

An aerial photograph of a city, likely Boulder, Colorado, with a dense forest of green trees in the foreground and middle ground. In the background, a range of mountains with significant snow cover is visible under a clear blue sky. The text "Next Generation Broadband Engagement" is overlaid in white, bold, sans-serif font across the upper portion of the image.

# Next Generation Broadband Engagement

# NetCity is specialized consulting practice helping cities to strategically plan for and implement technology

- Broadband Strategic Planning
- Partnerships and Governance Agreements
- Fiber Optic Business Plans
- Public Safety Wireless Networks
- Engagement and Facilitation
- Gigabit Strategy – Smart Cities
- Transit technologies

*Strategic Partners,  
connecting government,  
academia and industry*



## My history- I've been around a long time

- Started as a consultant in DC
- Worked for the City of LA, State of Oregon, City of Portland
- Task Force on Telecommunications – 1991
- Started the first statewide dial-up network and first distance learning network (Compass and Oregon Ed-Net)
- Created the first municipal fiber network in Oregon (IRNE Network in Portland)
- Wrote the first Broadband Strategic Plan for a city in Oregon (Portland)
- Conducted the OBAC Broadband Utilization Planning
- Worked on the Independence Gigabit City Strategy (Innovate Independence)
- Current projects in transit technology, public safety, IoT (wireless)

# Strategic Planning Experience

Strategic Planning Projects Completed/In Process	Client	Date
Cities of Monmouth and Independence Broadband Strategic Plan	Independence, OR	2014
South Central Oregon Economic Development District Broadband Strategic Plan	Klamath Falls, OR	2014
City of Myrtle Point Broadband Strategic Plan	Myrtle Point, OR	2014
City of Sherwood Broadband Strategic Plan	Sherwood, OR	2014
City of Eugene Broadband Strategic Plan	City of Eugene, OR	2013
Confederated Tribes of Warm Springs Indians Broadband Strategic Plan	Warm Springs, OR	2013
Wasco County Broadband Strategic Plan	Wasco County, OR	2013
City of Sandy, OR Broadband Strategic Plan	Sandy, OR	2013
Puget Sound Area Regional Public Safety Communications governance agreement	King County, WA	2012
Portland Broadband Strategic Plan	City of Portland, OR	2011
Town of Salem, NH Fiber Optic Metropolitan Area Network Plan	Salem, NH	2009
Everett School District Fiber Metro Area Network Plan & Design	Everett, WA	2009
7-County Public Safety Communications Regional Governance Plan	State of Oregon	2008
Portland Regional Public Safety Governance Strategic Plan	Portland, OR	2005
DC-NET Operations Plan	District of Columbia	2004
WSDOT Statewide Wireless Communications Plan	WSDOT	2004
WSDOT Statewide Communications Plan	WSDOT	2003
Telecommunications Strategic Plan	City of Tampa, FL	2003
Telecommunications Strategic Plan	City of Los Angeles, CA	2002
Business Plan and Network Build and Management of the Integrated Regional Telecommunications Enterprise	Portland, OR	2001

# Our Differentiator: Smart Cities Approach to Planning and Implementing a Broadband Strategy Important

## VISION

To provide world-class municipal services through operational excellence and a culture of innovation.

CITY OF FORT COLLINS  
2015-16 STRATEGIC PLAN

Looking at Broadband through a “innovation” lens focuses technology planning and establishes a foundation to support the next-generation economy.

