf> (“Handbook”).

⁹ See *City of Sunrise – Wi-Fi & Smart Cities*, at p. 4-8, Magellan Advisors (Jan. 2017), <https://sunrise.novusagenda.com/AgendaPublic/AttachmentViewer.ashx?AttachmentID=22809&ItemID=6309>.

¹⁰ See *Fiber-Optic Master Plan*, at p. 21, Magellan Advisors (May 2017), <http://southbaycities.org/sites/default/files/6.06%20The%20South%20Bay%20Fiber-Optic%20Master%20Plan.pdf>.

¹¹ See *The Potential for Ubiquitous, Open Fiber-to-the-Premises in San Francisco*, CTC Technology & Energy and IMG Rebel (Oct. 2017), at p. 45, <http://sfbos.org/sites/default/files/CTC-Deliverable22-final-20171017.pdf>.

¹² See, e.g., Karen Robes Meeks, *Can Long Beach be the Next Burbank or Santa Monica?*, Nov. 8, 2017, Long Beach Media Collaborative, <http://longbeachmc.org/can-long-beach-be-the-next-burbank-or-santa-monica/>.

¹³ See *Memo re City of Long Beach Fiber Network Infrastructure*, Attachment C, Nov. 6, 2017, City of Long Beach, <http://www.longbeach.gov/globalassets/city-manager/media-library/documents/memos-to-the-mayor-tabbed-file-list-folders/2017/november-6--2017---city-of-long-beach-fiber-network-infrastructure>.

¹⁴ See, e.g., *Incremental Approach; Grow a Network* at p. 44.

¹⁵ See, e.g., *Handbook* at p. 13

¹⁶ See, e.g., *Municipal Broadband Study for the City of Cambridge, Massachusetts*, at p. 47, Tilson (Aug. 2016), <https://www.cambridgema.gov/Departments/citymanagersoffice/~/media/B953A6DDE730421BBFDB892C86B65A37.ashx#page=8>.

¹⁷ See, e.g., *Incremental Approach*.

¹⁸ See, e.g., Susan Crawford, *The Surprising Backbone of the Internet of Things*, Oct. 12, 2016, Wired, <https://www.wired.com/2016/10/the-surprising-backbone-of-the-internet-of-things/>; Press Release, *Santa Monica's Digital Inclusion Pilot Connects Residents with 10 Gigabit Broadband*, Dec. 1, 2015, City of Santa Monica, <https://www.santamonica.gov/press/2015/12/02/santa-monica-s-digital-inclusion-pilot-connects-residents-with-10-gigabit-broadband>.

¹⁹ In the 1980s, Santa Monica deployed what many consider to be the “first publicly funded electronic network.” The city’s Public Electronic Network (PEN) was deployed primarily to “increase public participation in city government and politics.” PEN operated essentially as a low-bandwidth intranet that facilitated direct communications between the city and its constituents. See *Yakety-Yak, Do Talk Back*, Jan. 1, 1994, Wired, <https://www.wired.com/1994/01/pen/>.

²⁰ See *City of Santa Monica Telecommunications Master Plan*, City of Santa Monica (Feb. 1998), <https://muninetworks.org/sites/www.muninetworks.org/files/Telecommunications%20Master%20Plan%20Body.pdf> (“*Master Plan*”).

²¹ *Id.* at p. 41.

²² *Id.* at p. 45-46. Additional details were included in Exhibit J of the *Master Plan*, <https://muninetworks.org/sites/www.muninetworks.org/files/Telecommunications%20Master%20Plan%20Exhibits.pdf#page=91>.

²³ *Master Plan* at p. 46.

²⁴ *Id.* at p. 47-48.

²⁵ *Id.* at p. 48.

²⁶ See, e.g., Robert C. Ellickson, *Controlling Chronic Misconduct in City Spaces: Of Panhandlers, Skid Rows, and Public-Space Zoning*, 105 Yale L.J. 1165, 1167-1168 (1996) (describing a local ordinance to “limit street disorder”).

²⁷ *Santa Monica Airport Ass'n v. City of Santa Monica*, 659 F.2d 100 (9th Cir., 1981) (upholding local ordinances aimed at reducing airplane noise and airplane traffic at certain times of the day).

²⁸ *Santa Monica Food Not Bombs V. City of Santa Monica*, 450 F.3d 1022 (9th Cir., 2006) (finding that some, but not all, of the city’s ordinances, adopted in the wake of Occupy Wall Street protests, passed Constitutional muster).

²⁹ See, e.g., Sam Sanders, *Santa Monica Cracks Down on Airbnb, Bans ‘Vacation Rentals’ Under a Month*, May 13, 2015, NPR, <https://www.npr.org/sections/thetwo-way/2015/05/13/406587575/santa-monica-cracks-down-on-airbnb-bans-vacation-rentals-under-a-month>.

³⁰ *Master Plan* at p. 57.

³¹ See, e.g., *Incremental Approach* at p. 3.

³² *Master Plan* at p. 55 & Exhibit I.

³³ See, e.g., *Incremental Approach* at p. 3; *Master Plan* at p. 69.

