

LAWLER, METZGER, KEENEY & LOGAN, LLC

1717 K STREET, NW  
SUITE 1075  
WASHINGTON, D C 20006

REGINA M KEENEY  
gkeeney@lawlermetzger.com

PHONE (202) 777-7700  
FACSIMILE (202) 777-7763

**REDACTED FOR PUBLIC INSPECTION**

September 5, 2018

*Via Electronic Filing*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, D.C. 20554

Re: Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer  
Control of Licenses and Authorizations, WT Docket No. 18-197

Dear Ms. Dortch:

Sprint Corporation (“Sprint”) hereby responds to the Wireless Telecommunications Bureau’s General Information and Document Request to Sprint in connection with the Federal Communication Commission’s (“Commission’s”) review of the proposed merger of T-Mobile US, Inc. and Sprint.<sup>1</sup> Specifically, pursuant to the Protective Order in this proceeding<sup>2</sup> and the instructions set forth in the Information Request,<sup>3</sup> enclosed is a redacted copy of Sprint’s response to the Information Request.

---

<sup>1</sup> Letter from Donald K. Stockdale, Jr., Chief, Wireless Telecommunications Bureau, Federal Communications Commission, to Vonya B. McCann, Sprint Corporation, WT Docket No. 18-197 (Aug. 15, 2018), and General Information and Document Request for Sprint, WT Docket No. 18-197 (Aug. 15, 2018) (collectively, “Information Request”).

<sup>2</sup> *Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorization*, Protective Order, DA 18-624 (rel. Jun. 15, 2018) (“Protective Order”).

<sup>3</sup> Information Request at 2.

Pursuant to instructions from Commission staff, copies of the unredacted version of the filing, including accompanying hard drives, are being submitted to the Secretary's Office and Commission staff via hand delivery. In addition, one hard drive is being submitted to the Commission's vendor.

- (1) The hard drive labeled "A" is marked as "HIGHLY CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT DOCKET NO. 18-197 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION." Nonetheless, documents that are widely available but proprietary (*e.g.*, analyst reports) are designated as "Confidential," and no designation of confidentiality is made for documents that have previously been made public. All remaining documents on that hard drive are designated as "Highly Confidential."
- (2) The hard drive labeled "B" is marked as "CONFIDENTIAL AND HIGHLY CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT DOCKET NO. 18-197 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION."<sup>4</sup> This hard drive contains primarily the exhibits associated with the Information Request, which are labeled "Confidential" or "Highly Confidential" as appropriate.

Should you have any questions, please contact the undersigned.

Sincerely,

/s/ Regina M. Keeney  
Regina M. Keeney

Enclosures

cc: David Lawrence  
Kathy Harris  
Linda Ray  
Kate Matraves  
Jim Bird  
David Krech

---

<sup>4</sup> As provided in paragraph 18 of the Protective Order, Sprint does not waive any privilege with respect to the inadvertent submission of any privileged information. Protective Order ¶ 18.

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Applications of T-Mobile US, Inc.	)	
and Sprint Corporation	)	WT Docket No. 18-197
	)	
Consolidated Applications for Consent To	)	
Transfer Control of Licenses and Authorizations	)	

**RESPONSE OF SPRINT CORPORATION  
TO GENERAL INFORMATION AND DOCUMENT REQUEST**

Sprint Corporation (“Sprint”) hereby submits its response to the Federal Communications Commission’s (“FCC” or “Commission”) request for information dated August 15, 2018 (“Sprint Information Request”).<sup>1</sup> Sprint’s narrative responses are presented below. For ease of reference, each question is reproduced together with the corresponding response.

In response to the FCC’s document and data requests, please see document and data production (“Document Production”). Pursuant to discussions with the FCC Transaction Team, documents responsive to Sprint’s Information Request for “all documents” or similar language are provided as part of the Document Production. The Document Production comprises the

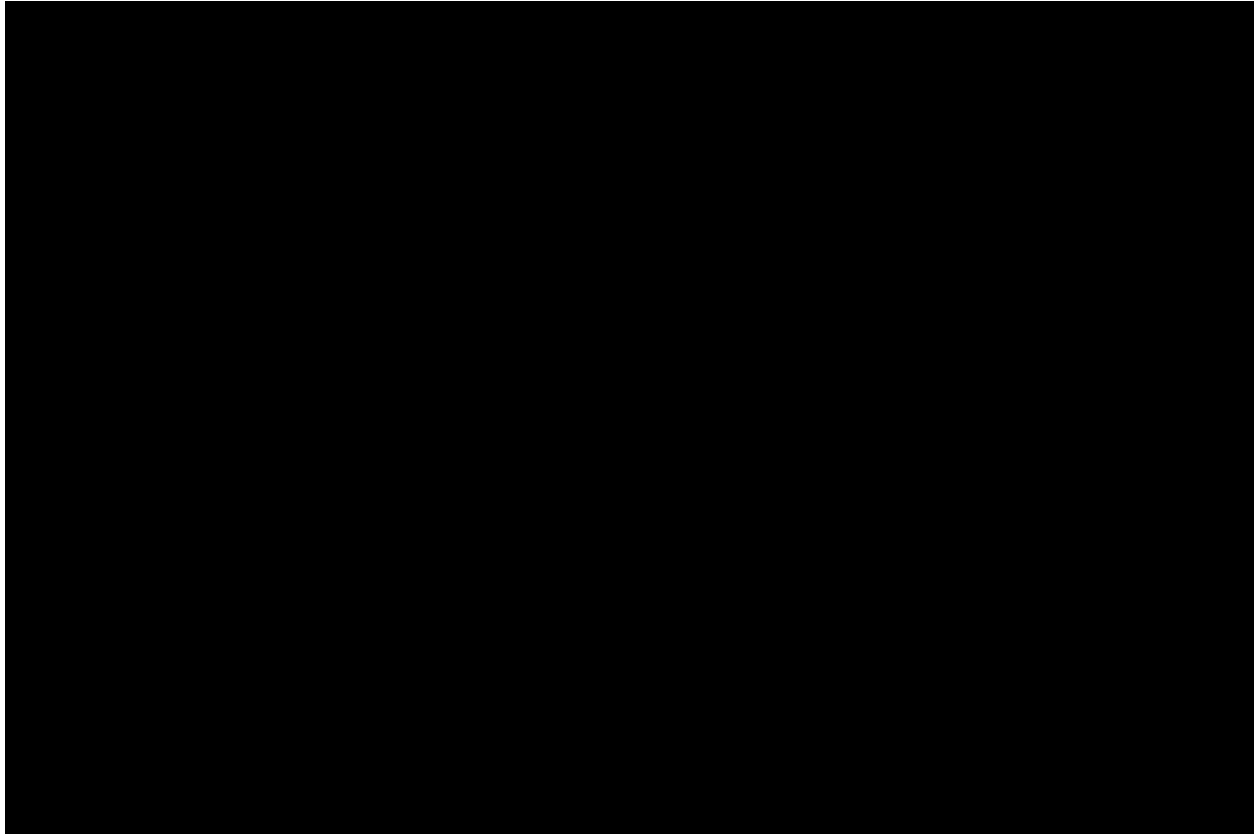
---

<sup>1</sup> *Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, General Information and Document Request for Sprint (Aug. 15, 2018). The FCC issued a separate request for information to T-Mobile on August 15, 2018, to which it submitted a response on September 5, 2018. *See Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, General Information and Document Request for T-Mobile (Aug. 15, 2018); and *Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, Response of T-Mobile US, Inc. to General Information and Document Request (Sept. 5, 2018) (“T-Mobile Response”).

