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Comments of the Resilient Communities program in the Matter of Narrowing the Digital Divide Through Installation of Broadband Infrastructure in HUD-Funded New Construction and Substantial Rehabilitation of Multifamily Rental Housing

HUD's rulemaking requiring installation of broadband infrastructure in individual housing units at the time of new construction or substantial rehabilitation of multifamily rental housing will greatly benefit families, decrease the costs of broadband infrastructure for consumers, and help decrease digital inequities. The proposed rules are important, but should be strengthened to require that any new infrastructure be designed for open access in order to protect residents' and housing authorities' ability to choose among providers and make improvements over time.

Shared open-access conduit, fiber lines, and other hardware and equipment enable peering and sharing of network resources. For bolstering competition among broadband providers and enabling peering of different network types, we recommend that HUD's guidelines require open access and interoperability for any new infrastructure.

The following guidelines ensure that communications infrastructure is: open to multiple vendors, enabling consumer choice; useable for innovative community technology amenities that provide opportunity and access to digital resources; and adaptable for changes in technology, bringing down the cost of future retrofitting. Communications infrastructure should be adaptable as technologies and data needs change. By contrast, with standard telecommunications installation models, future upgrades to fiber will require ripping out existing cables and completely rewiring the buildings.

Making these guidelines standard practice can help bridge digital inequities among public and affordable housing developments. The long-term savings and the inherent opportunities make such a capital investment a very cost-effective way to create a major improvement.

In new construction, open access infrastructure should be installed between the building demarcation room, and individual units, apartments, or floors. This should be extended to multi-dwelling units (MDUs), so sharing of communications resources can occur on a larger scale. This would allow a number of residents in a building or MDU to benefit from economies of scale and obtain broadband resources from a variety of vendors. Additionally:

- Individual units should be wired for high-speed data access at communications outlets.
- Site-wide expansion and flexibility can be ensured by using conduit instead of simple buried wiring between buildings for distribution of service provider cabling.

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- Conduit or raceway should run from each building's communications room to each unit's central phone, TV and data wiring panel.
- Fiber optics and Category 6 (CAT6) cable should be used instead of Category 5 Enhanced (CAT5e) normally used in standard telecommunications installations.

These specifications assume a multi-dwelling unit (MDU). For each unit, we recommend at a minimum using Grade 1 residential telecommunications cabling to multiple outlets. This includes one two-pair telephone cable, one Category 6 UTP cable, and one 75-ohm Series 6 coaxial cable. Each outlet should have the corresponding RJ11, CAT6 RJ45 and F-connector for each cable. Paired fiber-optic cabling also recommended.

Each living area should be cabled with at least one of the above telecommunications outlets. The cabling from each outlet should run to an in-unit Distribution Device, with a co-located Auxiliary Disconnect Outlet (ADO) for each service. Trunk cables should run from the ADO in each unit to a Demarcation Point or Service Entrance in each MDU. This can be an outdoor cabinet or indoor telecommunications closet. The ADO cables should be run through appropriately sized conduit or raceway with ample room for future expansion.

For future outdoor wireless coverage, there should be additional enclosures installed on the outside corners of the building, or in the case of a larger development, each MDU. If they are approximately 15 to 20 feet above ground, this facilitates complete area outdoor wireless coverage with the addition of access point hardware. Outdoor rated Category 6 cable should be run to the MDU's telecommunications closet and terminated in a patch panel.

Additionally, designing for pathways between buildings can facilitate unit-to-unit networking and future expansion or applications. If we treat this as a campus-style installation, a single Entrance Facility (EF) and Common Equipment Room (CER) in a main or central building can be utilized. In-ground conduit should be utilized to create pathways between the EF and each MDU's telecommunications room or service entrance. These should be sized for future expansion, and include the facility for multiple innerducts or micro-ducts for Category 6 and optical fiber between MDU's.

Access or Service providers should use the Entrance Facility to enter the campus, and distribute services to each building's service entrance.

Submitted by:
Greta Byrum, Director - Resilient Communities
Andy Gunn, Program Fellow - Resilient Communities

July 18, 2016