³⁴ See *Adelphia May be Liable for Millions in Loans*, March 29, 2002, N.Y. Times, <http://www.nytimes.com/2002/03/29/business/company-news-adelphia-may-be-liable-for-millions-in-loans.html>.

³⁵ See *SEC is Investigating Adelphia Loans*, April 18, 2002, N.Y. Times, <http://www.nytimes.com/2002/04/18/business/sec-is-investigating-adelphia-loans.html>.

³⁶ See Geraldine Fabrikant, *Adelphia to Put Some Cable Systems Up For Sale*, May 9, 2002, N.Y. Times, <http://www.nytimes.com/2002/05/09/business/adelphia-to-put-some-cable-systems-up-for-sale.html>.

³⁷ A public hearing on the merger renewal was held on May 22, 2002; talks around a potential sale of some of Adelphia's California assets were ongoing at the time. See *City Staff Memo to Council Members re Public Hearing and Introduction for First Reading a Cable Renewal Franchise Ordinance with Century-TCI California, L.P. (aka Adelphia Communications Corporation); Resolution Rescinding Resolution No 7312 (CCS); Authorization for the City Manager to Execute a Settlement Agreement with Adelphia and a lease agreement for an Institutional Network*, May 21, 2002, City of Santa Monica, <https://www.smgov.net/departments/council/agendas/2002/20020521/s2002052107-C.htm> ("Staff Memo"); Geraldine Fabrikant & Andrew Ross Sorkin, *Adelphia Talks Said to Focus on Asset Sale in California*, May 27, 2002, N.Y. Times, <http://www.nytimes.com/2002/05/27/business/adelphia-talks-said-to-focus-on-asset-sale-in-california.html>.

³⁸ *Staff Memo*.

³⁹ See, e.g., Joseph B. Treaster, *Adelphia Files for Bankruptcy*, June 26, 2002, N.Y. Times, <http://www.nytimes.com/2002/06/26/business/adelphia-files-for-bankruptcy.html>.

⁴⁰ *Staff Memo*.

⁴¹ See Martin Peers, *Adelphia Buys L.A. Century*, March 7, 1999, Variety, <http://variety.com/1999/biz/news/adelphia-buys-l-a-century-1117492023/>.

⁴² See *An Ordinance Consenting to the Renewal of a Cable Television Franchise in the City of Santa Monica ("City") to Century-TCI, L.P. D/B/A Adelphia Cable Communications*, Section 6(m), May 2002, City of Santa Monica, <https://www.smgov.net/departments/council/agendas/2002/20020521/s2002052107-C-1.htm>.

⁴³ *Staff Memo*.

⁴⁴ *Grow a Network*.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Incremental Approach* at p. 10.

⁴⁹ *Id.* It should be noted that others have sought to use of sewer lines to deploy fiber, but often with little success. For example, SiFi Networks, a FTTH developer active in the U.S. GON space, has long sought to use a deployment strategy that revolves around using sewers to aid broadband network build-out. See SiFi Networks, FOCUS, <http://sifinetworks.com/what-is-focus/>. To date, however, this firm has yet to complete a large-scale network in the U.S. despite partnerships with and exclusive access to sewer lines provided by numerous cities (background research on file with the ACLP).

⁵⁰ See *An Ordinance of the City Council of the City of Santa Monica Regulating Underground Utility and Wireless Telecommunications Installations*, July 13, 2004, Santa Monica City Council, <https://www.smgov.net/departments/council/agendas/2004/20040713/s2004071307-B-1.htm>.

⁵¹ The city found that "both the surface and the subsurface of the PROW has experienced a proliferation in competing uses, including, without limitation, water, sewer, storm drains, gas, electric, telephone, telecommunications, and cable lines that crisscross the PROW. The large number and variety of these uses make management of the PROW necessary in order to preserve and to maintain the public health and welfare." *Id.* at Section 7.06.103.

⁵² *Id.* at Section 7.06.506.

⁵³ See *Incremental Approach* at p. 10-12; *Leverage Your Municipal Assets to Deliver Broadband*, at Slide 28, HRGreen,

http://www.southbaycities.org/sites/default/files/infrastructure/PRESENTATION_HR%20Green.pdf#page=28.

⁵⁴ See, e.g., *In the Matter of Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facilities Siting*, Reply Comments of The California Wireless Association, at p. 11-12, WC Docket No. 11-59 (Sept. 30, 2011), <http://calwa.org/wp-content/uploads/2011/06/FCC-NOI-reply-comments.pdf>.

⁵⁵ See Press Release, *Santa Monica's Digital Inclusion Pilot Connects Residents with 10 Gigabit Broadband*, Dec. 1, 2015, City of Santa Monica, <https://www.santamonica.gov/press/2015/12/02/santa-monica-s-digital-inclusion-pilot-connects-residents-with-10-gigabit-broadband>.

⁵⁶ See *FY 2014-15 Year-End Budget Changes; and FY 2015-16 Budget, Position and Compensation Changes*, Staff Report 1412, Oct. 27, 2015, City of Santa Monica, http://santamonicacityca.igmp2.com/Citizens/Detail_LegiFile.aspx?Frame=&MeetingID=1046&MediaPosition=&ID=1412&CssClass= (“FY 2014-15 Year-End Budget Changes”).

