City of Coachella Broadband Master Plan
City Council Presentation – September 25, 2024

About Us

FOUNDED IN 1913, HR Green provides solutions that build communities and improve lives.

FOR MORE THAN A CENTURY, HR Green has provided engineering, technical, and management solutions in the following
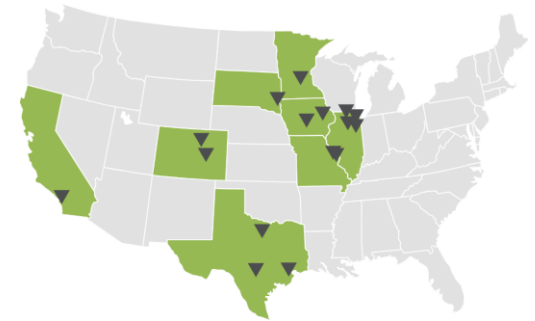
| TRANSPORTATION | WATER | GOVERNMENTAL SERVICES | LAND DEVELOPMENT | ENVIRONMENTAL | CONSTRUCTION |

In every market and in every geography, **our mission is the same**:

Building Communities.
Improving Lives.

This means that every person at HR Green is an active contributor in **building the communities and improving the lives** of people where we are honored to work.

What is – "Broadband" Anyway?

Original FCC Broadband Definition

25 Megabits per second <u>down</u>load speed
3   Megabits per second (Mbps) <u>up</u>load speed

Think of a 3 Megabyte attachment
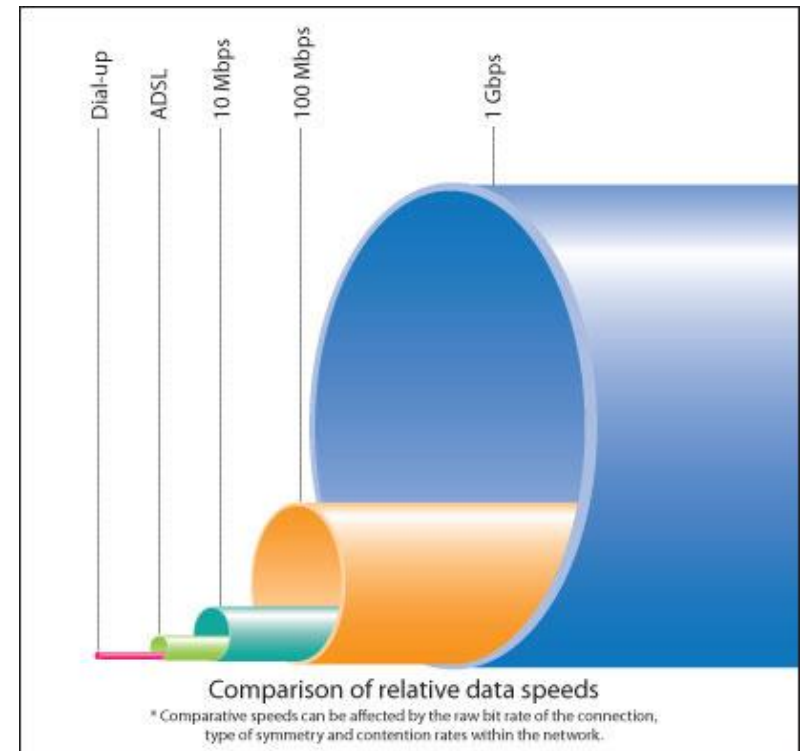(song, doc, photo) ~ 25 megabits

If you could download a <u>3 MB file in 1.0 second</u>
You had "broadband"

New FCC Broadband Definitions

Unserved = less than 25 Mbps download speed & less than 3 Mbps upload speed

Underserved = less than 100 Mbps download speed & less than 20 Mbps upload speed

Served = at least 100 Mbps download speed & at least 20 Mbps upload speed

Dial-up · ADSL · 10 Mbps · 100 Mbps · 1 Gbps

Comparison of relative data speeds
* Comparative speeds can be affected by the raw bit rate of the connection,
type of symmetry and contention rates within the network.

