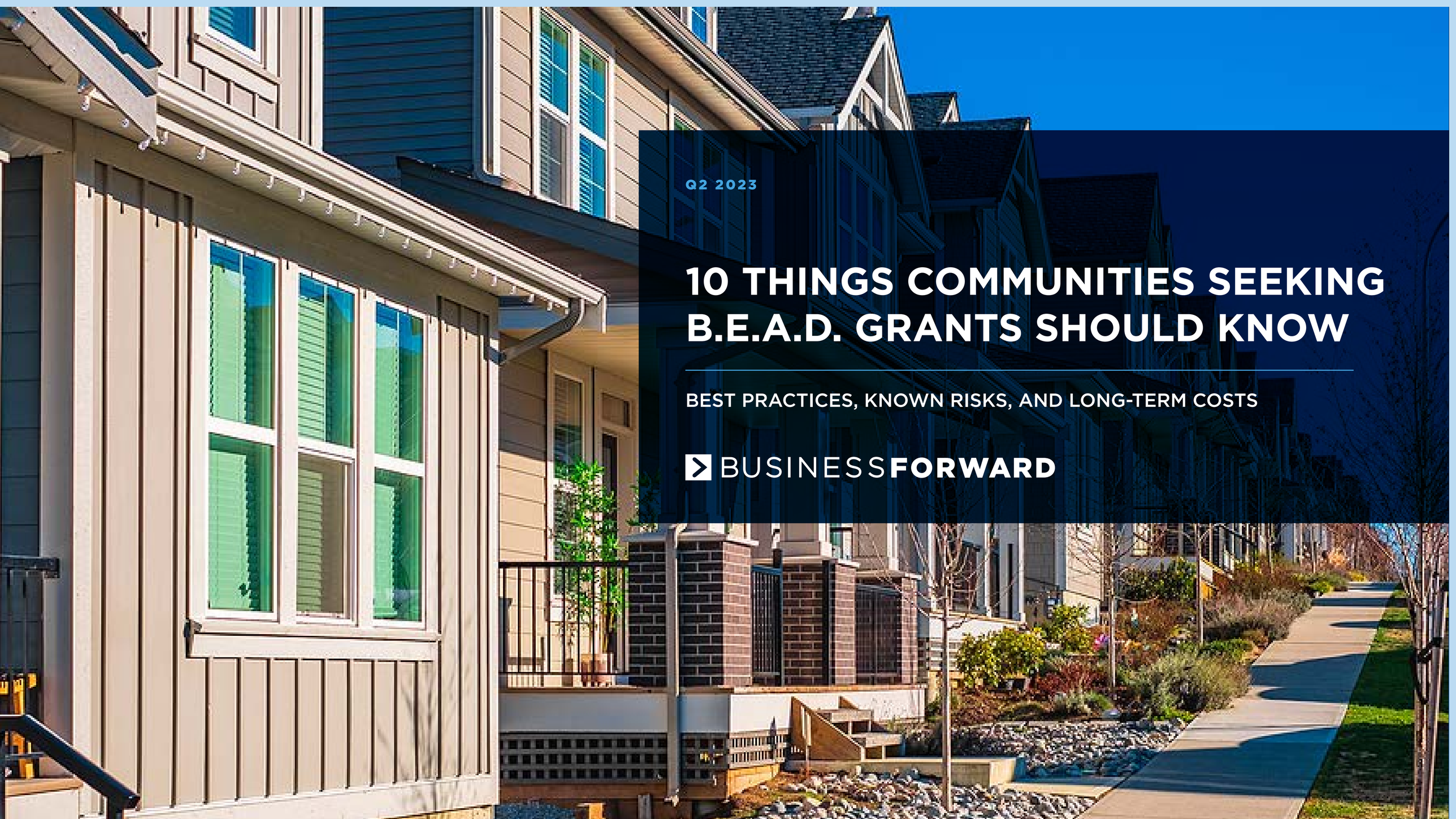


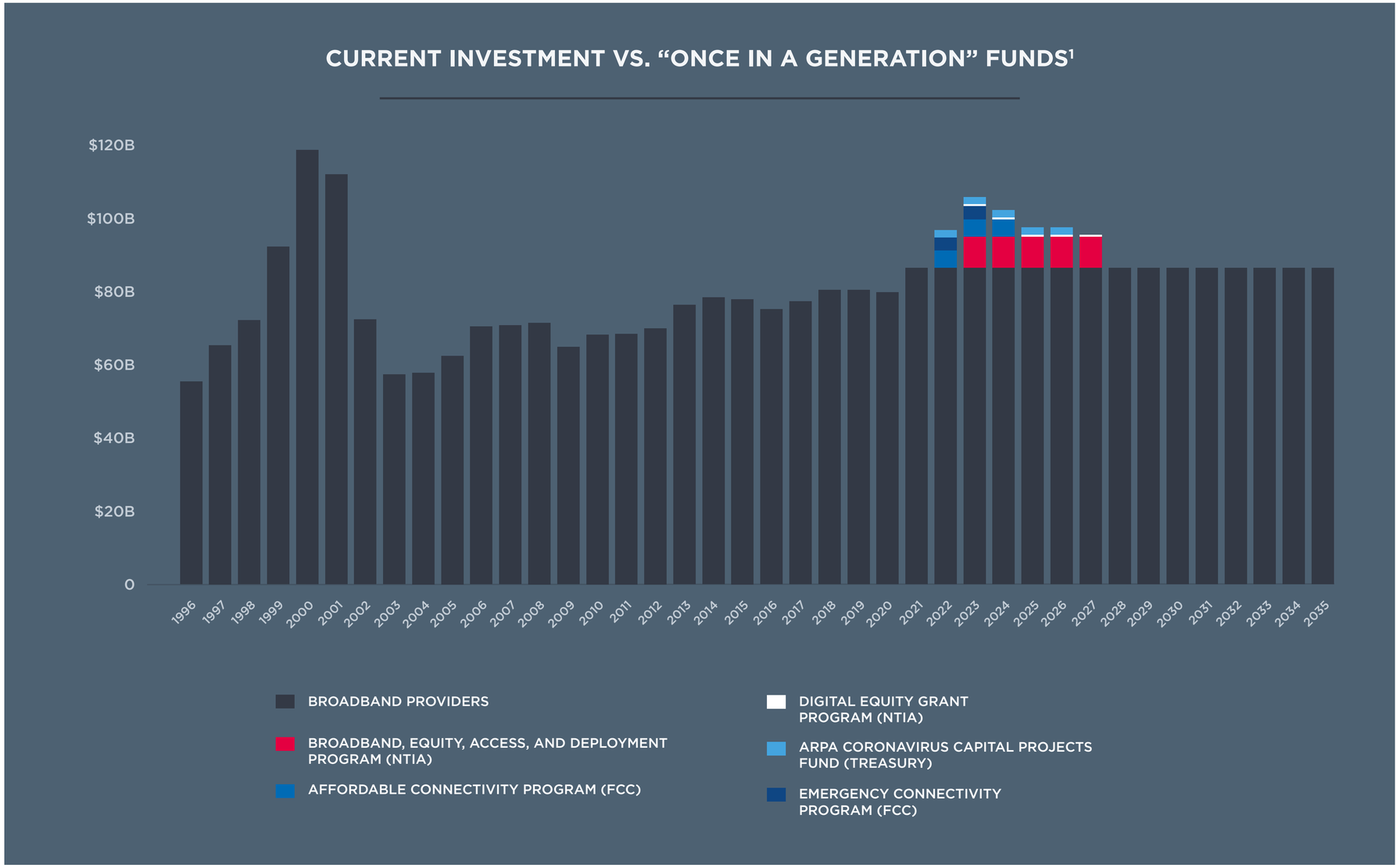
Q2 2023

10 THINGS COMMUNITIES SEEKING B.E.A.D. GRANTS SHOULD KNOW

BEST PRACTICES, KNOWN RISKS, AND LONG-TERM COSTS

BUSINESSFORWARD

#1: FEDERAL BROADBAND SPENDING IS MASSIVE, UNLESS YOU COMPARE IT TO THE COST OF BUILDING, MAINTAINING, AND IMPROVING BROADBAND NETWORKS



QUESTION:

How could we allow ourselves to spend billions on broadband and not reform the industry?

ANSWER:

$77B = just 12% of total broadband spending over those seven years – and less than 9% of what will be spent this decade.

Yes, it's an historic investment, but we depend a lot more on what private companies spend than what Congress authorized.

#2: RISKS FACING BROADBAND OPERATORS HAVE ALWAYS BEEN SUBSTANTIAL

TECHNOLOGY RISK

Investing in today's technology (fiber) with delivery in 4-10 years.

