Telecom Developments: Rules of Engagement

Regulatory Oversight, Carrier Rights, City Infrastructure, and the SBFN

SBCGOG "SBFN" WORKING GROUP

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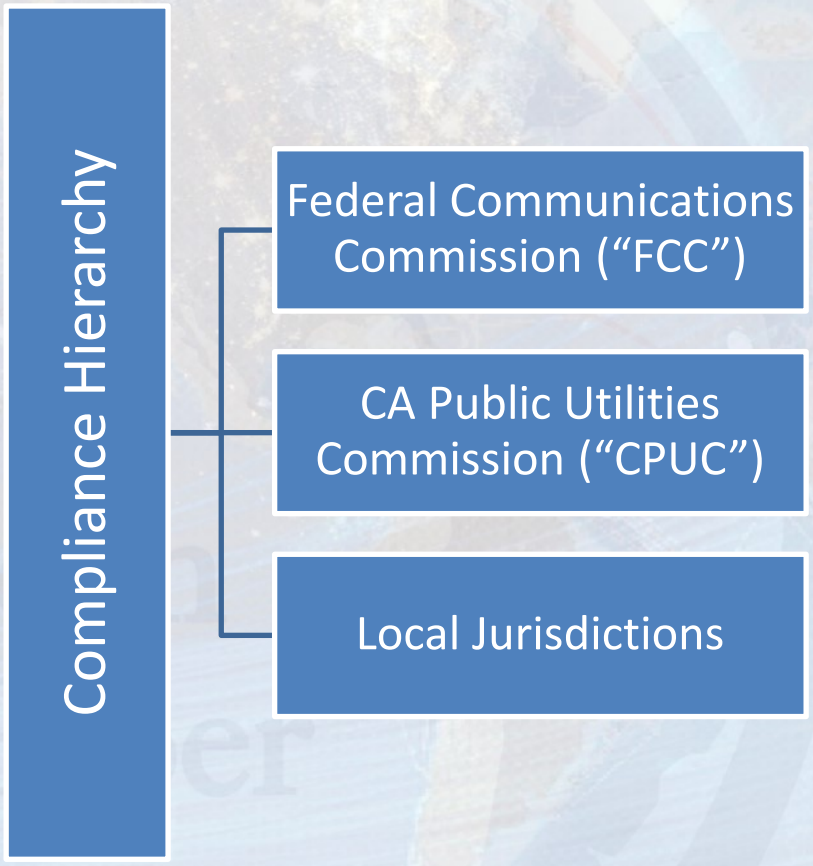
General Regulatory Oversight Entities: *Facilities-Based* Telecom Service Providers



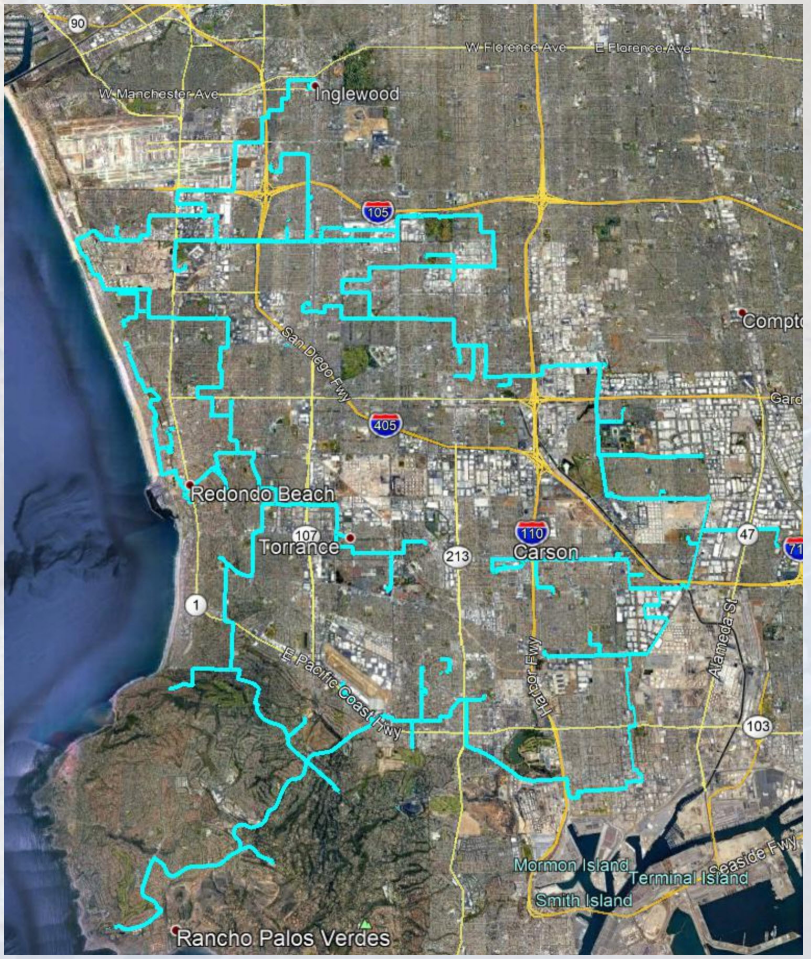
To oversight tentacles of the FCC run wide and deep. For the sake of this discussion we'll focus on carrier activities similar to what is being provided on the SBFN and ancillary activities available to cities looking to provide broadband services of some sort.

