

June 16, 2021

Ms. Marlene Dortch  
Secretary  
Federal Communications Commission  
45 L Street NE  
Washington, DC 20554

Re: *Rural Digital Opportunity Fund (Auction 904)*, AU Docket No. 20-34; Rural Digital Opportunity Fund, WC Docket No. 19-126; *Long-Form Application of Space Exploration Technologies Corp. (d/b/a Starlink Services, LLC)*, Auction 904 File Number 0009149922, *et al.*; *Petition of Starlink Services, LLC for Designation as an Eligible Telecommunications Carrier*, WC Docket No. 09-197

Dear Ms. Dortch:

In its 2020 Rural Digital Opportunity Fund (“RDOF”) Order, the Commission directed Phase I funds exclusively to areas “wholly unserved” by broadband at speeds of 25/3 Mbps.<sup>1</sup> According to a recent report from the Competitive Carriers Association (“CCA”), however, thousands of census blocks that already have high speed broadband will receive hundreds of millions of dollars in broadband deployment subsidies.<sup>2</sup> CCA called on other parties to explore the data to identify RDOF subsidies that will not serve their intended purpose of closing the digital divide.

The Computer and Communications Industry Association (“CCIA”) has long advocated for increased funding to close the digital divide and provide broadband access to all Americans. CCIA’s interest in expanding broadband access aligns with the goals of the RDOF program, so CCA’s report that RDOF funds may be allocated for ineligible locations is a cause for concern. Therefore, CCIA has used the methodology from CCA’s report to further explore this data. For this exercise CCIA examined the locations from one of the largest recipients of RDOF funds, Space Exploration Technologies Corp. (“SpaceX”).<sup>3</sup> CCIA’s analysis found a number of locations for which SpaceX won RDOF funding, which may not be eligible for the program. Examples include the following:

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<sup>1</sup> Rural Digital Opportunity Fund, Connect America Fund, Report and Order, 35 FCC Rcd 686, ¶¶ 9-10 (2020) (“RDOF Order”).

<sup>2</sup> See generally Competitive Carriers Association, *Missed Opportunity: How the Rural Digital Opportunity Fund Wastefully Subsidizes the Connected* (May 2021) (“Missed Opportunity”), attachment to Letter from Alexi Maltas, SVP & General Counsel and Alexandra Mays, Policy Counsel, Competitive Carriers Association to Acting Chairwoman Jessica Rosenworcel, *et al.* at 1 (May 6, 2021), <https://bit.ly/3wa2MWK>.

<sup>3</sup> SpaceX’s filed its long-form applications under the name “Starlink Services, LLC.”

- Unoccupied cloverleaf interchanges in metropolitan super-highways;
- A vacant historic battlefield near the FCC’s office in Gettysburg, Pennsylvania; and
- Large swaths of major American cities, such as downtown Chicago.

The publicly available data either show that these areas include no actual locations to be served because no one lives or works there, or show areas with existing broadband Internet performance in excess of 25/3 Mbps. CCIA is concerned that these examples demonstrate flaws in the RDOF Phase I process that may result in diverting funds from communities that truly need broadband. Based on these examples, CCIA urges the Commission to carefully examine the results of Phase I of the RDOF reverse auctions and the underlying data to ensure that the Commission is achieving the goal of the program to provide broadband to unserved communities.

### **I. CCA’s Methodology Allows the Public to Identify Ineligible Areas Where RDOF Funding has been Awarded**

CCA’s report compared publicly available speed test data against the FCC’s broadband map to identify locations that already offer the minimum broadband speed and therefore are ineligible for RDOF subsidies. CCA then compared these results against the 57,172 RDOF items that received funding.<sup>4</sup> Using this method, CCA discovered that nearly 361,000 RDOF locations, covering nearly 516,000 people, already have existing fixed or mobile broadband service meeting or exceeding 25/3 Mbps.<sup>5</sup> CCA then validated these findings by studying urbanization, wealth, and population density statistics. This demographic analysis corroborated the speed test results and showed that CCA’s speed test findings were directionally accurate.