Current providers testing applications that make fiber + coaxial 8x faster than today's fiber.

Microsoft, Amazon, SpaceX, Qualcomm and others investing in spectrum, satellites, and 5G technologies.[2]

MARKET RISK

Streaming services, like Netflix, are reducing demand for some cable services, hurting revenue and reducing margins.

Last year, streaming volume increased 22.6%, while cable usage dropped 2% in the same period.[3]

"...cable providers could be at flat growth next year and potentially negative thereafter..."[4]

- KANNAN VENKATESH, BARCLAYS

GRANT RISK

Broadband funds spread across Treasury, FCC, Agriculture, and Commerce Departments = multiple streams of funds, beginning in different years, with different deadlines, and conflicting rules of engagement.

Federal funds being distributed in-state by small, start-up-like teams.

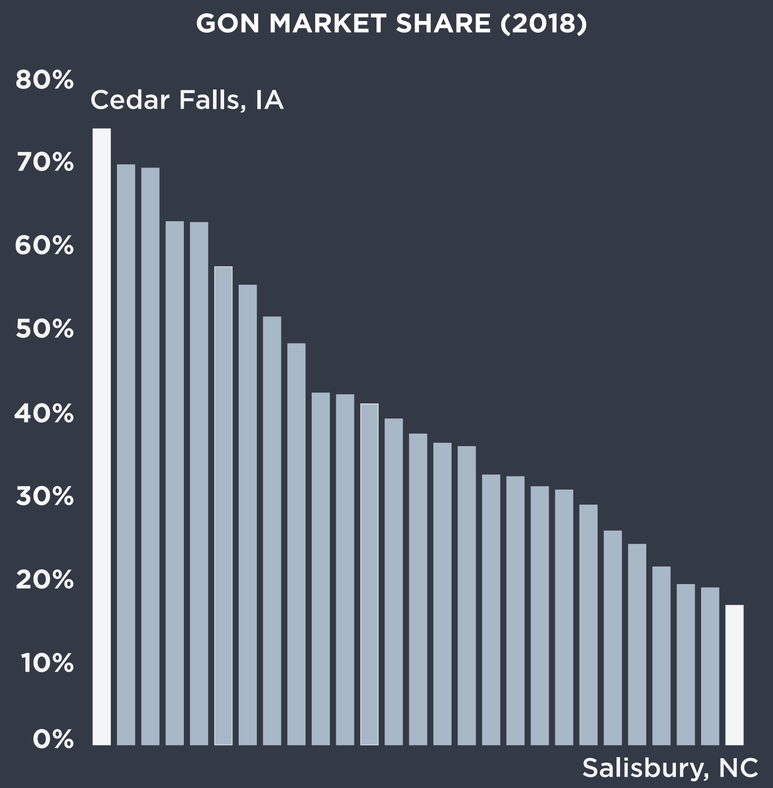
WISHFUL THINKING

9 OUT OF 10 GONS ARE LOSING MONEY

the result of construction delays, unrealistic cost and revenue assumptions, and recurring capital expenditures.[5]

#3: THAT'S WHY MOST GONS STRUGGLE, AND MANY FAIL

FEW GONS ACHIEVE MARKET SHARE CONSULTANTS PROMISE[6]



OF 15 GONS

THAT SHARE COMPLETE FINANCIAL DATA AND WERE FUNDED IN OR BEFORE 2011,[7]

2

WILL BREAK EVEN BY THE TIME THE BONDS BECOME DUE

10

WILL NEVER BREAK EVEN

14

REQUIRED ADDITIONAL GOVERNMENT FUNDING TO KEEP OPERATIONS RUNNING

11

REQUIRED INTERFUND LOANS FROM OTHER MUNICIPAL UNITS

6

CONTRIBUTED TO "SIGNIFICANT DOWNGRADES" IN THE MUNICIPALITY'S BOND RATING

3

SOLD THEIR OPERATIONS AT SIGNIFICANT LOSSES

SOURCE: UPENN CASH FLOW ANALYSIS of 15 GONs (2010–2019)

#4: NEW RISKS ARE EMERGING, WHICH COULD MAKE GON FAILURES MORE EXPENSIVE

INFLATION

On top of rising labor, energy, and parts costs, historic broadband spending creates fiber shortages, price spikes.