**REDACTED FOR PUBLIC INSPECTION**

custodial documents provided to the Department of Justice (“DOJ”) under the Second Request (or targeted items subject to certain prior requests by the DOJ).<sup>2</sup> The Applicants have provided, or will provide, all non-privileged custodial documents that were identified as responsive to the Second Request, as modified, for the following list of custodians:

**[BEGIN HIGHLY CONFIDENTIAL]**



**[END HIGHLY CONFIDENTIAL]**

The Applicants have reviewed Sprint’s Information Request for specifications requesting “all documents” or similar phrasing and believe that the documents responsive to such FCC

---

<sup>2</sup> See Letter from Makan Delrahim, Assistant Attorney General, U.S. Department of Justice, to Jeffrey A. Jaeckel, Esq., Re: Acquisition by Deutsche Telekom AG of Sprint Corporation, DOJ File No. 60-517210-0001 (dated June 25, 2018) (“Second Request”).

specifications are within the Second Request documents being provided to the DOJ, as bounded by the universe of custodians and date ranges agreed to with DOJ. [BEGIN CONFIDENTIAL]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. [END CONFIDENTIAL]

---

<sup>3</sup> [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL]

## **REQUESTS AND RESPONSES**

### **1. REQUEST:**

*Provide a current organization chart and personnel directory for the Company as a whole and for each of the Company's facilities or divisions involved in any activity relating to any Relevant Product or Relevant Service in any Relevant Area.*

### **RESPONSE:**

Please see the exhibits labeled "Response 1 – Exhibit 1" through "Response 1 – Exhibit 12."

### **2. REQUEST:**

*Provide full and complete copies of the merger agreement and any side or letter agreements or other related agreements (and all amendments and attachments thereto) that T-Mobile and Sprint have entered into that relate to the Proposed Transaction, including the Proxy, Lock-up and Right of First Refusal Agreement (Proxy Agreement) between Deutsche Telekom and SoftBank, and any side or letter agreements or other agreements (and all amendments and attachments thereto) related to the Proxy Agreement, which the Applicants state will be executed prior to closing. In addition, provide all documents discussing the Proposed Transaction (except those discussing solely environmental, tax, human resources, OSHA, or ERISA issues), including, but not limited to:*

- a. all presentations to management committees, executive committees, boards of directors, investors, investor analysts, and industry analysts concerning the Proposed Transaction, including, but not limited to, the effect of the Proposed Transaction on Sprint's spectrum needs and business plans;*
- b. all plans for changes in the Company's operations, structure, policies, strategies, product and service offerings, corporate goals, financing, business, officers, employees, or any other area of corporate activity as a result of the Proposed Transaction;*
- c. any documents containing other terms or conditions of the Proposed Transaction that were considered, but are not reflected in the merger agreement between the parties or in the other documents supplied in response to this Request;*
- d. documents containing all terms and conditions applicable if the Proposed Transaction is not consummated;*
- e. a timetable for the Proposed Transaction, including when it was first proposed, when the parties came to an agreement, and the actions that must be taken prior to consummation; and*
- f. provide all documents since January 1, 2012 related to: (i) the reasons that any previously contemplated transaction between T-Mobile and Sprint, and any other plans*

*for acquisition, divestiture, joint venture, alliance, or merger other than the Proposed Transaction were discontinued, abandoned, or otherwise not consummated; (ii) prospects for, approaches to, or analyses of the regulatory approvals required for any such transaction; and (iii) changes in the Company's operations, policies, strategies, product offerings, corporate goals, or financing as a result of each such discontinuation, abandonment, or non-consummation.*

**RESPONSE:**

Please see T-Mobile Response to Request 2 and Document Production.

**3. REQUEST:**

*Provide a list of all databases or datasets used or maintained by the Company that constitute, record, or discuss: (a) discount or promotional requests or approvals; (b) sales personnel call reports; (c) meeting competition requests or approvals; (d) win/loss reports; (e) prices, quotes, estimates, or bids submitted to any customer; (f) the results of any bid or quote submitted to any customer or prospective customer; (g) customer relationship databases; (h) products and product codes; (i) facilities; (j) production; (k) sales; (l) prices; (m) margins; (n) costs, including production costs, development costs, distribution costs, standard costs, expected costs, and opportunity costs; (o) patents or other intellectual property; (p) research or development projects, including expenditures and significant accomplishments.*

**RESPONSE:**

Please see the exhibit labeled "Response 3 – Exhibit 1."

**4. REQUEST:**

*Provide, as of the date of this request, a csv format list, by county or county equivalent, of each spectrum license that can be used in the provision of mobile wireless services that the Company holds, leases, has an interest in through a joint venture or other business arrangement, manages, has contracted to acquire, or is in negotiations to acquire. For each license, identify the: (a) FIPS Code; (b) county; (c) state; (d) market name; (e) market number (e.g., BTA, CMA, PEA); (f) spectrum type; (g) spectrum block; (h) amount of spectrum; (i) the wireless technology format deployed or planned (e.g., GSM, CDMA, EV-DO Rev. A, UMTS, HSPA, HSPA+, LTE, VoLTE, 5G); and (j) whether the Company: (i) holds; (ii) has an interest in through a joint*

*venture or other business arrangement; (iii) leases to or from another person; (iv) manages; (v) has contracted to acquire; or (vi) is in negotiations to acquire.*

**RESPONSE:**

Data responsive to Request 4 is included in .csv files labeled “Response 4 – Exhibit 1,” “Response 4 – Exhibit 2,” and “Response 4 – Exhibit 3” in the accompanying media.

**5. REQUEST:**

*For each of the Sprint/Nextel and Sprint/Clearwire transactions, provide:*

- a. a list of all the synergies projected to be achieved by the Company as a result of the transaction in advance of receiving necessary approvals for and consummation of that transaction;*
- b. a list of all the synergies actually achieved following consummation of the transaction;*
- c. a list of all the synergies projected to be achieved that were not achieved at all or were achieved only in part, and an explanation why any such projected synergy was not achieved or was achieved only in part; and*
- d. any and all documents discussing the synergies that were projected, achieved, achieved in part, or not achieved following consummation of the transaction.*

**RESPONSE:**

***Sprint/Nextel Transaction***

In 2005, the Sprint and Nextel boards of directors announced approval of the merger of Sprint and Nextel, in part because there were substantial potential strategic and financial benefits that could result from the merger. The companies projected that a combined Sprint Nextel could be run more efficiently than either company could operate on a standalone basis and would benefit substantially from significant capital investment, cost, revenue, and subscriber synergies. The companies estimated the net after-tax value of these synergies at approximately \$12 billion, net of integration costs estimated at \$800 million, derived from four principal areas:<sup>4</sup>

1. \$4.8 billion of reduced capital expenditures, primarily arising out of (i) elimination of the need to construct Nextel’s planned broadband data network; (ii) increased efficiency in introduction of Nextel’s high-performance push-to-talk features on the CDMA network; (iii) reduced construction costs through collocation of CDMA cell sites in Nextel cell sites; (iv) benefits of increased purchasing capacity available to a combined Sprint Nextel

---

<sup>4</sup> Sprint Corp., Registration Statement (Form S-4) (May 23, 2005), at 42.



expected to result from its increased size and scale; (v) reduction in network capital expense expected to result from building a wireless interactive multimedia network; (vi) reduction in office space, real estate, and facilities; and (vii) consolidation of back-office functions.