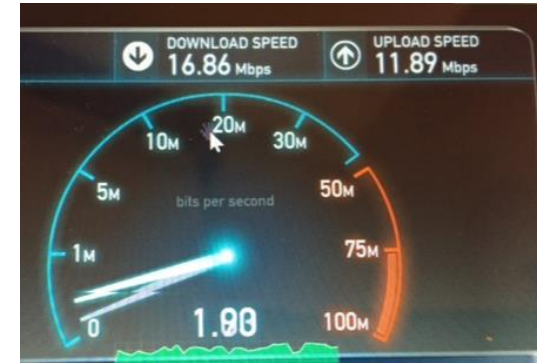# **What REALLY Matters in Broadband?**

Latency (fast response)

Capacity (whole family on at once)

Reliability of connection & experience

Lowest <u>cost</u> per bit

<u>Speed</u> (fast **down**loads and **up**loads)

Everyone doesn't need them <u>all</u>,
Different technologies = different costs, different benefits

How is Broadband Delivered?

Wireless…

⭐ **Satellite**

⭐⭐ Cellular **4G/LTE**

⭐⭐⭐ **5G**

Wireline – aerial <u>or</u> underground

⭐⭐ **DSL** (Telephone-based – copper wires)

⭐⭐⭐ **Coax** Cable

🌟🌟🌟 **Fiber Optic** Cable - *"future-proofed"*

All use fiber / No better technology today

Fiber To The Home (FTTH)

Aerial (overhead) or **conduits** (underground)

Fiber optic cable to every parcel

Requires new installation (~$600-$2,000/home)

Fiber – virtually unlimited:

- ✓ Speed
- ✓ Capacity
- ✓ Zero latency
- ✓ Lowest cost/bit
- ✓ Quality

Review Project Expectations & Goals

- **City of Coachella Broadband Study & Strategy Planning will:**

    - ✓ Inventory and document City telecommunications assets

    - ✓ Include an assessment of current conditions, a strategic plan, and identification of new opportunities for partnerships.

    - ✓ Address the unserved and underserved areas of the City.

    - ✓ Help spur additional business, programs, and economic growth.

    - ✓ Create a defined path forward that will ultimately lead to shovel-ready last-mile projects

    - ✓ Include a broadband infrastructure design based on potential projects that can be used to seek future funding.

    - ✓ Create a community vision; assess communities' existing broadband related resources, gaps, and needs; engage local stakeholders; and identify appropriate technology.

    - ✓ Help in selecting a business model and governance framework.

    - ✓ Develop project plans, such as implementation and financial plans and feasibility analysis related to managing, operating, and maintaining a last-mile infrastructure.

Review project understanding

- **By developing a Broadband Master Plan, the City is:**

  ➢ Taking an important step toward encouraging the development of reliable and cost-effective next generation Broadband Services that have a net positive economic and social impact.

  ➢ Looking to enhance the community's quality of life through expanded innovation opportunities, workforce development training, the narrowing of the digital and/or economic divide, and improved organizational operation efficiencies.

Our Process

- Comprehensive
- Flexible
- Dynamic
- Responsive

Vision

Gather Necessary Data
- City Owned Assets
- Optional: Public Survey
- Provider Reported Data
- Stakeholder Interviews
- Provider Meetings/Data

Analyze the Data
- Gap Analysis

Decide Path

Visioning

HLD of Tech Options

Connect with Providers

Feasibility of Options

Design

Detail Design of Network

Build

Funding

Contracting

Materials

Marketing

Construction Oversight

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Review of Project Schedule

12 - Project Management & Meetings (Including Kickoff)
1 - Kickoff Meeting
2 - First Presentation to Council
3 - Current and Future Needs Assessment
3A - Engagement Plan
3B - Survey
3C - Stakeholder Meetings
3D - Digital Equity
4 - Inventory/Assessment of City Owned Assets
5 - Assessment of Privately Owned Assets
6 - Policy/Permit Process Review
7 - Gap Analysis
8 - Mid-Point Presentation to Council
9 - Feasibility - HLD - and maybe full feasibility
10 - Draft Master Plan
Presentation to Council
11 - Master Plan Refinement and Adoption
OPTIONAL 13 - Partnership Identification and Discussions
OPTIONAL 14 - Governance Options

Next Steps:
1. Launch Survey(s)
2. Asset Inventory
3. Stakeholder Meetings

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Broadband in the City of Coachella

City of Coachella Fabric Data

Legend
Fabric Speed Rank

☐ City of Coachella Boundary

- Served (More than 100 Mbps Download Speed)
- Underserved (Less than 100 Mbps Download Speed)
- Unserved (Less than 25 Mbps Download Speed)