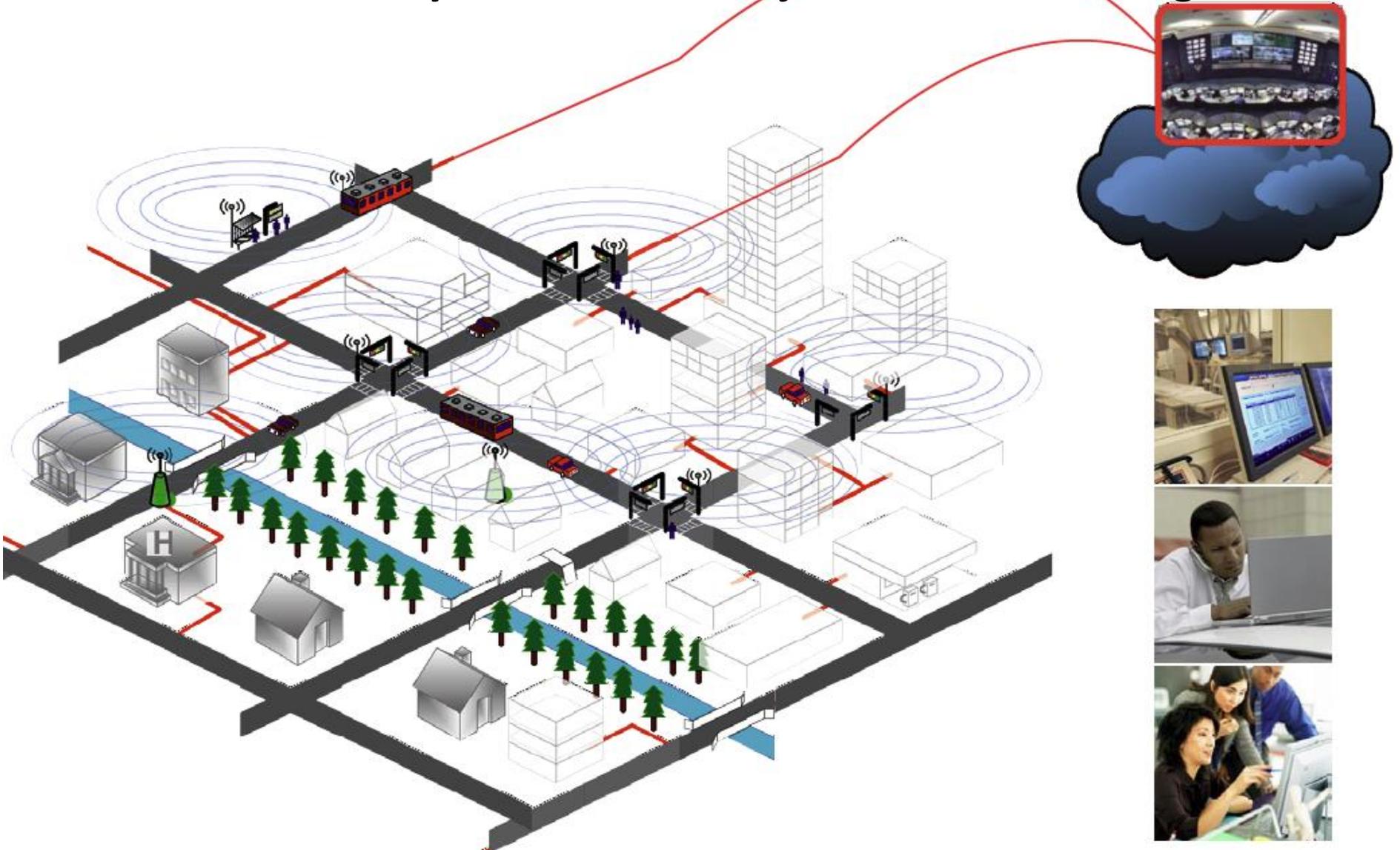
Workforce, transportation, energy, new economy jobs, health-care, education, public safety

Bricks and Mortar Backlash is an opportunity for rural development



# Seamless Infrastructure, Borderless Geography: Our Commitment to Smart Cities

**Next generation broadband infrastructure supports a connected community and sustainable jobs in a rural setting**



# Every Community Needs

- Computer Science and Electronics classes in K-12
- Coding instruction in elementary school
- Sensor kits: about the cost of a textbook
- Meet-Ups: cultural introduction to the new work environment
- Mobile Networks
- And...oh yes, Broadband