2. \$3.0 billion of reduced network operating expenses, primarily arising out of (i) efficiently enhancing network coverage and capacity by sharing cell sites and (ii) reducing employee and related costs associated with maintaining duplicative network technology, engineering, deployment, and maintenance functions.
3. \$4.4 billion in reduced selling, general, and administrative expenses, primarily arising out of (i) consolidating and optimizing subscriber care, billing, information technology, and financial system platforms; (ii) using Sprint Nextel's increased scale to reduce costs and obtain improved terms for its outsourcing arrangements; (iii) obtaining larger volume discounts for equipment; (iv) warehousing facilities and procedures and product distribution; and (v) reducing combined sales and marketing costs and general and administrative costs.
4. \$700 million in revenue and subscriber synergies, primarily arising out of (i) the opportunity to market Sprint's long-distance wireline product portfolio to Nextel's subscriber base and (ii) the accelerated deployment of new features and services through additional CDMA coverage, capacity, and quality enhancements.

In late 2005, shortly after the merger closed, Sprint updated its estimates of synergies to \$14.5 billion, indicating that "we have looked deeper into our operations and identified additional value creation opportunities."<sup>5</sup> Response 5 – Exhibit 1 includes a detailed breakdown of anticipated merger synergies by area. In early 2006, Sprint indicated that it spent \$965 million on merger costs in 2005 and realized \$730 million in operating and capital expenditure synergies.<sup>6</sup> As discussed below, a goodwill impairment and integration challenges eventually resulted in substantial financial losses associated with the transaction.

Sprint reported a \$29.45 billion loss in 4Q 2007, arising principally from a non-cash impairment of goodwill. During 4Q 2007, Sprint experienced a significant decline in its stock price. This reduced market capitalization reflected a lower than expected performance by Sprint's wireless segment, due in part to fewer than expected net subscriber additions during 2007. Sprint reported a loss of 683,000 postpaid subscribers in 4Q 2007, the largest loss of postpaid

---

<sup>5</sup> *Sprint Nextel Provides Merger-Integration, Financial Updates*, BUSINESS WIRE (Sept. 25, 2005), <https://www.businesswire.com/news/home/20050922005306/en/Sprint-Nextel-Merger-Integration-Financial-Updates>.

<sup>6</sup> *Sprint Nextel updates integration progress*, RCR WIRELESS NEWS (Feb. 27, 2006), <https://www.rcrwireless.com/20060227/carriers/sprint-nextel-updates-integration-progress>.

subscribers Sprint had ever experienced in a single quarter. A significant reduction in forecasted cash flows in 4Q 2017 also contributed to the write down. Sprint reported that several factors caused this reduction in forecasted cash flows, including, among other things, Sprint's inability to attract and retain iDEN network subscribers. Sprint's iDEN subscriber base shrank by almost 25% between 4Q 2006 and 4Q 2007, in turn resulting in a 7% reduction in ARPU.<sup>7</sup>

Unexpectedly high integration costs also contributed to the \$29.45 billion loss that Sprint reported in 4Q 2007. When Sprint announced its acquisition of Nextel in 2005, it projected that it would cost \$800 million to integrate the two companies' networks and businesses. However, the cost of integrating Sprint's and Nextel's incompatible networks and technologies turned out to be more expensive than the companies expected. Sprint originally planned to migrate customers from Nextel's iDEN network to Sprint's CDMA network. Instead, Sprint reversed course and decided to maintain both networks: (1) an iDEN network for Boost prepaid customers and Nextel customers; and (2) a CDMA network for Sprint postpaid customers. Maintaining incompatible networks that use iDEN and CDMA technologies meant that Sprint had to invest separately in each network in order to preserve network performance and quality. Further, Sprint devoted significant management attention and resources to developing wireless devices and other products and services that would operate seamlessly on both technology platforms.<sup>8</sup> Between 2005 and 2007, Sprint recorded spending almost \$2.3 billion (\$1.4 billion after tax) on merger and integration costs – an amount far exceeding the \$800 million originally projected.<sup>9</sup> These added costs contributed substantially to the \$29.45 billion loss that Sprint reported in 4Q 2007.

### ***2008 Sprint/Clearwire Transaction***

In 2008, Sprint and Clearwire entered into an agreement to combine their WiMax wireless assets into a new company in which Sprint received a 51% equity stake. The principal purposes of this transaction from Sprint's perspective were to avoid the capital expense associated with building out the company's 2.5 GHz spectrum and obtain a stake in Clearwire's 2.5 GHz spectrum holdings. At the time, Sprint did not have the necessary capital to build out its 2.5 GHz spectrum, so creating a joint venture with Clearwire in which Sprint would retain a 51% equity stake was viewed as the best option for the company. Sprint contributed spectrum to the joint venture while other partners, including Comcast, Google, and Intel, contributed cash, thus enabling Sprint to shift the funding burden of building out the spectrum to the joint venture.

---

<sup>7</sup> *Sprint Nextel Reports Fourth Quarter and Full-Year 2007 Results*, SPRINT CORP. (Feb. 28, 2008), <http://newsroom.sprint.com/sprint-nextel-reports-fourth-quarter-and-full-year-2007-results.htm>.

<sup>8</sup> Sprint Nextel Corp., Annual Report (Form 10-K) (Feb. 21, 2008) ("Sprint 2008 10-K") at Item 1.a. (listing investment in CDMA and iDEN network integration, including development of devices that operate on both platforms, among merger integration costs).

<sup>9</sup> Sprint 2008 10-K, at Item 6.

When Sprint announced the deal, it projected that the transaction would result in some synergies derived from:

1. Reduced network build costs, primarily by consolidating network assets and enabling the combined company to build a single nationwide WiMax network, rather than two separate ones, and thus avoid duplicative capital and operational expenditures;
2. Operational efficiencies, primarily by enabling Sprint and Clearwire to share facilities, equipment, and backhaul; eliminate duplicative back office functions, including IT, billing systems, and customer support resources; and consolidate their network resources and 2.5 GHz spectrum into the new company; and
3. Procurement efficiencies, primarily through volume discounts associated with high volume purchases of network equipment and related assets, which the new company would be able to take advantage of due to its increased scale.

This transaction enabled Sprint and Clearwire to combine their spectrum assets and capital resources to build a single WiMax network in the 2.5 GHz band that was less expensive than either company had the resources to build on its own. Ultimately, however, any potential synergies associated with a joint WiMax network became irrelevant because LTE emerged as the predominant 4G technology rather than WiMax.

### ***2013 Sprint Acquisition of 100% of Clearwire***

Sprint acquired the remaining stake in Clearwire in 2013, giving it 100% equity ownership of the company. The purpose of this transaction from Sprint's perspective was to gain outright control of Clearwire's 2.5 GHz spectrum (which included the 2.5 GHz spectrum that Sprint had contributed to the joint venture in 2008), rather than a 51% position in a joint venture that included the Clearwire 2.5 GHz spectrum assets. When Sprint announced the deal, it projected that the acquisition would enable the combined company to capture synergies estimated at between \$1.5 billion and \$2.0 billion NPV, derived primarily from:

1. Between \$1.25 billion and \$1.75 billion NPV in reduced operating expenses, with cumulative cash savings of \$125 million through 2014, primarily from reductions in headcount, cell site shutdown savings, and reductions in centralized functions, including, but not limited to, real estate, IT systems, and back office functions;
2. Reduced network and non-network capital expenditures, primarily from reduced network deployment costs and ecosystem efficiencies related to network equipment, handsets, and other devices and technology developments; and

3. Approximately \$380 million NPV in other savings, derived from, among other things, improved cash flow by lowering Clearwire's cost of debt and reduced transaction costs by eliminating the need to reach agreement to buy, lease, or deploy Clearwire spectrum.