> **Inflation is wreaking havoc… making financially tough projects even tougher**
>
> - FIERCE TELECOM[8]

18 months after FCC awarded $9B in RDOF grants, providers receiving 1 out of 3 grants have already defaulted – putting families in those tracks at the back of the line.

START-UP RISK

The "non-traditional" partners officials favor are undercapitalized, less experienced, and lack other sources of revenue to survive setbacks.

In 2020, the FCC awarded LTD, a company with fewer than 100 employees, $1.3B in grants to build fiber loops across 15 states.

When LTD defaulted across 7 of those states, FCC canceled the rest.

528,000 households that should have been served by LTD go to the back of the line, paying the price for FCC's risky bet.[9]

CLIMATE CHANGE

Severe weather – particularly flooding – is damaging fiber networks, hurting margins.



Risk rises with "microtrenched" lines just 2' below ground level.

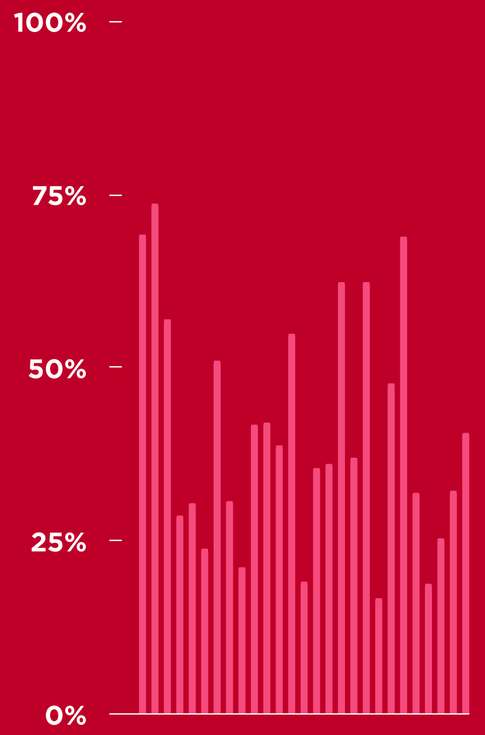
States, counties on the hook for GON repairs.



#5: GONS FAIL BADLY

FEW GONS ACHIEVE MARKET SHARE CONSULTANTS PROMISE

GON MARKET SHARE (2018)[10]



MEANWHILE, CONSTRUCTION AND OPERATING COSTS KEEP RISING

NTPs face 18-month delays for fiber orders.

Small towns and counties are competing for a finite number of engineers and other skilled workers.



WHEN COSTS > REVENUE, THE FAIR SOLUTION IS TO RAISE SUBSCRIPTION PRICES… BUT THAT DRIVES SUBSCRIBERS TO QUIT, WHICH MAKES THE DEFICIT WORSE

Reinforcing cycle of higher prices, causing subscribers to leave, requiring higher prices, causing subscribers to leave.



INSTEAD, GONS TEND TO RAISE TAXES OR USE FUNDS MEANT FOR SCHOOLS, FIRST RESPONDERS, AND OTHER PRIORITIES

MORE DEBT (NEW BONDS)

APPLYING STATE GRANTS TO GON DEFICITS

FEWER TEACHERS, COPS, FIREFIGHTERS

#6: NON-TRADITIONAL PARTNERS DO NOT ELIMINATE “FOR-PROFIT” RISK; MANY COMPOUND IT

> “Our approach prioritizes support for broadband networks owned, operated by, or affiliated with local governments, non-profits, and co-operatives — providers with less pressure to turn profits and with a commitment to serving entire communities.”

- THE BIDEN-HARRIS ADMINISTRATON, MARCH 2021[11]

1.

NTPs ARE UNDERCAPITALIZED AND LESS EXPERIENCED

2.

THE CONSULTING, ENGINEERING, AND OPERATING COMPANIES NTPs HIRE ARE FOR-PROFITS

3.

INEXPERIENCE + GREED = WASTE, FRAUD, AND ABUSE

#7: "NON-TRADITIONAL PARTNER" RECORD ON WASTE, FRAUD, & ABUSE SHOULD CONCERN YOU

6 INVESTIGATIONS OF FEDERAL BROADBAND SPENDING (2000-2017) FOUND GRANTEES IGNORED THE UNCONNECTED AREAS THEY WERE SUPPOSED TO HELP AND "OVERBUILT" AFFLUENT SUBURBS.