The data inputs underlying CCA’s study can readily identify locations that already have 25/3 Mbps service. CCA relied on current broadband data from Ookla’s Speedtest platform,<sup>6</sup> which collects tens of millions of network performance measurements from sites around the world each day. The combination of FCC Form 477 data and Ookla Speedtest data represents “the most reliable and comprehensive available data that is currently available on the extent of mobile coverage.”<sup>7</sup> Ookla sorts its Speedtest data into geographic “tiles.” In the contiguous United States, each tile measures approximately 250,000 square meters, or slightly less than one tenth of a square mile. These tiles are generally much smaller and more precise than the FCC’s

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<sup>4</sup> There were 57,172 RDOF items that received funding which included more than 775,000 full or partial census blocks and 5.2 million locations.

<sup>5</sup> *Missed Opportunity* at 13.

<sup>6</sup> Speedtest by Ookla Global Fixed and Mobile Network Performance Map Tiles, <https://bit.ly/2S5Yf9a> (last visited May 26, 2021).

<sup>7</sup> *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2020 Broadband Deployment Report, 35 FCC Rcd 8986, ¶ 33 (2020) (“2020 Broadband Deployment Report”).

RDOF items, which vary in size, but average around 23.5 million square meters, or nine square miles.<sup>8</sup>

CCA's methodology had two core steps. First, CCA only considered those Ookla tiles that met the RDOF Phase I minimum broadband downlink/uplink performance criteria of greater than 25/3 Mbps. Next, CCA overlaid the remaining Ookla tiles on top of the RDOF blocks to determine the percentage of geographic overlap. These steps served to identify the census blocks that should have been ineligible for RDOF Phase I support but received support nevertheless.

CCA took reasonable steps to handle the disparity between the size of larger RDOF items and the smaller Ookla tiles. Where an Ookla tile did not cover an entire RDOF block, CCA assumed an even distribution of RDOF locations in the RDOF block. Under CCA's analysis, for example, a 75% geographic overlap of an RDOF block would include a 75% overlap of RDOF locations within that block. Using this method, CCA estimated the number of locations within each RDOF block that Ookla tiles cover.

CCA's determination of whether blocks have adequate broadband was, by necessity, uncertain because the Commission has not disclosed the number of RDOF locations in each census block within an RDOF item. In arriving at its conclusions, CCA determined based on the best available evidence that each block in an RDOF item included a roughly equal number of locations. For example, an RDOF item with three blocks and seven locations is most likely to have two blocks with two locations and one block with three locations. This distribution is reasonable because it follows the methodology the Census Bureau uses to define blocks. For example, blocks in undeveloped areas are generally larger than blocks in developed areas because there are fewer streets or structures to divide them; therefore, larger blocks do not typically represent a larger number of residences or businesses. CCA discussed these and other aspects of its methodology in detail in its submission.<sup>9</sup>

However, it is worth noting that when just one 25/3 Mbps Ookla tile is completely within a block, then that block must support at least 25/3 Mbps broadband since the Ookla test must have taken place within the block. Therefore the percentage of a block's area that overlaps Ookla tiles is not the only indication that a block supports 25/3 Mbps broadband, because large blocks with only minimal overlap with Ookla tiles can also be implicated.

## **II. SpaceX Will Receive RDOF Subsidies for Blocks that Already Receive Broadband Service or that Have No Homes or Businesses in Them**

To ensure the limited available RDOF funds are effectively used for the program's purpose of bringing broadband to unserved areas, the Commission should be careful not to use funds for areas that do not have an actual need. An examination of the locations for which

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<sup>8</sup> Within each RDOF item are RDOF blocks, which are census blocks in a census block group eligible to receive RDOF Phase I support. For reference, an RDOF block is, on average, approximately 1/13th to 1/14th the size of an RDOF item.

<sup>9</sup> See *Missed Opportunity* at 8-9.