Sprint achieved many of these projected synergies. Without the Clearwire acquisition, Sprint would have had to pay Clearwire for capacity on the Clearwire network, as well as to secure access to deploy 2.5 GHz spectrum on the Sprint network. Sprint obtained approximately 7,000 legacy Clearwire WiMax-LTE sites through this transaction, thus eliminating the need to build and deploy a substantial number of sites. After closing, Sprint shut down approximately 8,000 legacy Clearwire WiMax sites that were no longer necessary. Sprint re-farmed the 2.5 GHz spectrum from Clearwire's WiMax network and repurposed it for its LTE network in 2015. This enabled Sprint to avoid having to invest in more expensive options, such as spectrum acquisition and cell splits.

Please also see the Document Production and the exhibits labeled "Response 5 – Exhibit 1" through "Response 5 – Exhibit 4."

## 6. REQUEST:

*The Applicants claim that the Proposed Transaction will generate cost savings "of approximately \$43.6 billion total net present value cost synergies by 2024," and that "T-Mobile will use these synergies to invest nearly \$40 billion to bring the combined company into the 5G era." (Public Interest Statement, pages 15, 120; Ewens Declaration, paras. 7, 12). For all business, network, or other efficiencies, including operational savings, cost synergies, or quality improvements, claimed to result from the Proposed Transaction, provide:*

- a. *identification of the efficiency and quantification of that efficiency in terms of total benefits and benefits to consumers of a Relevant Product or Relevant Service (i.e., pass-through), in any Relevant Area, separately for each year from 2018 through 2024;*
- b. *for each cost savings claimed from the Proposed Transaction, state separately for each year from 2018 through 2024, the one-time fixed cost savings, recurring fixed cost savings, and variable cost savings in dollars per subscriber, dollars per year, as a percentage decrease of the current cost base (fixed, recurring, and variable), and separately as a percentage reduction of current costs as a whole;*
- c. *all documents related to the ability of New T-Mobile to achieve that efficiency, the ability of Sprint and T-Mobile to achieve that efficiency without the Proposed Transaction, and the benefits likely to arise from that efficiency for consumers of any Relevant Product or Relevant Service in any Relevant Area;*
- d. *a detailed explanation of how the benefits from that efficiency can be independently verified, with: (i) identification of the record documents relevant to its verification; (ii) identification of the record documents relevant to the factual or numeric inputs in its*

- quantification; and (iii) identification of the record documents relevant to the validation of any material assumptions in its quantification;*
- e. all workpapers, model runs, and other calculations used to derive the cost synergies figure of \$43.6 billion; and*
  - f. all other documents, to the extent not already provided, discussing potential efficiencies from the Proposed Transaction.*

**RESPONSE:**

Please see Document Production. For materials related to T-Mobile or New T-Mobile, see T-Mobile Response to Request 6.

**7. REQUEST:**

*For Sprint and New T-Mobile, provide separately, for the United States and the Commonwealth of Puerto Rico, for 2018, the per cell site average CAPEX and OPEX for a new build, as well as the average cost of upgrading, collocating, or decommissioning a site. Provide all assumptions and methodological calculations used to generate the per site average cost estimates for Sprint and projected average cost estimates for New T-Mobile. The data should be provided on the following basis:*

- a. whether the site is a macrocell, microcell, picocell, or distributed antenna system;*
- b. whether the site is rural, suburban, or urban; and*
- c. whether the site will implement a 5G, LTE, or lower generation technology.*

**RESPONSE:**

For information regarding New T-Mobile, see T-Mobile Response to Request 7.

Data responsive to Request 7 has been provided in the file titled “Response 7 – Exhibit 1” in the accompanying media. In estimating average site costs, Sprint does not differentiate among “rural,” “suburban,” or “urban” sites, and instead estimates costs on a national basis. Sprint has provided CapEx and OpEx estimates for the following categories of sites:

- New site – Collocation (Triband 800 MHz/1.9 GHz/2.5 GHz)
- New site – Collocation (Triband 800 MHz/1.9 GHz/2.5 GHz + Massive MIMO/5G)
- New site – Greenfield/New Location (Triband 800 MHz/1.9 GHz/2.5 GHz)
- New site – Greenfield/New Location (Triband 800 MHz/1.9 GHz/2.5 GHz + Massive MIMO/5G)
- Minimacro (enhanced small cell)
- Upgrade site – add 1.9 GHz and 2.5 GHz

- Upgrade site – add 800 MHz and 1.9 GHz
- Upgrade site – add 800 MHz and 2.5 GHz
- Upgrade site – add 2.5 GHz
- Upgrade site – add 800 MHz
- Massive MIMO / 5G

Unit costs included in Response 7 – Exhibit 1 represent services and equipment for CapEx and Rent, Backhaul, Utilities, and Maintenance and Support for OpEx. Services costs include Site Acquisition, Power Installation, Equipment Installation, Leased Backhaul Deployment, Site Modification, H-Structural Revision Modifications, Commissioning & Integration, e911, FCC, and Testing and Optimization. Equipment costs include RAN (Radio Access Network) Equipment, base station equipment (BBU), Antenna(s), Backhaul CSR with CWDM, and Ancillary (Rectifiers, Hybrid Cables, RF & Fiber Jumpers, Battery Cabinet and connection kit, etc.). Sprint has also provided decommissioning cost estimates. Sprint’s new sites and upgrades are virtually all LTE-only, but some 3G equipment is sometimes harvested from existing equipment to add to new sites. This does not materially change the cost estimates. 5G sites are limited to Massive MIMO sites. In addition, Sprint also deploys Strandmount small cells with cable provider partners at a budgeted capital unit cost of [BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]. Sprint also provides MagicBox small cells to customers for use indoors to enhance coverage. These devices have a capital cost of [BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL] and utilize wireless backhaul over Sprint’s own network. Sprint has not estimated an overall average cost for Distributed Antenna Systems as these systems vary widely by design and deployment.

## 8. REQUEST:

*Mr. Draper claims in his declaration that “[w]ith its limited financial resources, Sprint has prioritized its investment over the last three years in promotional discounts and has underinvested in the network.” (Draper Declaration, para. 16).*

- describe in detail what levels of network investment Mr. Draper considers to be “underinvestment”; and*
- provide all plans, analyses, and reports related to Sprint’s decision to “underinvest” in the network and any related consequences in service quality.*

## RESPONSE:

When Mr. Draper refers to “underinvest[ment] in the network” in his declaration, he is referring to Sprint’s level of wireless network capital expenditures (“Wireless CapEx”). Sprint’s level of Wireless CapEx has been insufficient (*i.e.*, “underinvestment”) in the sense that Wireless CapEx

has been below the level necessary to achieve and maintain the operational status of Sprint's wireless network, keep up with increasing data usage, and manage subscriber migration (e.g., movement from suburban to urban and ex-urban locations), among other issues.

As described in Mr. Draper's declaration<sup>10</sup> and Mr. Saw's declaration,<sup>11</sup> Sprint's wireless network build plans and business realities have led to a series of decisions that necessitated a decrease in wireless network investment. For example, Sprint pursued a monopoly build plan to improve its wireless network at less cost than a standard macro-oriented network build.<sup>12</sup> However, that monopoly strategy was ultimately unsuccessful and abandoned.<sup>13</sup> As a result of these ineffective network build efforts and Sprint's limited financial resources, the company has, over the last three years, directed investment towards promotional discounts and measures – albeit generally unsuccessful ones – to attract subscribers.<sup>14</sup> These factors have collectively led to underinvestment in Sprint's wireless network.