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ See *Construction Contract for Santa Monica Utility Undergrounding and Excavation*, Staff Report 1927, June 13, 2017, City of Santa Monica, http://santamonicacityca.igmp2.com/citizens/Detail_LegiFile.aspx?Frame=&MeetingID=1095&MediaPosition=&ID=1927&CssClass= (“Construction Contract”).

⁶⁰ *FY 2014-15 Year-End Budget Changes*.

⁶¹ *Construction Contract*.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ See CDBG Broadband Infrastructure FAQs, U.S. HUD, <https://www.hudexchange.info/resource/4891/cdbg-broadband-infrastructure-faqs/>.

⁶⁶ See *Capital Improvement Program: FY 2016-18 Adopted Biennial Budget*, at p. 100, City of Santa Monica, <https://finance.smgov.net/Media/Default/annual-reports/FYE2017/FYE2017-CIP-Budget.pdf#page=105> (noting the two \$970,000 allocations); U.S. HUD, Community Planning and Development Program Formula Allocations for FY 2017 – California, <http://www.hudexchange.info/onecpd/assets/File/fy2017-formula-allocations-ca.xlsx> (noting that Santa Monica's total CDBG allocation for FY 2017 was \$ 1,031,923); U.S. HUD, Community Planning and Development Program Formula Allocations for FY 2016 – California, <http://www.hudexchange.info/onecpd/assets/File/fy2016-formula-allocations-ca.xlsx> (noting that Santa Monica's total CDBG allocation for FY 2016 was \$1,027,760).

⁶⁷ See *FY 2017-19 Adopted Biennial Budget, Line Item Detail*, at p. 84, City of Santa Monica, <https://finance.smgov.net/Media/Default/annual-reports/FYE2018/FYE2018-Operating-Budget-Line-Item.pdf#page=93> (“FY 2017-19 Adopted Biennial Budget”).

⁶⁸ See *State CDBG Program Broadband Infrastructure FAQs*, at p. 2, U.S. HUD (last updated Jan. 2016), <https://www.hudexchange.info/resources/documents/State-CDBG-Program-Broadband-Infrastructure-FAQs.pdf>.

⁶⁹ See Jory Wolf, *Presentation: Building a Municipal Broadband Network – Strategies Implemented in Santa Monica California*, at Slide 3, City of Santa Monica, http://www.southbaycities.org/sites/default/files/general_assembly/speakers/Jory%20Wolf%20Presentation_o.pdf.

⁷⁰ See *City of Santa Monica Economic Stats 2017*, at p. 1, May 2017, City of Santa Monica, https://www.smgov.net/uploadedFiles/Departments/HED/Economic_Development/Doing_Business_in_Santa_Monica/Business_Climate/SM%20ECONOMIC%20STATS%202017%20rev.%205-15-17.pdf.

⁷¹ *FY 2017-19 Adopted Biennial Budget* at p. 84.

⁷² *Grow a Network* at p. 46.

⁷³ See, e.g., Jennifer Wang, *3 Reasons for the Rise of L.A.'s Silicon Beach Tech Scene*, April 28, 2014, The Orange County Register, <https://www.ocregister.com/2014/04/28/3-reasons-for-the-rise-of-las-silicon-beach-tech-scene/>; Marisa Kendall, *Snap's IPO May Make Silicon Beach a Worthy Silicon Valley Rival*, Jan. 7, 2017, The Mercury News, <https://www.mercurynews.com/2017/01/07/snaps-ipo-may-make-silicon-beach-worthy-silicon-valley-rival/>.

⁷⁴ See *An Ordinance of the City Council of the City of Santa Monica Adding Chapter 7.70 to the Santa Monica Municipal Code Relating to the Regulation of Telecommunications Facilities on Public Property and in the Public Right of Way and Amending and Repealing Certain Provisions of Chapter 7.06 of the Santa Monica Municipal Code Relating to Telecommunications Facilities*, City of Santa Monica (July 2016), <http://santamoniacityca.iqm2.com/Citizens/FileOpen.aspx?Type=4&ID=3263>.

⁷⁵ See, e.g., *In the Matter of Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies*, Comments of Crown Castle, at p. 20-21, FCC WT Docket No. 16-421 (March 8, 2017), [https://ecfsapi.fcc.gov/file/1030840282837/Crown_Castle_Comments_-_Small_Cell_Infrastructure_PN_\(Final\).pdf](https://ecfsapi.fcc.gov/file/1030840282837/Crown_Castle_Comments_-_Small_Cell_Infrastructure_PN_(Final).pdf).

⁷⁶ A major factor is tourism, which the city describes as “a key piece of the local economy.” *FY 2017-19 Adopted Biennial Budget* at p. 25. For data on the role that tourism plays in the local economy, see *Santa Monica 2016 Summary Tourism Economic & Fiscal Impacts, Visitor Profile*, Santa Monica Travel & Tourism (2016), <https://www.santamonica.com/wp-content/uploads/2015/04/2-Page-Annual-Econ-Imp-Summary-2016.pdf>.