How The Hierarchy Works

- ✓ The ***FCC*** Governs the national telecommunications "rules of the game" for the industries impacted in the United States (a carrier's basic "*ante*" to participate in the telecom space)
- ✓ The ***CPUC*** is the regulatory body controlling the management of those activities within the State and ensuring they are consistent with the FCC rules and applied Statewide.
- ✓ ***Local Jurisdictions*** (i.e., Municipal COG Members) control the management of the ROW where such facilities are deployed that must be consistent with the FCC and CPUC (and CEQA) rules (the "where", "when", & "how" via permitting).

Interaction Between Regulatory Bodies/Entities and ADF:

1. **The FCC:** ADF is registered as a common carrier with the FCC (as a CLEC's) with annual reporting and filings required. The status makes us eligible to participate in various FCC programs (i.e., RHC, Connect America, E-Rate, etc.)
2. **The CPUC:** ADF holds a State issued license as "Telecom Utility" (as a CLEC) holding a "Full-Facilities" license with a CPCN issued for such purposes
3. **Local Jurisdictions**: By virtue of our CPCN, ADF has the right to deploy plant in any jurisdiction within CA so long as it maintains its license in good-standing and following CPUC, CEQA, and local permitting requirements.



The “FCC”

The FCC was established from the Communications Act of 1934 as the regulatory oversight body with regulatory responsibilities for communications (radio, television, wire, wireless, satellite) in the United States. The responsibility and scope of oversight was updated many times and more comprehensively by the passage of the Telecommunications Act of 1996*.

This oversight generally applies/pertains to:

Incumbent Local Exchange Carriers (ILEC’s): AT&T, Frontier, CenturyLink (Lumen), etc.
Competitive Local Exchange Carriers (CLEC’s): ADF, Zayo, Crown Castle, Race
Internet Service Providers: Race Communications, Cogent Communications, Zayo, etc.
Cellular Telephone & Satellite Providers: VZW, AT&T, TMO, DISH, HughesNet, ViaSat
Broadcast Television & Cable Companies: Comcast, Disney, Spectrum, Cox,
Other Radiocommunication Providers: IntelSat, ViaSat, StarLink, etc.

***Note: There are lots of “cross-overs” (i.e., AT&T is an ILEC, CLEC, Cellular, Satellite Provider, ISP, etc.*)**

https://www.fcc.gov/general/telecommunications-act-1996#:~:text=The%20Telecommunications%20Act%20of%201996,any%20market%20against%20any%20other.

The "CPUC"

The CPUC manages the "what" and "how" of telecom industry activities (and other industries) in the State of California that are consistent with the FCC's governance that exists by virtue the passage of Telecommunications Act of 1996.