SpaceX won subsidies shows that the Phase I reverse auctions may have awarded funding for areas that are not eligible. The Commission needs to examine these locations and carefully consider whether the results of Phase I are consistent with RDOF's goals.

SpaceX, for example, won \$88,550,964 in annual funding for bids on 19,234 RDOF items—nearly 30 percent of all the items to which funds were assigned. Those 19,234 RDOF items consist of 113,905 blocks with a total of 642,925 locations. Of those 113,905 blocks, 10,838 blocks are completely covered by one or more Ookla tiles showing average fixed broadband speeds of 25/3 Mbps or more, and 12,278 blocks are completely covered by one or more Ookla tiles showing average fixed or mobile broadband speeds of 25/3 Mbps or more. These blocks represent 37,245 and 44,292 locations, respectively, and \$2,625,371 and \$3,110,708 in annual funding, respectively.

For the reasons discussed in the CCA report, even partial coverage by Ookla tiles may suggest that broadband is available in the block. Therefore, there are another 7,081 blocks that are covered 50% or more by Ookla tiles that show average fixed broadband speeds of 25/3 Mbps or better, and another 8,376 that are covered 50% or more by Ookla tiles showing average fixed or mobile broadband speeds of 25/3 Mbps or better. These additional blocks alone represent 32,791 and 40,166 locations, and \$2,499,157 and \$3,119,988, respectively, in additional funding.

All told, there are 17,919 RDOF blocks for which SpaceX received funding that are 50% to 100% covered by one or more Ookla tiles showing average fixed broadband speeds of 25/3 or more, and 20,654 RDOF blocks that are 50% to 100% covered by one or more Ookla tiles showing average fixed or mobile broadband speeds of 25/3 or more. These blocks represent 70,036 and 84,458 locations, respectively, and annual RDOF funds of \$5,124,528 and \$6,230,697, respectively.

RDOF Phase I census blocks were supposed to be wholly unserved. If any part of a census block received fixed voice where penetration is generally greater than 99 percent and has at least 25/3 Mbps broadband, then the FCC should have excluded the entire block from the auction. Using just this ineligibility requirement, the resulting estimates of ineligible locations come reasonably close to CCA's methodology. For example, looking illustratively at SpaceX, CCIA multiplied the percent of each block that is covered by Ookla tiles, by the number of locations in the block (as determined above) and the amount of funding that the block received. This calculation yields 73,233 locations and \$5,508,698 in annual funding for fixed Ookla tiles and 88,439 locations and \$6,746,513 in annual funding for fixed or mobile Ookla tiles. These numbers are reasonably close to the estimates based on Ookla tile coverage of at least 50%.

Finally, even if the distribution of locations is not as CCA determined in its methodology, very similar results can be obtained by calculating locations at the level of the RDOF item, rather than at the level of the block. In other words, it is possible to multiply the percent of each RDOF *item* that is covered by Ookla tiles by the number of locations in the RDOF item, as well as the amount of funding that the item received. As discussed in the CCA report, this method inherently assumes that locations are distributed evenly within the area of each RDOF item. Again looking illustratively at SpaceX, this method yields a lower bound of 56,790