2004 INVESTIGATION:

58%

OF FUNDS MISSPENT[12]

2009 INVESTIGATION:

ONLY 4%

OF GRANTS WENT TO UNSERVED COMMUNITIES[13]

2014 INVESTIGATION:

43%

OF LOANS (AND 53% OF LOAN VALUE) SINCE 2002 IS IN DEFAULT OR RESCINDED[14]

FAKE INVOICES, INFLATED EXPENSES

$101M GRANT

for rural Kansas spent on an entirely different city

Austin, TX, hotel parties part of

$400K FRAUD

$12M FIBER LINE

in IL redirected from unserved areas to contractors' neighborhood

$2.4M

in doctored invoices by grantee in WV and OH[15]

#8: HOW “LAST MILE” SPENDING WORKS – AND WHY “MIDDLE MILE” SPENDING IS RISKY

IN REMOTE OR RURAL AREAS, “LAST MILE” CONNECTIONS TO HOMES CAN COST $10,000/EACH

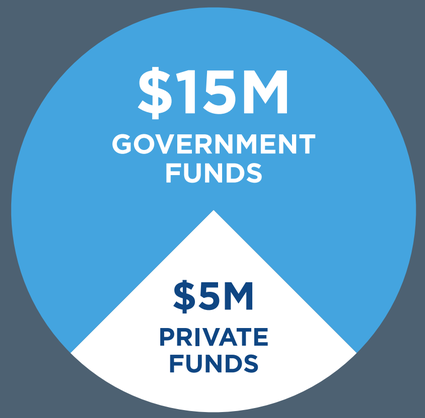
Private companies can typically afford to cover about $2,500 of that amount. They earn back their investment in 5+ years.[16]

In other words, this is a $7,500/house problem, and each government dollar can attract 33 cents in private investment.

CUMBERLAND AND SALEM (NJ) COUNTIES CASE STUDY

Two counties cover 79,000 households; ~2000 (2%) remain unconnected.

At $10K/household, $20,000,000 = $15,000,000 government + $5,000,000 private companies.



INSTEAD OF PROVIDING LAST MILE CONNECTIONS FOR THOSE ~2000 HOMES, COUNTIES PROPOSE A NEW $29M “MIDDLE MILE” LOOP THAT DUPLICATES MIDDLE MILE LOOPS ALREADY SERVING CUMBERLAND AND SALEM COUNTIES’ OTHER 77K HOUSEHOLDS

Local communities still have to pay for $10,000/household last mile connections.

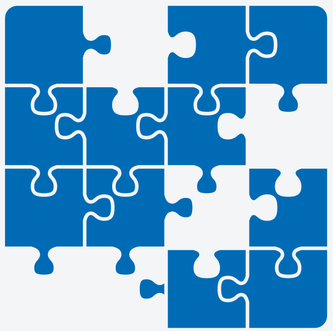
Federal grants could cover $13M of the $29M loop, but taxpayers pick up the rest – and taxpayers pay full cost of maintaining the loop (assuming 5% of original cost, that’s $1.5M/year).

WITH THE $16M COUNTIES WILL SPEND BUILDING A GON MIDDLE MILE, THEY COULD CONNECT THOSE ~2,000 WITH $1M LEFT FOR DIGITAL LITERACY TRAINING, AFFORDABLE LAPTOPS, CUSTOMER SUPPORT

WORSE, COUNTIES ASSUME PRIVATE COMPANIES WILL SHUT OFF THE LOOPS THEY HAVE THERE AND PAY THE COUNTIES TO USE THEIRS. BUT WHY?

#9: ADOPTION IS A “PUZZLE” PROBLEM

LIKE A PUZZLE: IF YOU MISS ONE PIECE, YOU FAIL



AFFORDABLE DEVICE

DIGITAL LITERACY

RELEVANCE (VS. SMARTPHONE)

ONLINE SUPPORT

BROADBAND CONNECTION

TRUSTED, LOCAL ADVISORS REQUIRED – PREFERABLY IN-PERSON



BOSTON PAID 23 DIFFERENT ORGANIZATIONS TO HELP GET PEOPLE ONLINE, BASED ON THEIR AGE, RACE, ETHNICITY, INCOME, DIGITAL LITERACY, AND HOUSING[17]