From the CPUC Website: "The CPUC develops and implements policies for the telecommunications industry, including ensuring fair, affordable universal access to necessary services; developing clear rules of the game and regulatory tools to allow flexibility without compromising due process; removing barriers that prevent a fully competitive market; and reducing or eliminating burdensome regulation".

CPUC issues utility licenses in the form of Certificates of Public Convenience ("CPCN"). CPCN's are issued with stated rights that apply to three basic categories of operations:

- **Full-Facilities**: Right to deploy telecom facilities in the ROW statewide.
- **Limited Facilities**: Right to deploy "limited" network-typically from ROW to private property
- **Reseller**: Reselling other carrier network - not constructing network that sits in or touches the ROW

Local Jurisdictions

Cities are able to dictate the where, when, and how of network facilities are deployed locally:

General Activities

1. Piggyback on the rules established by Federal and State statute (FCC & CPUC) to ensure telecom deployments are consistent with State & Federal law.

2. Manage zoning and permitting issues of where and how plant is deployed in their jurisdiction (that are not inconsistent with State & Federal law). Ex) Requiring Encroachment Permits & ensuring proper engineering standards are met (i.e., for trenching, attachments, etc.)

3. Play “traffic cop” to ensure market participants have the necessary rights (as issued by the State or FCC) to do what they are asking to do in a city.*

*Many telecom related legal disputes arise with municipalities due to either carrier or city misinterpretation of what rights exist or by over-reach of ordinance applications of wireless siting issues.

Infrastructure Deployments: Basic Deployment Costs By Type

- ***Aerial*** Fiber Optic Cable Installations on Utility or Telephone Poles)
- ***Leased Duct*** Installations (carriers leasing space inside ILEC duct/manhole systems)
- ***Trenching & Boring*** Installations new “digs” in the ROW where either new conduit and cables are installed or “direct buried” cables (usually armored in the metro).

Infrastructure Deployments: “Aerial”

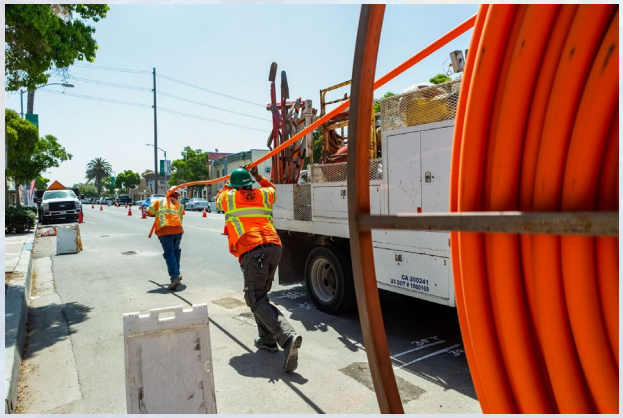
Aerial Deployments

- Governed by the Telecom Act of ‘96, aerial cable deployments are most commonly deployed on existing power utility poles or telephone poles
- If on Power Poles: Carriers must engineer their designs that meet wind and weight loading criteria and submit those requests to the primary pole owner (i.e., SCE, LA-DWP, Riverside Public Utility, etc.)
- If on Telephone Poles: Carriers must engineer their designs that meet wind and weight loading criteria and submit those requests to the primary pole owner (typically AT&T or Frontier locally)

Infrastructure Deployments: “Leased Duct”

ILEC Leased Duct or “Manhole Systems”

- Governed by the Telecom Act of ‘96, ILEC networks are made available to CLEC’s for use (via lease mechanisms).
- Access requires formal route definition (what street & MH#’s to be used) to be submitted to the LEC “Structure Access” group that manages the public ROW networks (which were originally created using taxpayer money).
- The LEC may deny access where space limitations in the conduits exist (or impede on “future use” allocations).
- Other LEC “denial rights” exist (i.e., MH coring, conduits touching pedestals, etc.)