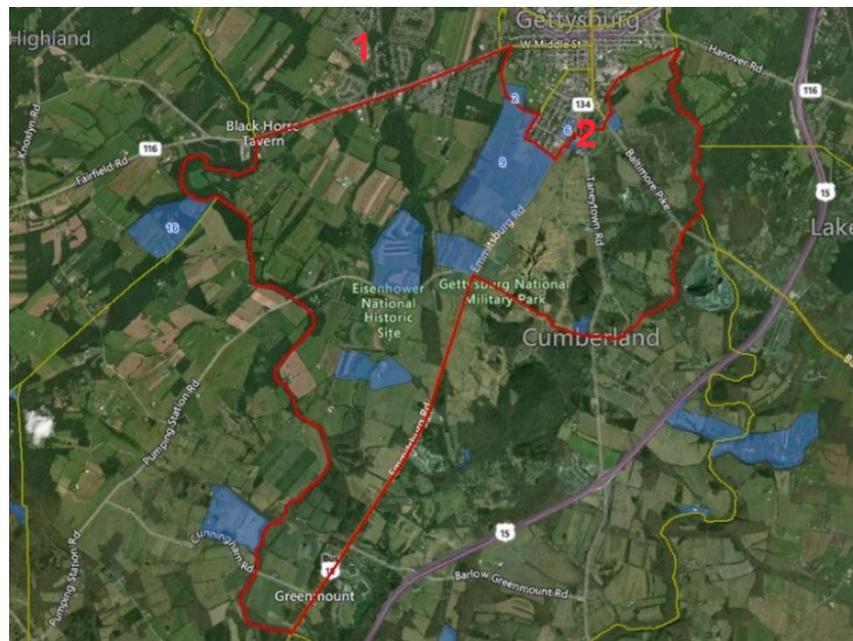
locations and \$3,725,629 in annual funding for fixed Ookla tiles, and 68,924 locations and \$4,565,736 in annual funding for fixed or mobile Ookla tiles, coming to at least \$37,256,290 to \$45,657,360 in total funding over 10 years for seemingly ineligible locations.

### III. Site-Specific Analyses Demonstrate Clearly Ineligible Locations

As discussed below, examination of particular locations confirms that RDOF funding is contemplated for blocks that are ineligible—either because the blocks are already served, or because they simply do not contain locations capable of broadband deployment. The FCC should reexamine questionable areas to verify their eligibility in the program.

#### A. Gettysburg National Military Park

The FCC was supposed to have identified as ineligible areas that do not contain any locations, or by their nature cannot be served. A prime example of such an area is the battlefields and vacant spaces in and around Gettysburg National Military Park. As illustrated in the satellite image below, the FCC has identified several RDOF areas across town from its own office, even though these areas appear to contain no serviceable locations.



Site 1: FCC Gettysburg Office

Site 2: Gettysburg National Military Park

Below is an enlarged image of Gettysburg National Military Park overlaid by the RDOF items. Save for monuments and a few historic farmhouses, Gettysburg's fields remain empty. It is therefore unclear where or how SpaceX, which was the winning bidder, intends to install terminals<sup>10</sup> among these battlefields, or to whom it would offer service for the next ten years.

<sup>10</sup> Sara Morrison, *The FCC's Big Bet on Elon Musk*, VOX (May 17, 2021), <https://bit.ly/3v9yymG>.



Similarly, directly east of the park are additional items (in blue) that appear empty of any residences, businesses, or any other eligible RDOF location. Below is an enlarged image of the area surrounding Gettysburg National Cemetery. The easternmost RDOF item in particular is completely devoid of any structures, save for monuments and memorials.