In Sprint's experience, an adequate level of steady state annual Wireless CapEx requires approximately [BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED] [END CONFIDENTIAL].<sup>15</sup> Sprint has not invested at this level. For example, as set forth below, in fiscal year 2017 Sprint invested approximately \$2.7 billion in Wireless CapEx:

	Sprint's Wireless CapEx (\$ millions)	Approximate Steady State Investment (\$ millions)	Gap (\$ millions)
FY 2015	\$4,089	[BEGIN CONFIDENTIAL] [REDACTED]	
FY 2016	\$1,591		
FY 2017	\$2,722		
		[END CONFIDENTIAL]	

<sup>10</sup> See *Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, Description of Transaction, Public Interest Statement, and Related Demonstrations (filed June 18, 2018) ("Public Interest Statement"), at Appx. F, Declaration of Brandon "Dow" Draper, Chief Commercial Officer, Sprint Corporation, ¶¶16-17 ("Draper Decl.").

<sup>11</sup> See Public Interest Statement, at Appx. E, Declaration of John C. Saw, Chief Technology Officer, Sprint Corporation, ¶¶9-10 ("Saw Decl.").

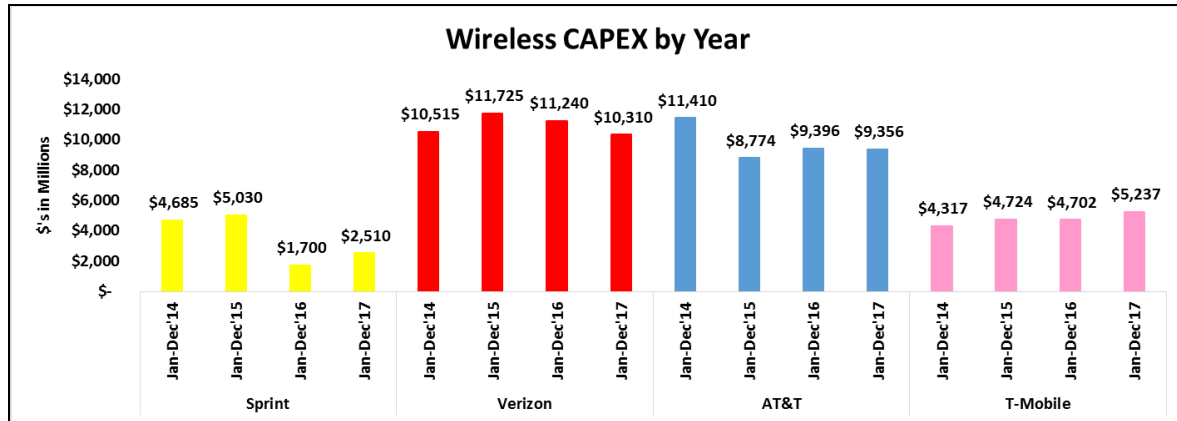
<sup>12</sup> *Id.*

<sup>13</sup> *Id.* ¶10.

<sup>14</sup> Draper Decl. ¶16.

<sup>15</sup> Based on Sprint's analysis, approximately [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] is also necessary.

Mr. Draper's reference to underinvestment also refers to the fact that, as illustrated below, Sprint invests less than other national wireless carriers and has not been able to spend enough to close its network performance gaps.<sup>16</sup>



Please also see Document Production.

## 9. REQUEST:

*Provide all documents since January 1, 2012, discussing the decision to participate or not to participate in previous spectrum auctions such as the Incentive Auction, or upcoming spectrum auctions, including the 3.5 GHz Band, the C-Band, and any millimeter wave spectrum auctions. Further, provide all documents discussing bidding strategy in past or upcoming spectrum auctions, including a discussion of the spectrum on which to bid, the dollar amount to bid, and how the bids should change based on competitive considerations. Explain how the Company's auction participation plans would be affected by the occurrence or not of the Proposed Transaction.*

## RESPONSE:

Sprint continues to operate as a separate company from T-Mobile during the pendency of the Proposed Transaction. Sprint therefore will independently assess its opportunities in all spectrum bands that are being made available for commercial use consistent with its current practices.

<sup>16</sup> See Draper Decl. at ¶¶7-15.



**[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] **[END  
HIGHLY CONFIDENTIAL]**

Sprint has indicated that it would like to participate in the upcoming auctions of the 28 GHz Band (“Auction 101”) and the 24 GHz Band (“Auction 102”). On August 6, 2018, Sprint petitioned the Commission to remove potential regulatory uncertainty about Sprint’s ability to participate in the auctions while pursuing approval and consummation of its proposed merger with T-Mobile. Sprint’s Petition for Expedited Declaratory Ruling or Waiver Regarding Joint Bidding and Request for Limited Waiver of Auction Form Rules requested that the Commission issue an expedited declaratory ruling that Sprint’s merger agreement with T-Mobile does not constitute a joint bidding arrangement. In the alternative, Sprint requested a waiver of the bar on joint bidding by national carriers to enable it to participate separately in Auctions 101 and 102. In addition, to ensure that Sprint and T-Mobile would be permitted to close their transaction promptly after receipt of the necessary governmental approvals, Sprint requested a limited waiver of the Commission’s rule prohibiting major modifications of short-form applications or a waiver permitting it to update the Commission regarding its ownership by filing a timely long-form application. In its pleading, Sprint discussed in detail the relevant provisions of its Business Combination Agreement with T-Mobile and the auction safeguards adopted to ensure compliance with the Commission’s auction rules. Sprint requested that the Commission grant relief before the short form application deadline on September 18, 2018. T-Mobile also sought clarification from the Commission that the Business Combination Agreement does not constitute a joint bidding arrangement. On August 8, 2018, the Wireless Telecommunications Bureau issued a Public Notice seeking public comment on the auction-related requests of Sprint and T-Mobile, and comments on the requests were filed on August 22, 2018.

In the event the Proposed Transaction does not occur, Sprint will continue to make decisions about its auction participation in the manner described above. If the Proposed Transaction is approved and consummated, New T-Mobile would be responsible for future auction participation decisions and the evaluation of the spectrum resources and needs of the merged entity in determining such participation.

Please also see Document Production. Note that Sprint has not provided documents related to Auction 101 and Auction 102 so as to avoid disclosing bids or bidding strategies.

## **10. REQUEST:**

*Provide all analyses, including GUPPI analyses, merger simulations, econometric modeling, or similar analyses, including those regarding the effect of market concentration or pricing, that have been undertaken by the Company or any consultant or expert hired by the Company to analyze the effects of the Proposed Transaction, including all documents and data used in these analyses. If such analyses incorporate cognizable efficiencies, including quality and quality-adjusted price efficiencies, specify the types and amounts of cognizable efficiencies assumed, together with the justifications, data sources and work papers used for these efficiencies.*

## **RESPONSE:**

Economic analyses and modeling were produced by the parties as part of their initial Public Interest Statement submission. The parties anticipate presenting additional economic work in their Opposition to Petitions to Deny, to be submitted on September 17, 2018. This additional work will be placed in the docket, subject to appropriate protective order limitations, at that time. Because this additional work is currently in progress and has been undertaken by economists at the request of and under the direction of outside counsel, it is privileged, and therefore generally is referenced at this time only in the privilege log, to the extent such work product is in the files of the relevant custodians.