Infrastructure Deployments: “Trenching”

Fiber Optic Cable Trenching Types:

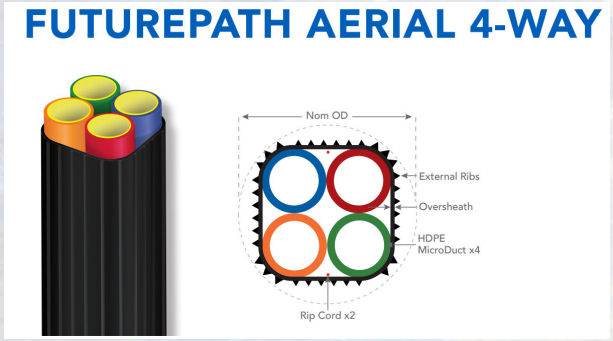
Traditional trenches: often cut 12”-18” wide and 30”-48” deep. The trenches are considered more “hardened” or more secure from damage due to depth and cover type (i.e., natural fill, slurry, etc.). Multiple conduits can be installed.

Macro Trenches: Typically 4”-6” in width and 18-30” deep, backfill as above just less of it. One or more conduits installed depending on size used.

Micro Trenches: Typically 1”-2” wide 12”-24” deep. If jurisdictionally approved, great options for areas with constrained pole & MH system access. Much lower cost than trad’l trench.

Directional Boring: Depth varies (can go deep) - Restoration at bore pits. River crossings, highway/street crossings,

https://www.thefoa.org/tech/ref/OSP/install.html



CLEC Licenses & Infrastructure Use Agreements

ILEC Agreements Needed:

- Pole Attachment and Conduit Use Agreements
- Managed by "Structure Access" groups within AT&T and Frontier.
- Require CPUC issued CPCN
- Submission Requests typically take 60-120 days to be processed.
- Rates charged are calculated annually, submitted to CPUC for tariff approval.
- Costs calculated by # poles attached or # of feet of conduit or innerduct populated. Cost ranges $8-12/pole/yr.
- Conduit occupancy costs vary by LEC, $0.31-0.42/ft/yr. locally

Utility Agreements Needed

- Pole Attachment & Conduit Use Agreements (poles apps mostly)
- Managed by distribution or transmission (or both) asset management groups (SCE & DWP)
- Require CPUC issued CPCN
- Pole attachment approvals can take 120-180 days for tenants and 45-90 days for JPA owners.
- Rates charged are calculated annually by tariff yet vary by utility with common costs ranges of $12-$20/pole/yr. utilities).
- Conduits more challenging and costly to use.

COLLIDING NEEDS OF BROADBAND DEPLOYMENTS:

ISSUES, POLICIES, AND COSTS IMPACTING CITIES-CARRIERS-CUSTOMERS

- ✓ **Infrastructure Availability**: Pole attachment and loading constraints, Constrained ILEC Ducts
- ✓ **Wireless Network Demand**: Small-Cell/DAS/5G/IoT: Demand for Infrastructure is Escalating – Street Light, Sidewalk Issues in CBD's, ROW Management Issues (too much street furniture)
- ✓ **Policies & Ordinances**: One-Touch/One Trench, Moratoriums/Restoration Req'ts., Attachment Fee Limitations, Undergrounding (Rule 20)
- ✓ **City Permits Costs:** Costs and timeframes can impact downstream broadband costs (note backlash & backfiring of LA SDRF Fees)
- ✓ **Allowable Engineering Standards**: Macro/Micro-trenching growing standard approvals yet not universally accepted.

SBCCOG Member-City Participation in Providing Broadband Solutions

As public agencies, municipalities have limited or no regulatory oversight by the CPUC or FCC limiting their participation in delivering broadband services (voice & lifeline excluded).

Cities are participating in growing numbers in the space due to many infrastructure issues outlined today (3rd party constraints, costs, timing) and by virtue of having their own conduits, cables, vertical furniture.

COG Members can leverage the SBFN to be a launch point using internal city networks to extend broadband farther into their communities.

Members can utilize varying technology delivery mechanisms that fit various needs (Fiber, Wi-Fi, Microwave (P2P, P2MultiP, Blanket Coverage)