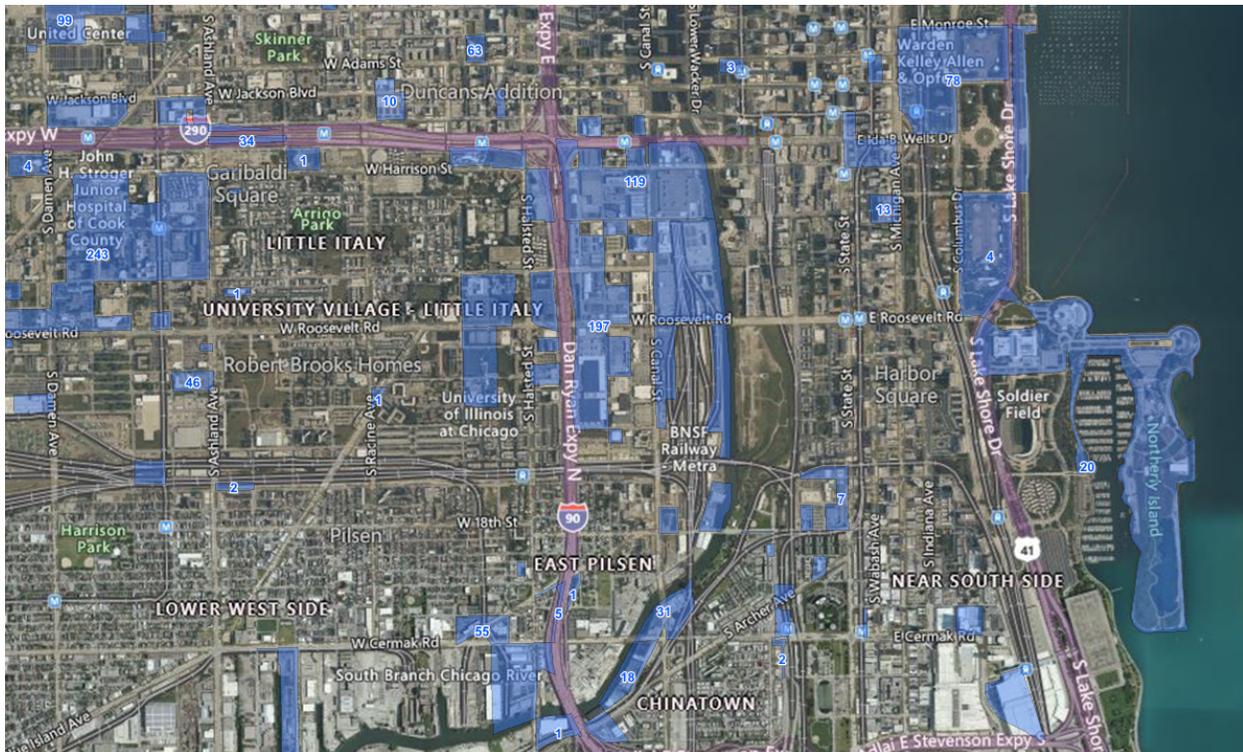


## B. Downtown Chicago

Another conspicuous example of ineligible areas is the potential upcoming buildout in “wholly unserved” downtown Chicago. The city’s Inner Loop is one of the most affluent and densely populated areas in the country, not one of the unserved communities in need of

“opportunities for better education, employment, healthcare, and civic and social engagement.”<sup>11</sup> Based on the U.S. Census Bureau’s American Community Survey, in 2018, the median income for residents of the Loop was \$107,246, which was 166% of the national median income.<sup>12</sup> That same year, the area had a population of nearly 40,000 residents residing on less than 1.6 square miles.<sup>13</sup>

The graphic below, which replicates CCA’s methods, shows SpaceX’s RDOF winnings in downtown Chicago. The areas depicted below contain a large number of RDOF items and an even larger number of RDOF-subsidized locations.



CCIA agrees with CCA’s assessment that these areas are “suspect” at best.<sup>14</sup> Therefore, based on publicly available data, downtown Chicago is well-covered with service, and as such, an inappropriate target for RDOF Phase I funds under the program’s rules.<sup>15</sup>

<sup>11</sup> RDOF Order at ¶ 1.

<sup>12</sup> See *Missed Opportunity* at 20 (citing Chicago Metropolitan Agency of Planning, Community Data Snapshot, The Loop, Chicago Community Area, at 5 (June 2020), <https://bit.ly/3xAjika>).

<sup>13</sup> See *id.*

<sup>14</sup> *Id.* at 21. CCA notes that one such area represented John H. Stroger, Jr. Hospital of Cook County, which is part of the larger Illinois Medical District and is bound by Interstate 290, the United Center, and the Chicago Marriott.

<sup>15</sup> See RDOF Order at ¶¶ 9-10.