## **11. REQUEST:**

*The Applicants state that “Sprint’s service revenue and ARPU have been declining for at least five years, with total service revenue falling around 25 percent from 2013 to 2018, and postpaid ARPU falling approximately 30 percent. Sprint has a current net debt of approximately \$32 billion and is the most highly leveraged company in the S&P 500.” (Public Interest Statement, page 97). The Applicants also assert that “Verizon and AT&T both dwarf Sprint in terms of adjusted EBITDA and free cash flow, leaving Sprint as a standalone company at a severe disadvantage with respect to the cash necessary to invest in improving its network and business.” (Public Interest Statement, page 97). Provide all plans, analyses, and reports related to the impact of Sprint’s debt, EBITDA, and free cash flow on its ability to invest in its network and gain new customers or retain existing customers.*

## **RESPONSE:**

Please see Document Production.

## **12. REQUEST:**

*Provide all documents, and any underlying spreadsheets, that relate to or discuss difficulties in providing any Relevant Product or Relevant Service in any Relevant Area, including, but not limited to:*

- a. spectrum utilization and efficiency;*
- b. how the Company evaluates and monitors capacity and capacity utilization, speed or quality of service, including the amount of spectrum, speed of connection, key performance indicators, and facilities (including cell splitting, cell site configuration, cell site densification, and backhaul) that are required to meet consumer demand;*
- c. the Company's estimates of the amount and type of spectrum required to support each Relevant Product or Relevant Service;*
- d. any spectrum capacity constraints the Company is currently facing or is projected to face in the future;*
- e. dropped and/or blocked calls;*
- f. speed and other quality measures of data services;*
- g. the amount of spectrum needed for the Company to provide mobile wireless services for each technology deployed in the Company's network;*
- h. the impact the availability of backhaul services has on the Company's ability to provide data services at a particular rate of speed;*
- i. repurposing spectrum, including the transition of subscribers from the repurposed spectrum; and*
- j. alternative solutions to any spectrum constraint problems, including enhanced network or user equipment features, changing prices, or use of small cells or other network reconfiguration options.*

## **RESPONSE:**

Please see Document Production.

## **13. REQUEST:**

*The Applicants state that "Sprint's standalone network would be limited in terms of geographic reach," and that it "would lack sufficient low-band spectrum needed to provide the robust, national 5G coverage that New T-Mobile would offer and would not be able to utilize as much 2.5 GHz spectrum for 5G." (Public Interest Statement, at pages 23-25). Provide:*

- a. all documents related to all engineering models or claims, relied on by Mr. Ray or otherwise, for New T-Mobile, including all documents relating to 5G network coverage and speed for T-Mobile, Sprint, and New T-Mobile, including, but not limited to, all versions or drafts of any such model;*

- b. *all documents related to 5G network coverage and speed (2021 and 2024) for T-Mobile, Sprint, and New T-Mobile as shown in Figures 4 and 5 of the Public Interest Statement (Public Interest Statement, pages 26-27);*
- c. *all documents related to the capacity of New T-Mobile's 5G network and Sprint's standalone 5G network, including reporting estimates by year for all years that such estimates were made;*
- d. *all documents detailing assumptions about New T-Mobile's spectrum holdings, including the estimated efficiency of spectrum used for 5G services and estimates of how much spectrum (and in what frequency ranges) New T-Mobile will provide 5G services;*
- e. *all documents discussing the plans of Sprint to purchase additional spectrum on the secondary market, including Sprint's plans to acquire below-1-GHz spectrum, participation in the Incentive Auction, and inquiries, offers, and valuation of available low-band spectrum on the secondary market; and*
- f. *all documents, including models and the results from any field trials, discussing the current and projected performance characteristics of LTE-A and 5G from 2015 to 2024, including the efficiency of spectrum use, upload and download speed, latency, and deployment configuration.*

**RESPONSE:**

Please see Document Production. For all documents regarding T-Mobile and New T-Mobile, see T-Mobile Response to Request 13.

**14. REQUEST:**

*The Applicants state that, "[i]n its initial three years, New T-Mobile will invest significantly more in network infrastructure than the standalone firms combined to build a world-leading nationwide 5G network." (Public Interest Statement, page 80). Provide a detailed explanation why New T-Mobile would have the incentive to invest significantly more in network infrastructure than the standalone firms, and provide all documents related to New T-Mobile's network investment incentives. Provide all documents discussing Sprint's 5G network investment as a standalone entity.*

**RESPONSE:**

Please see Document Production and T-Mobile Response to Request 14.

**15. REQUEST:**

*Provide a list, as of the date of this Request, by CMA, of the cell sites owned, leased, or shared by the Company, the percentage of cell sites collocated with each of the following: (1) T-Mobile; (2) AT&T; (3) Verizon Wireless; (4) U.S. Cellular; and (5) all other mobile wireless service providers.*

**RESPONSE:**

A list of Sprint sites is provided in “Request 15 – Exhibit 1.” Sprint does not, however, track collocation information in the ordinary course of business. For information regarding Sprint’s collocations with T-Mobile, see T-Mobile Response to Request 15.

**16. REQUEST:**

*The Applicants state that “Sprint plans to spend \$5-6 billion a year over the next three years to build a 5G network and, even with that spending, Sprint’s 5G footprint would be geographically limited.” (Public Interest Statement, page 97). The Applicants claim that even though “Sprint’s massive cost reductions have stabilized the company’s finances and yielded positive free cash flow for the first time in many years, the company achieved that result only by shrinking the company and reducing network investment to historically low levels.” (Public Interest Statement, page 97; see also Draper Declaration, paras. 4-5). Describe in detail and provide all documents regarding Sprint’s prior and planned network expenditures concerning its buildout of a 5G network, including, but not limited to, Sprint’s cost reductions to stabilize the company’s finances and yield positive free cash flow, or alternative plans considered or reviewed by senior management.*

**RESPONSE:**

Sprint's current board-approved plan of record was adopted in April of 2018 and calls for total company non-handset capital expenditure<sup>17</sup> of [BEGIN HIGHLY CONFIDENTIAL] [REDACTED]  
[REDACTED] [END HIGHLY CONFIDENTIAL]. The current plan reflects an increase in spending from [BEGIN HIGHLY CONFIDENTIAL] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [END HIGHLY CONFIDENTIAL]

<sup>17</sup> In this response, “total company non-handset capital expenditure” includes capital expenditures for wireless, wireline, and corporate segments as well as capitalizable costs associated with FCC licenses. Expenditures related to device leasing are not included.

Increased expenditures in mMIMO sites, small cells, tower upgrades, and new towers are designed to increase the Company's deployment of 2.5 GHz spectrum and to roll out 5G services in several major urban centers beginning in 2019 – Sprint's "select" 5G build.

Total company non-handset capital expenditure for 2017 was \$3.4 billion, including \$2.8 billion for non-handset wireless CapEx.<sup>18</sup> Sprint's current plan of record includes the following total company non-handset capital expenditure over the next five fiscal years: **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED]

[REDACTED] **[END HIGHLY CONFIDENTIAL]** That reflects the following changes from Sprint's prior plan of record that was adopted in late 2017: an increase of **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END HIGHLY CONFIDENTIAL]** in FY 2018, a decrease of **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END CONFIDENTIAL]** in FY 2019, and an increase of **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END HIGHLY CONFIDENTIAL]** in FY 2020. In addition, in adopting its current plan of record, Sprint also considered in parallel **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED] **[END HIGHLY CONFIDENTIAL]** to complete a 5G build with **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END HIGHLY CONFIDENTIAL]** mMIMO towers. That scenario contemplated an increase of **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END HIGHLY CONFIDENTIAL]** mMIMO towers and **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED] **[END HIGHLY CONFIDENTIAL]** compared to the current plan of record.