0 0.28 0.55 1.1 Miles

Spatial Reference
Name: NAD 1983
StatePlane Illinois East
FIPS 1201 Feet
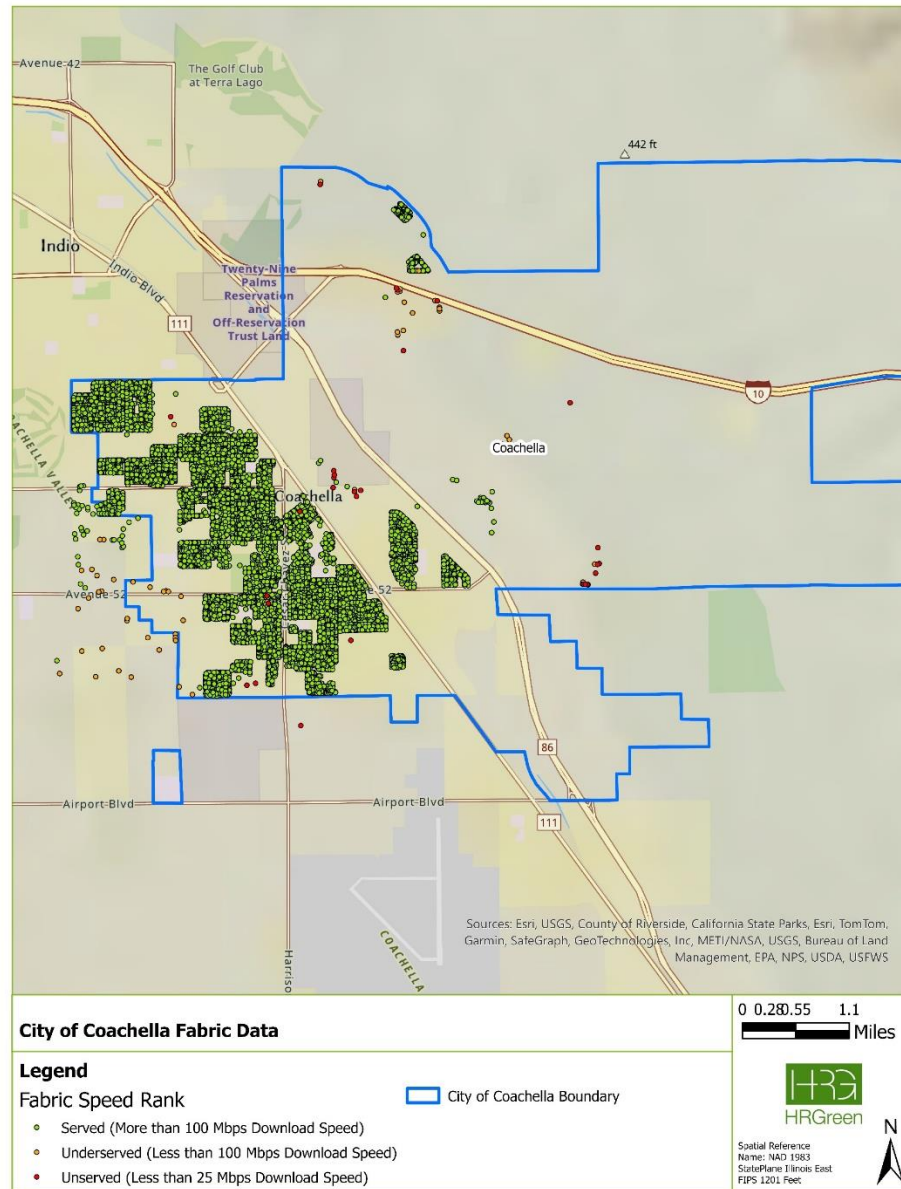
Common Objectives Interaction

A: Align   **C:** Conflict   **NI:** No Impact

	Ubiquity	Choice	Competition	Ownership	Performance	Affordability	Risk Aversion	Cash Flow
Ubiquity		A	A	A	NI	C	C	C
Choice	A		A	A	A	A	C	NI
Competition	A	A		A	A	A	C	NI
Ownership	A	A	A		A	A	A	C
Performance	NI	A	A	A		NI	A	A
Affordability	C	A	A	A	NI		C	C
Risk Aversion	C	C	C	A	A	C		A
Cash Flow	C	NI	NI	C	A	C	A	