ALLSTON BRIGHTON COMMUNITY DEVELOPMENT CORPORATION
BOSTON CENTER FOR INDEPENDENT LIVING
BOSTON HIGHER EDUCATION RESOURCE CENTER
BOSTON PROJECT MINISTRIES
CASTLE SQUARE TENANTS’ ORGANIZATION (CSTO)
CENTRAL BOSTON ELDER SERVICES
CENTER FOR COMMUNITY HEALTH EDUCATION RESEARCH AND SERVICE
CODMAN SQUARE NEIGHBORHOOD DEVELOPMENT CORPORATION
EAST BOSTON COMMUNITY COUNCIL
ETHOS
FOUND IN TRANSLATION
HARVARD STREET NEIGHBORHOOD HEALTH CENTER
MOTHERS FOR JUSTICE AND EQUALITY
NEIGHBORHOOD OF AFFORDABLE HOUSING
PRINCE HALL COMMUNITY CORPORATION
ST. MARK COMMUNITY EDUCATION PROGRAM
VICTORY PROGRAMS
X-CEL EDUCATION
ZUMIX

HOUSING AND FOOD INSECURITY ARE SOURCE AND SYMBOL OF THE ADOPTION PROBLEM

FOR MANY, MAKING BROADBAND FREE ISN’T ENOUGH



1 IN 5 DETROIT RENTERS FACES EVICTION



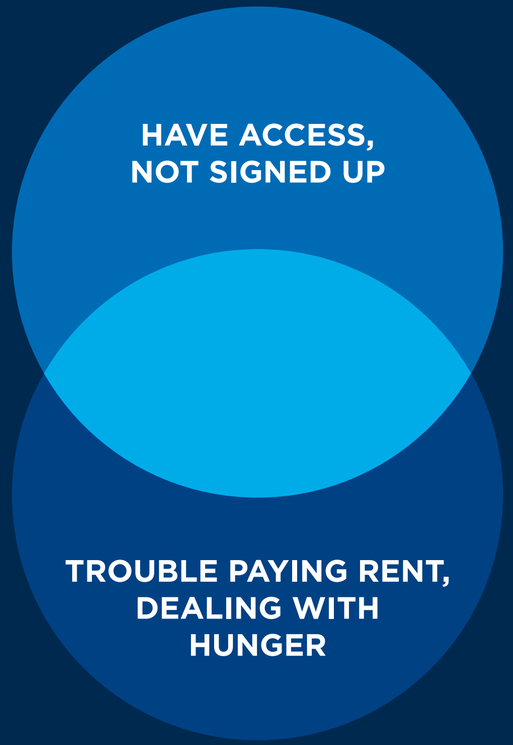
1 IN 4 CAN’T PAY THEIR WATER BILLS



1 IN 2 GO HUNGRY[18]

#10: IN MARKETS WITH SUBSTANTIAL ADOPTION GAP, PUTTING MONEY TOWARDS FIBER (INSTEAD OF ADOPTION) INCREASES FAILURE RISK

WHAT IS THE OVERLAP BETWEEN DETROIT'S 30% ADOPTION GAP AND ITS HOUSING AND HUNGER PROBLEM?



DOLLARS SPENT ON FIBER = DOLLARS NOT SPENT ON DIGITAL LITERACY TRAINING, AFFORDABLE LAPTOPS, AND ONLINE SUPPORT

If 1 in 5 Detroit households are behind on their rent/mortgage - and 1 in 4 can't pay their water bill - should we be surprised when 1 in 3 choose not to subscribe to broadband, even if the ACP makes it essentially free?

Successful broadband adoption programs, like Boston's, surround families with affordable laptops, discounted connections, digital literacy training, and customer support from multiple trusted community organizations - in person.[19]

It's expensive, but it works.

TO COVER ITS COSTS, DETROIT'S GON MUST ATTRACT 2 OUT OF 3 HOUSEHOLDS. ANYTHING LESS, AND TAXPAYERS GET STUCK WITH THE BILL.

Detroit GON plan assumes it will serve 175K of city's 270K households.

That's about the number of households online. If half switch to the GON (very ambitious), Detroit needs another 88K households – currently unconnected – to break even.

In other words, to stay afloat, the GON must eliminate Detroit's adoption gap without spending money on training and support. If it signs up fewer, it must cover the difference by raising prices or cutting spending somewhere else.[20]

SPENDING MONEY ON FIBER – INSTEAD OF TRAINING AND SUPPORT – COULD (1) LEAVE HUNDREDS OF THOUSANDS OF DETROITERS UNSERVED; AND, (2) STICK TAXPAYERS WITH TENS OF MILLIONS IN COST THE GON CAN'T COVER.

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