As Sprint ramps up capital spending in FY 2018, **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED] **[END HIGHLY CONFIDENTIAL]** In FY 2014 and 2015, Sprint spent \$4.9 billion and \$4.1 billion in non-handset wireless CapEx. In FY 2016 and 2017, however, Sprint reduced its non-handset wireless CapEx to \$1.6 billion and \$2.8 billion. Over this same time period, neither Verizon nor AT&T significantly reduced their wireless CapEx, which was already significantly higher than Sprint's wireless CapEx.

Sprint became adjusted free cash flow positive in fiscal year 2016-2017. In the four years prior to 2018, Sprint reduced its cost of service and SG&A by nearly \$6 billion. These cost reductions involved significant cuts in customer care, network operating expenses, employee headcount, and other operating expenses. The current CapEx plan of record is expected to result in negative

---

<sup>18</sup> In this response, "non-handset wireless CapEx" does not include costs associated with FCC licenses, rebanding, or spectrum.

and breakeven adjusted free cash flow for Sprint in fiscal years 2018 and 2019, respectively. Any meaningful increase in CapEx will result in further negative adjusted free cash flow over the next two years.

Please also see the exhibit labeled “Response 16 – Exhibit 1” and the Document Production.

## **17. REQUEST:**

*In his declaration, Dr. Evans emphasizes that network investments are essential to remain competitive, and cites to various internal documents. (Evans Declaration, paras. 140-41). Explain in detail the typical time horizon and process that Sprint plans for network improvements, upgrades, and capital expenditures in its ordinary course of business. Provide all documents relating to Sprint’s ordinary course of business network upgrades and capital expenditure plans from January 1, 2012, to the present. Discuss in detail the Company’s ordinary course of business plans for network coverage, data rate, capacity, and other quality improvements including coverage expansion to new areas and indoor coverage, and the planned new macrocell and small cell deployments in urban, suburban, and rural areas.*

## **RESPONSE:**

Sprint is continuously working to improve the network coverage, capacity, speed, and reliability of its voice and data wireless services. Sprint accomplishes these objectives by both incrementally improving the company’s current network and upgrading its network to new technologies as older standards become obsolete. The time horizon and process for improving Sprint’s wireless network and services typically depend on a number of factors, including budgetary constraints, regulatory approvals, the pace at which new technology is adopted by customers, and any unanticipated problems.

Numerous requirements and costs are associated with Sprint’s development, deployment, and offering of mobile wireless services. These include network equipment development and procurement; device development and procurement; capital expenditures to build out the network; operating expenses required to pay for the operation of the network; back office and support functions; marketing costs associated with attracting and retaining subscribers, retail stores, dealers, and other channels; and a variety of other operational costs. In fiscal year 2017, Sprint had wireless capital expenditures of \$2.7 billion, wireless cost of service of \$5.7 billion, and wireless cost of products of \$6.6 billion.

Continuing to develop and offer mobile wireless services and improving the network coverage, data rates, capacity, and quality of those services requires ongoing investment. Sprint’s current board-approved network plan includes [BEGIN HIGHLY CONFIDENTIAL] [REDACTED]

[END HIGHLY CONFIDENTIAL] in network capital expenditures for 2018 to 2022.<sup>19</sup> These costs cover nominal improvements to Sprint’s current wireless service offerings, the company’s roll-out of voice over LTE (“VoLTE”) in 2018, and its limited deployment of 5G service in 2019. (Sprint’s rollout of VoLTE and 5G, discussed further below, will be available to all categories of customers currently serviced by Sprint’s wireless voice and data services.) Sprint generally sets multiyear capital plans, but network capital expenditures require annual approval from the Sprint board.

Currently, Sprint has [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] macrocell sites and [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] small cell deployments (including [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] enhanced small cells called “mini macros” and [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] strand mounts) to support its network, while utilizing spectrum in the 800 MHz (ESMR), 1.9 GHz (PCS), and 2.5 GHz (BRS/EBS) bands. Sprint plans to continue to improve its current network by relying on a traditional macrocell site-oriented approach supplemented by mini macros, strand mounts, and MagicBox indoor femtocells. With respect to its time horizon, Sprint currently intends to spend approximately [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] in network capital expenditure per year between 2018 and 2020. With this investment, Sprint will focus on network densification and optimization of its 4G LTE footprint in metropolitan and suburban areas to improve network experience and the deployment of “massive MIMO” (multiple-in multiple-out) equipment that will deliver 4G LTE capacity and support the launch of 5G in its top markets. By 2021, Sprint plans to increase its macrocell sites to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] and its small cell sites to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]

Sprint primarily constructs or deploys new towers or sites in “neighborhood expansion” areas. These additional facilities enlarge Sprint’s service coverage footprint in expanding neighborhoods that have outgrown Sprint’s existing network. These locations are determined in conjunction with Sprint’s sales operations. Sprint also intends to expand its coverage footprint in areas such as vacation hotspots where its customers frequently travel and where it currently is subject to high roaming costs. With respect to indoor coverage, Sprint is focused on improving its customers’ LTE experience indoors, which typically involves the deployment of indoor small cell solutions (such as mini macros and MagicBox indoor femtocells) and indoor distributed antenna systems.

Once Sprint has decided to upgrade its coverage in a given area, the typical timeframe for those improvements depends on numerous factors, such as the complexity of the upgrades, the

---

<sup>19</sup> Total company non-handset capital expenditure for the same time period in the current board-approved plan is [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]



geographic makeup of that area, and the nature of the jurisdiction. An upgrade of an existing site typically takes twelve to eighteen months to complete, while construction of a new site typically takes eighteen to twenty-four months. The deployment of small cells on public infrastructure typically takes nine to eighteen months to complete.

Sprint notes that its anticipated wireless service improvements require numerous regulatory approvals. Network buildout often requires local building and zoning permits if such buildout requires the construction of new cell sites. Sprint previously encountered significant hurdles when it tried to implement a plan to deploy small cell monopolies in 2015 (a deployment plan that was expected to save \$1.8 billion). Sprint anticipated that it would deploy [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] monopolies, but by 2017 it had not deployed any, due largely to problems securing local permits. As a result, Sprint was forced to write off over \$180 million for abandoned monopoly sites.

***Use of 3G CDMA technology and VoLTE roll-out.*** Sprint's network currently supports voice services on 3G CDMA technology and data services on 4G LTE and 3G EVDO technologies. One key challenge of using CDMA technology is that it precludes Sprint customers from using voice and data simultaneously on a device. Thus, a Sprint customer with a smartphone cannot surf the web while also using cellular voice services. This is a significant customer experience disadvantage compared to the other major wireless carriers that support simultaneous voice and data services. Thus, Sprint plans to improve its voice services by deploying VoLTE technology in 2018 in 50 market areas, thereby allowing users to simultaneously use voice and data services, with the goal to offer the technology in all of Sprint's markets by the end of 2019.<sup>20</sup> Over time, Sprint hopes to transition all of its voice wireless services to VoLTE. While Sprint's launch of VoLTE will allow customers to simultaneously use voice and data, it is possible that coverage will be less reliable on the LTE network compared to Sprint's 3G CDMA platform. Sprint's ability to eventually transition away from its 3G CDMA network depends on whether the company can transition a sufficient number of customers to LTE.