## Variety of Technical Environments:

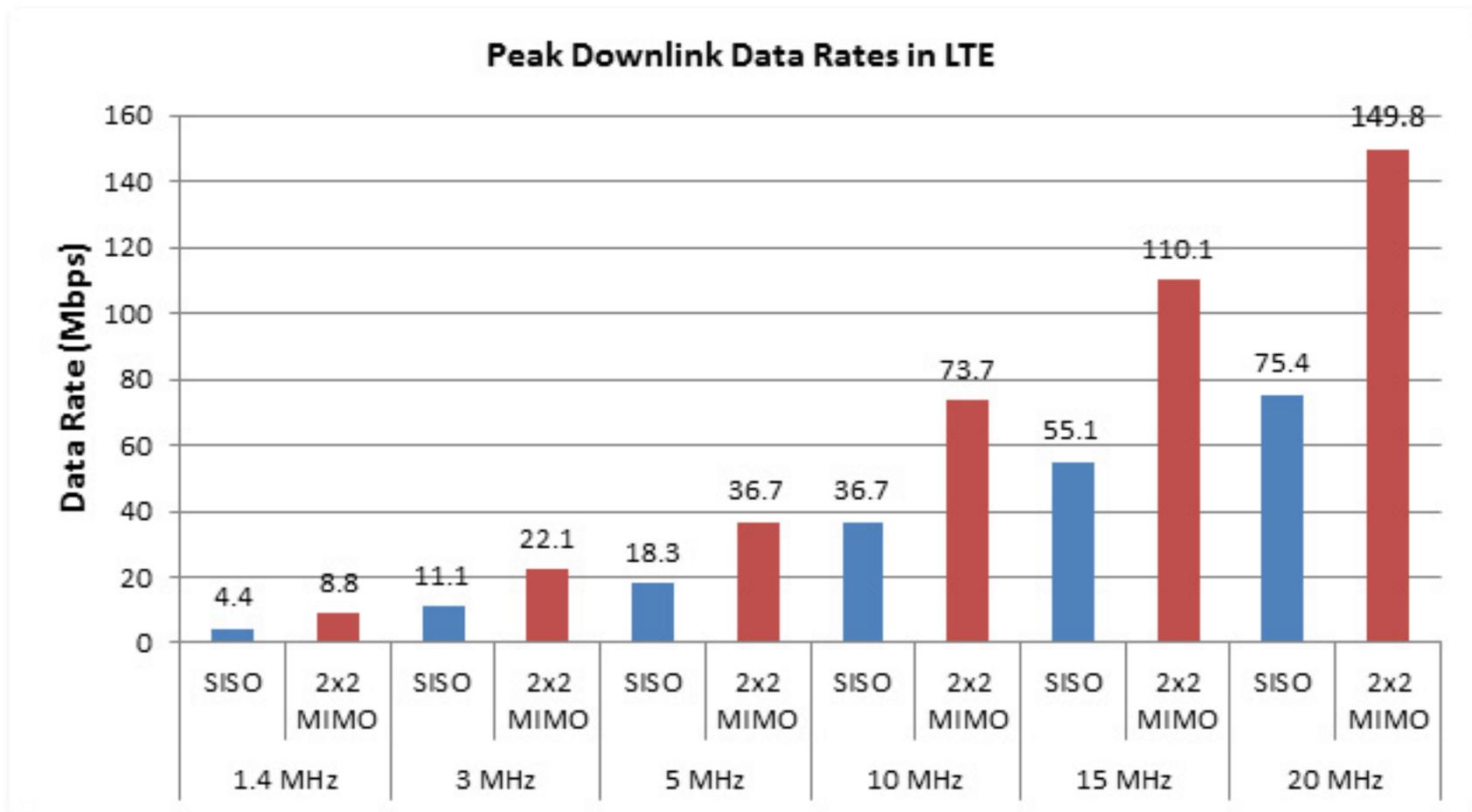
- Municipal FTTH network owners
- Municipal wireless providers
- Open-access anchor tenant network owners
- Larger cities, rural areas, counties, tribes
- Cities with multiple commercial carriers and ISPs
- Jurisdictions with very limited options



## The importance of understanding the market “landscape”

- The market in 2005 is not the market today
  - The market in 2016 will not be the market in 2026
- Muni models– great to look at all flavors
- Mobile strategy often overlooked

# A word about the forgotten strategy: Mobile Networks



## Next Up: 4G using multiple bands, 5G

Next generation smart devices will be able to access 1 Gbps downloads, 500 Mbps uploads.

Networks already deploying across the Country as a result of the AWS spectrum auction.