Broadband Models

City Main Business Model Options for Broadband Expansion

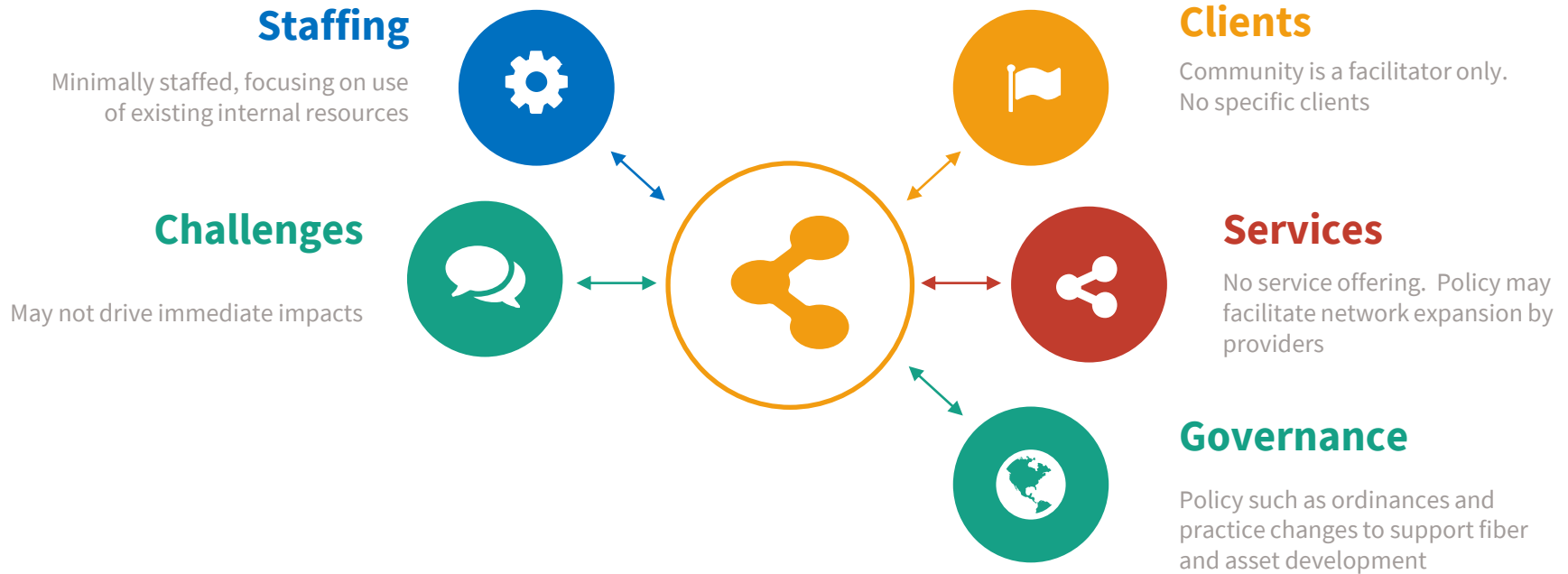|	Own Rights of Way, Utility Infra.	Own Middle Mile	Own Last Mile	Operate Infrastructure	Service Customer	Example City
1 Full Municipal Broadband	Public Entity (City or Utility)	Public Entity (City or Utility)	Public Entity (City or Utility)	Public Entity (City or Utility)	Public Entity (City or Utility)	Chattanooga
2 Publicly-owned, Privately-Serviced	Public Entity (City or Utility)	Public Entity (City or Utility)	Public Entity (City or Utility)	Public Entity / Service Provider	Service Providers (One or Several)	Ontario
3 Hybrid Ownership	Public Entity (City or Utility)	Public Entity (City or Utility)	Service Providers (One or Several)	Service Providers (One or Several)	Service Providers (One or Several)	Lincoln
4 Private Developer Open Access[1]	Public Entity (City or Utility)	Private Developer	Private Developer	Private Developer	Several Service Providers	Fullerton
5 Full Private Broadband	Public Entity (City or Utility)	Service Providers (One or Several)	Service Providers (One or Several)	Service Providers (One or Several)	Service Providers (One or Several)	Palm Springs