### C. Denver Metropolitan Area

Douglas County, Colorado is another area covered by seemingly ineligible RDOF areas. As a part of the Denver-Aurora-Lakewood metropolitan area, and the “centerpiece” of the Denver-Colorado Springs development corridor,<sup>16</sup> Douglas County is one of the most affluent communities in the country, with the highest median household income among all Colorado counties,<sup>17</sup> and the 9th-highest in the nation.<sup>18</sup> As an exurb of several major cities and itself a major tech hub, Douglas County is densely populated and continues to grow. In contrast to the continental United States’ average population density of 90 residents per square mile,<sup>19</sup> Douglas County averages over 340 residents per square mile.<sup>20</sup> As CCA noted in its letter, high median income and population density closely correlate with broadband availability.<sup>21</sup>

Several national and international firms have a large footprint in Douglas County, including Jacobs Engineering, DISH, TTEC, Catholic Health Initiatives, and Toastmasters International. Below is a satellite map of the commercial park where these firms are located, with the RDOF items overlaid in blue. It is highly unlikely that these companies are unserved while other neighboring tech firms immediately adjacent to the RDOF area are served, including Starz Entertainment, Cognizant Technology Solutions, Kiewit Corporation, and the Sierra Nevada Corporation.

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<sup>16</sup> Douglas County, Colorado, *About Us – Our County, Your Home*, <https://bit.ly/3wgDtTj>.

<sup>17</sup> Douglas County Department of Community Development, Douglas County Demographic Summary: Updated April 2021, <https://bit.ly/3feKCMS>.

<sup>18</sup> See *id.*

<sup>19</sup> U.S. Census Bureau, National Population Totals and Components of Change: 2010-2019, <https://bit.ly/3e2jgdj> (last updated April 20, 2021).

<sup>20</sup> U.S. Census Bureau, QuickFacts: Douglas County, Colorado, <https://bit.ly/2TbmQdm>.

<sup>21</sup> See *Missed Opportunity* at 15.



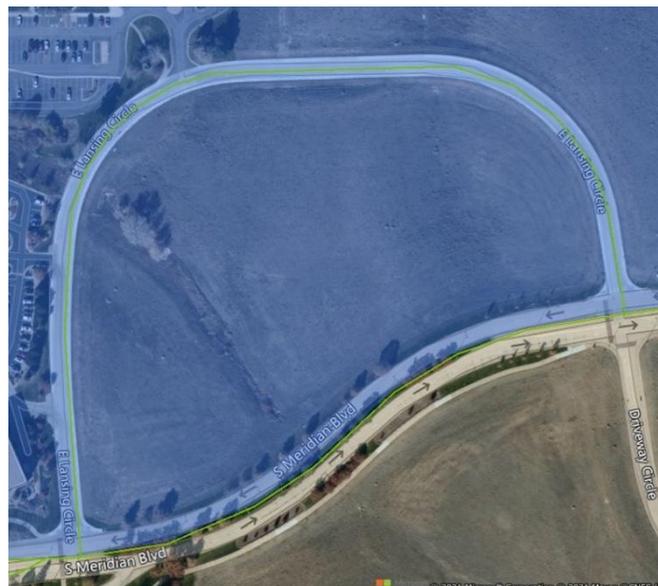
- Site 1:* Starz Entertainment LLC
- Site 2:* Toastmasters International
- Site 3:* Jacobs Engineering
- Site 4:* Catholic Health Initiatives
- Site 5:* TTEC
- Site 6:* DISH
- Site 7:* Sierra Nevada Corporation
- Site 8:* Kiewit Engineering
- Site 9:* Cognizant Technology Solutions

Further, highway E-470, which makes up the RDOF areas’ northern boundaries, has been completely connected by fiber for at least a decade, as evidenced by the local highway authority’s recent solicitation for maintenance on the existing fiber infrastructure.<sup>22</sup> Despite this, certain sections of the highway are identified as RDOF areas. The image below provides a closer look at the interchange in the northwest corner of the business park, where an RDOF area inexplicably lies in the center of an enormous interchange. This location is seemingly ineligible for RDOF funds for two reasons. Besides the fact that the highway is completely wired with high speed fiber, it is unclear what “location” this RDOF area could possibly serve. The center of a super highway would be a questionable location for a home or office building.