		Rel. 8 LTE	LTE-Advanced
Peak data rate	DL	300 Mbps	1 Gbps
	UL	75 Mbps	500 Mbps
Peak spectrum efficiency [bps/Hz]	DL	15	30
	UL	3.75	15

# Exceptional planning process design

- **Clarity of purpose and process.**
- **Time efficiency that incentivizes stakeholder participation**
- **Facilitation that keeps things on-point, lively and fair/equitable.**
- **Structured discussion gets to the “heart” of key planning issues and reveals principles and goals.**
- **Business needs and opportunities are understood and defined from the stakeholder perspective.**
- **Opportunity analysis for service development highlighted.**
- **Consensus and multi-stakeholder buy-in built through direct engagement in plan development.**



Goal

Strategy

<p><b>Improve Rural and Remote Access</b></p>	<p>Provide subsidies to residents and businesses for satellite service</p>	<p>Subsidize ISPs who provide broadband to targeted communities</p>	<p>Fund a provider to build out wireless infrastructure</p>	<p>Build rural wireless distribution networks</p>	
<p><b>Economic Development</b></p>	<p>Build Broadband awareness for small biz</p>	<p>Create one or two targeted pilot business incubators</p>	<p>Subsidy program to help pay for high speed access subscription</p>	<p>Build fiber to the premise for business centers</p>	
<p><b>Digital Literacy and Workforce Development</b></p>	<p>Create digital literacy training programs</p>	<p>Fund laptop giveaways</p>	<p>Start mentoring programs</p>	<p>Create high-speed neighborhood hubs</p>	<p>Attract software development firms to the area</p>
<p><b>Health Care and Education</b></p>	<p>Free or low cost tablets and broadband subscription to students</p>	<p>Grants for tele-health service expansion</p>	<p>Subsidize Internet2 interconnection for universities</p>	<p>Build fiber to schools and clinics</p>	
<p><b>Improve Municipal Infrastructure</b></p>	<p>Provide "affordability" grants to increase demand for capacity/speed</p>	<p>Provide incentives/subsidies to ISPs to build networks</p>		<p>Undertake muni fiber to the home builds</p>	
<p><b>Influence Local, State and Federal Policy</b></p>	<p>Maximize right of way and permitting leverage locally</p>	<p>Re-define broadband standard. Consider "necessary infrastructure"</p>		<p>Federal Funding for Municipal Broadband</p>	



Goal

Strategy

Improve Rural and Remote Access	Provide subsidies to residents and businesses for satellite service	Subsidize ISPs who provide broadband to targeted communities	Fund a provider to build out wireless infrastructure	Build rural wireless distribution networks	
Economic Development	Build Broadband awareness for small biz	Create one or two targeted pilot business incubators	Subsidy program to help pay for high speed access subscription	Build fiber to the premise for business centers	
Digital Literacy and Workforce Development	Create digital literacy training programs	Fund laptop giveaways	Start mentoring programs	Create high-speed neighborhood hubs	Attract software development firms to the area
Health Care and Education	Free or low cost tablets and broadband subscription to students	Grants for tele-health service expansion	Subsidize Internet2 interconnection for universities	Build fiber to schools and clinics	
Improve Municipal Infrastructure	Provide "affordability" grants to increase demand for capacity/speed	Provide incentives/subsidies to ISPs to build networks		Undertake muni fiber to the home builds	
Influence Local, State and Federal Policy	Maximize right of way and permitting leverage locally	Re-define broadband standard. Consider "necessary infrastructure"		Federal Funding for Municipal Broadband	

Policy-Based ("D-Side")

Network Infrastructure Based ("S-Side")

## Successful planning

- The successful plan is built on economic and community goals (utilization planning, demand activation)
- It takes into account the competitive and financial environment for telecommunications; including the cost and frequency of technology re-fresh
- It takes into account the changing work, shopping and education environment
- It has a mobile component

# What makes the project successful?

- ✓ Relevant research
- ✓ Partnerships
- ✓ Community consensus
- ✓ Fiscal and political will
- ✓ Recognition of adoption and utilization issues
- ✓ Roadmap for political and fiscal sustainability
- ✓ Collaborative agreements
- ✓ Understanding of competitive forces

Thanks

Nancy Jesuale, President  
NetCity Inc.

[njesuale@netcityengineering.com](mailto:njesuale@netcityengineering.com)

503-936-2202

NETCITY INC.

# Testimonials from our Strategic Planning Clients



NETCITY INC.