Note: 1) Private Developer is defined as private company that builds, owns and operates the network infrastructure and offers open access to it to several retail SPs that provide service on the top

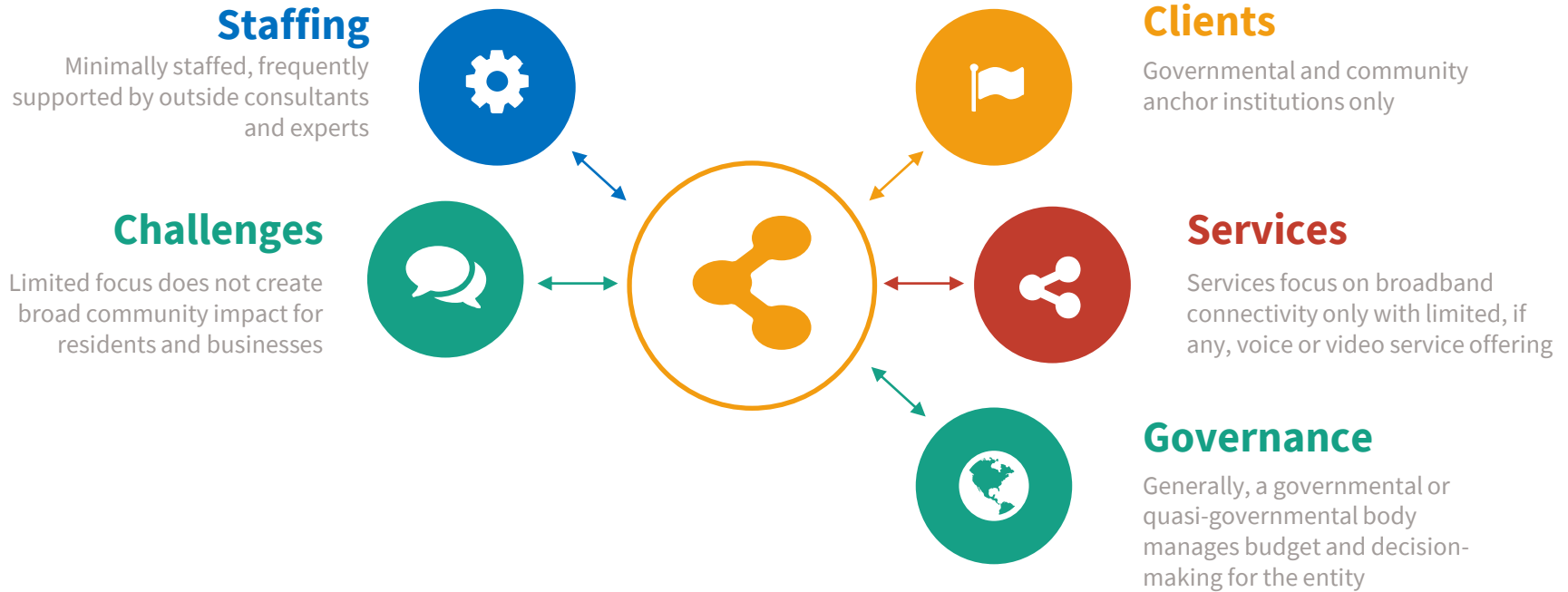Source: "Broadband Models for Unserved and Underserved Communities" - US Ignite Whitepaper

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Model: "Public Policy" Only (4)

Staffing

Minimally staffed, focusing on use of existing internal resources

Challenges

May not drive immediate impacts

Clients

Community is a facilitator only. No specific clients

Services

No service offering. Policy may facilitate network expansion by providers

Governance

Policy such as ordinances and practice changes to support fiber and asset development