<sup>22</sup> E-470 Public Highway Authority Bid Opportunities, BIDNET DIRECT, <https://bit.ly/2QvRFZa> (last visited May 26, 2021). Pursuant to the Permit Manual for the highway’s utilities and surface improvements, contractors agree that damage to the existing fiber optic line would result in substantial losses, including to the highway’s toll management system and other nearby points of connection. See E-470 Public Highway Authority, Permit Manual, <https://bit.ly/3tXonAh>.

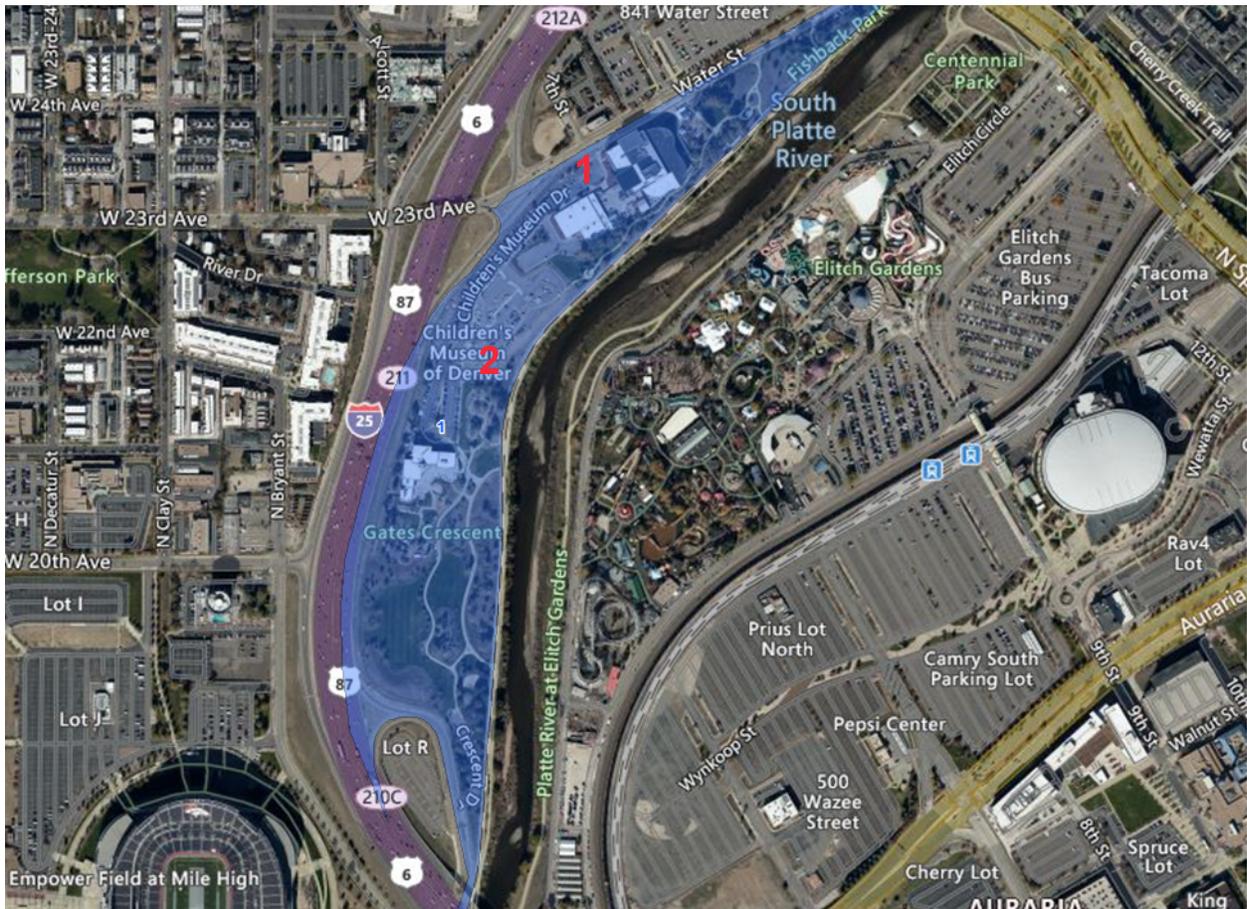


Staying in the same RDOF item, below is a satellite image of the empty space next to the Catholic Health Initiatives headquarters. A scan of the area presents no homes or businesses. Therefore, it appears this land should not have been identified as an RDOF “location” and should be ineligible for funds.



Downtown Denver presents similar issues. Nestled between (a) the Denver Broncos’ homefield at Mile High Stadium, (b) Ball Arena (home of the Denver Nuggets, Colorado Avalanche, and Colorado Mammoth), and (c) a 65-acre downtown amusement park, RDOF identifies the Children’s Museum of Denver and the Downtown Aquarium as “wholly unserved.” Despite the RDOF areas overlaid in the satellite image below, these modern public establishments are already well-connected with high speed Internet. Were these institutions to truly still be in need of reliable Internet, it would be particularly worrisome that they are going

without basic Internet while the tailgaters directly south in the “Lot R” carveout are fully served for game day.



*Site 1: Downtown Aquarium*

*Site 2: Children’s Museum of Denver at Marsico Campus*

Directly north of Denver’s Central Business District and across the street from the Byron Rogers Federal Building and the Alfred A. Arraj Federal District Courthouse for the District of Colorado, is Denver’s main post office, which RDOF identifies as a “wholly unserved” area. Despite its size, its multiple digital self-service kiosks, and its proximity to one of the largest federal buildings in the country, RDOF subsidies have been awarded to serve this US Postal Service location.



#### IV. The Commission Should Not Fund Ineligible Areas

To fulfill the agency’s obligation to serve as “good stewards” of RDOF’s \$20 billion in subsidies, the FCC must ensure it is providing subsidies only to locations that actually need them.<sup>23</sup> The examples provided here suggest the Commission needs to reevaluate the data and procedures it used to award subsidies in Phase I.

The purpose of RDOF was to provide financial support only to those areas that had “locations” where homes and businesses could receive fixed broadband service and where those locations were “wholly unserved” by 25/3 Mbps broadband.<sup>24</sup> The Commission said its “overarching goal” was to ensure “that finite universal service support is awarded in an efficient and cost-effective manner and does not go toward overbuilding areas that already have service.”<sup>25</sup> The FCC should review its RDOF maps and reconsider areas that are not, in fact, “wholly unserved” by fixed 25/3 Mbps broadband.

As CCA explained, moreover, the Commission has ample authority to fix its rules to prevent waste, fraud, and abuse. As a general principle of administrative law, “unless the statute itself or surrounding circumstances indicate that such conveyances are intended to be irrevocable, the government does not forfeit its right to withdraw those benefits or qualify them

<sup>23</sup> RDOF Order at 787 (Statement of Commissioner Geoffrey Starks, Approving in Part, Dissenting in Part).

<sup>24</sup> *Id.* at ¶¶ 8-9.

<sup>25</sup> *Id.* at ¶ 13.

as it chooses.”<sup>26</sup> And where the letter of the FCC’s rule is inconsistent with its spirit, administrative agencies can and should follow the intent of the program rather than wooden adherence to an edict that carries absurd results.<sup>27</sup>

Given the examples cited above, the Commission should revisit its RDOF maps, procedures, and Phase I results to ensure that areas that are ineligible to receive funding under the RDOF program are not receiving subsidies.

## **V. Conclusion**

For these reasons, CCIA urges the Commission to review the results of RDOF Phase I and ensure that only locations that are eligible will receive subsidies. The purpose of the RDOF program to help close the digital divide is too important to risk using funds for areas that are not truly unserved.

Respectfully submitted,

/s/ Vann Bentley

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<sup>26</sup> *Members of the Peanut Quota Holders Assoc. v. United States*, 421 F.3d 1323, 1335 (Fed. Cir. 2005).

<sup>27</sup> See Kevin M. Stack, *Interpreting Regulations*, 111 MICH. L. REV. 355, 394 (2012).