Focus is on being a facilitator for the private sector
Consider accelerated review and inspection services
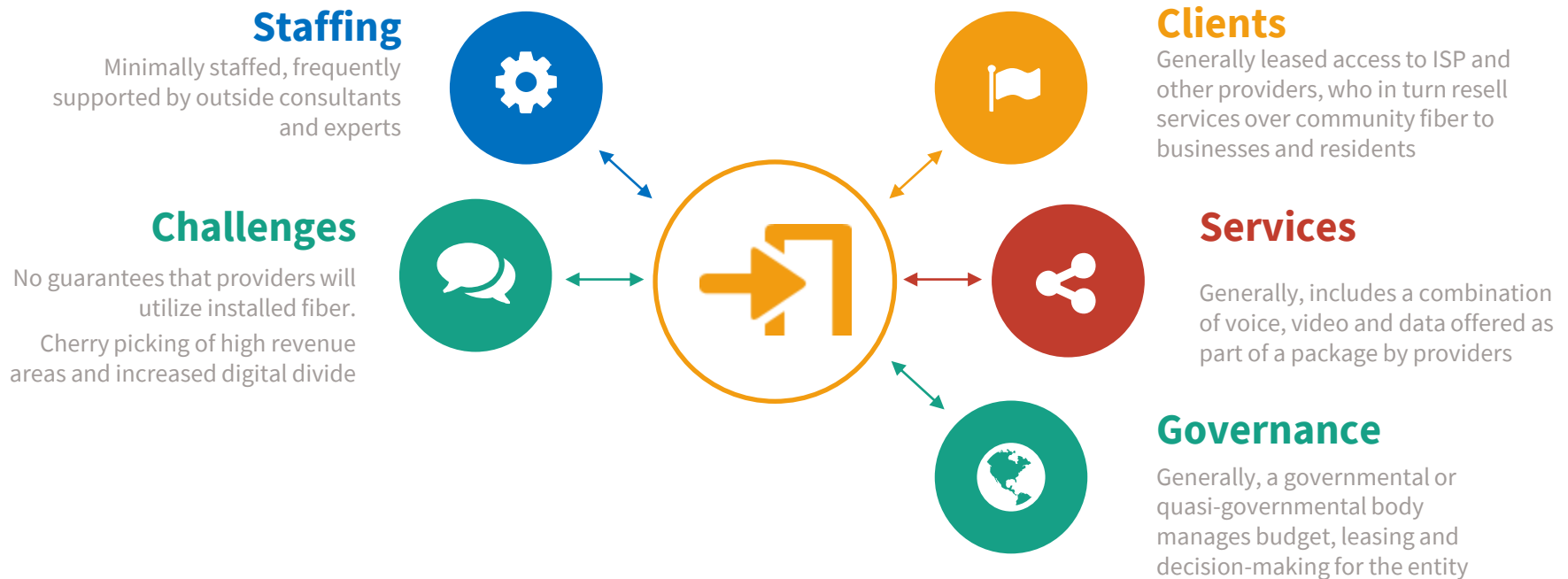*"Encourage the private sector to build assets"*

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Model: Institutional "Middle Mile" (3)

Staffing
Minimally staffed, frequently supported by outside consultants and experts

Challenges
Limited focus does not create broad community impact for residents and businesses

Clients
Governmental and community anchor institutions only

Services
Services focus on broadband connectivity only with limited, if any, voice or video service offering

Governance
Generally, a governmental or quasi-governmental body manages budget and decision-making for the entity

Focus is on community anchor institutions & Services

"Reduce Cost and Improve Public Sector Services"

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Model: "Open Access" (2)

Staffing
Minimally staffed, frequently supported by outside consultants and experts

Challenges
No guarantees that providers will utilize installed fiber.

Cherry picking of high revenue areas and increased digital divide

Clients
Generally leased access to ISP and other providers, who in turn resell services over community fiber to businesses and residents

Services
Generally, includes a combination of voice, video and data offered as part of a package by providers

Governance
Generally, a governmental or quasi-governmental body manages budget, leasing and decision-making for the entity

Focus is on increasing competition and access to numerous broadband providers

"Build It and They (Providers) Will Come"

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Model: Retail Service (1)

Staffing

Fully staffed across marketing, technology, sales, service, support
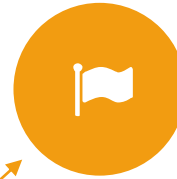
Clients

Consumers and/or business customers

Challenges

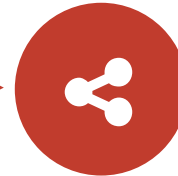Communication entity competes with incumbent providers. Complex challenges running ISP. Digital divide issues

Services

Full-service retail products (Voice, Video and Data) for consumers and businesses

Governance

Governmental department or via corporate/private structure

Focus is community-led delivery of complete services to end consumers and/or businesses

"Build It for Residents & Businesses

Thank You!