***Deployment of 5G.*** Given the increasing demand for data, the need to improve network performance, and recent technological developments – including the setting of initial 5G standards and the upcoming availability of 5G New Radio (“5G NR”) technology in both radio equipment and mobile devices – Sprint will start deploying 5G technology during 2019. Beginning in the first quarter of 2019, Sprint will introduce 5G technology to nine U.S. cities,

---

<sup>20</sup>

[BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [END  
CONFIDENTIAL]

including Dallas/Fort Worth, Chicago, Los Angeles, Atlanta, New York City, Washington D.C., Houston, Phoenix, and Kansas City. With respect to the time horizon, under Sprint's current board-approved network plan covering 2018 through 2022, Sprint will build out [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] 5G sites. Sprint will deploy over [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] sites in 2018 and more than [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] sites in 2019, reaching [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] total sites in 2020. Thus, Sprint's initial 5G deployment plan will not be a ubiquitous national deployment, but will focus instead on population-dense metropolitan areas.

Sprint will launch 5G on its 2.5 GHz spectrum and will use 5G NR equipment incorporating massive MIMO technology. Sprint has been testing 5G NR equipment with vendors including Ericsson, Nokia, and Samsung. Sprint has also been working with leading device manufacturers on 5G-capable devices and currently has commitments from several top-tier device manufacturers, with their first 5G devices expected to be available in the first half of 2019. These radios are cost-effective because they can be used to simultaneously enhance 4G LTE at 2.5 GHz and deploy 5G in this spectrum, and because they are software-upgradeable to 5G without additional tower climbs. These radios will enable Sprint to alter the proportion of spectrum dedicated to 4G LTE versus 5G through software.

Massive MIMO incorporates multiple antenna elements on one radio in order to strengthen signals. Sprint's current 2.5 GHz deployed radios use eight transmit and eight receive antenna elements, whereas massive MIMO will have a total of 128 antenna elements. Sprint will utilize the dual connect or "split mode" functionality of massive MIMO to simultaneously support both LTE and 5G in the 2.5 GHz spectrum band. (Because Sprint must maintain its 4G LTE and 3G CDMA networks for the foreseeable future, it has no plans to utilize its 800 MHz or 1.9 GHz spectrum bands for the launch of 5G.) Initially, Sprint will deploy about [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of 2.5 GHz spectrum for 5G and about [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] for 4G LTE. Over time the company will allocate additional 2.5 GHz spectrum to 5G in order to increase capacity and throughput as more customers migrate to the newer technology. However, for the foreseeable future, Sprint will continue to reserve a significant portion of 2.5 GHz spectrum for 4G LTE.

Sprint's 2.5 GHz footprint currently covers 208 million POPs, with [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] macrocell sites at 2.5 GHz supporting 4G LTE operations. Sprint's planned 5G buildout of [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] 5G-enabled sites, meanwhile, will cover about 150 million POPs by 2020. Sprint has contemplated massive MIMO scenarios that would cover approximately 200 million POPs by deploying more massive MIMO, but its current plan of record assumes [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]

**CONFIDENTIAL]** sites. Given Sprint's limited subscriber scale, its budget constraints, and the poor propagation characteristics of 2.5 GHz spectrum, Sprint will not be able to offer ubiquitous nationwide 5G service for the foreseeable future.

In the areas where it is deployed, Sprint expects its 5G technology to deliver markedly better network performance and provide significant improvements in network coverage, data rates, capacity, and connection density, compared to its current 4G LTE technology. Nonetheless, Sprint faces limitations in terms of what it can achieve as a standalone company. Because Sprint will rely on 2.5 GHz spectrum to carry most data-intensive traffic, it will not have a robust 5G coverage layer in all areas across the country. 2.5 GHz spectrum can provide enormous capacity and throughput where it is deployed but, as indicated above, it has much poorer propagation characteristics than low-band spectrum. Signals on 2.5 GHz spectrum cannot travel as far from a cell site or penetrate buildings as well as low-band spectrum. Therefore, subscribers are more likely to experience coverage gaps and a less consistent data experience than a similar network of cell sites built with low-band spectrum.

2.5 GHz spectrum must be built out very densely if it is to provide wide areas of coverage and consistent user experience. However, building out 2.5 GHz densely enough to support a ubiquitous nationwide 5G network would be very challenging, expensive, and impractical for Sprint as a standalone company, particularly in lower-population and rural areas outside of major metropolitan areas. Without sufficient customer scale or population density to justify investment, 2.5 GHz cannot adequately serve alone as a ubiquitous coverage layer in a nationwide 5G network. Nor can Sprint's low-band spectrum support 5G, given the limited nature of these holdings and the ongoing use of those bands for 4G LTE. Thus, while Sprint's 5G network will provide a greatly improved user experience compared to the 4G LTE services it currently offers, the network experience will not be consistent across Sprint's footprint.

While deploying 5G reduces the amount of 2.5 GHz spectrum Sprint can potentially dedicate to LTE in its launch markets, Sprint does not anticipate that the launch of 5G will diminish its 4G LTE performance. Sprint must support 4G LTE for the foreseeable future, given the limited geographic reach of Sprint's 5G network and the fact that customers will transition to 5G gradually.

Please also see Document Production.

## **18. REQUEST:**

*For any Relevant Service or Relevant Product in any Relevant Area, provide all:*

- a. short-term and long-term strategic and business plans;*
- b. plans to reduce costs, improve services or products, improve service quality, improve capacity to transmit mobile wireless services, introduce new services or products;*
- c. budgets and financial projections on a local, regional, or national basis; and*
- d. presentations to management committees, executive committees, boards of directors, investors, investor analysts, bankers, and industry analysts.*

## **RESPONSE:**

Please see Document Production.

## **19. REQUEST:**

*The Applicants state that New T-Mobile would provide “substantial capacity improvements that will benefit consumers” as demonstrated in Tables 3-6 and “will be able to provide dramatic improvements in data rates to consumers” as shown in Tables 7-8 of the Public Interest Statement. (Public Interest Statement, pages 42-45).*

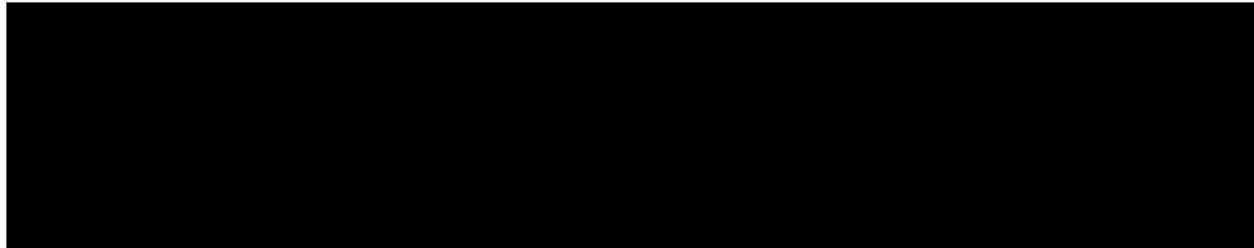
- a. define “available capacity” and “carried capacity” as shown in Tables 3-6 and 7-8. Explain in detail whether these values represent monthly downlink, uplink, or combined capacities nationwide, and how they are calculated;*
- b. provide the current or projected nationwide “offered capacity” and “carried capacity” values from 2015 to 2024 for each of T-Mobile, Sprint, and New T-Mobile; and*
- c. provide all plans, analyses, and reports reviewed and relied upon in making these tables, and provide all documents related to the claimed improvements.*

## **RESPONSE:**

For the requested definitions and explanations regarding “available capacity” and “carried capacity,” as referenced in the Public Interest Statement, see T-Mobile Response to Request 19.

Sprint has calculated available capacity and carried capacity for 2015, 2016, 2017, and part of 2018 to estimate the ratio of carried capacity (referred to as “tonnage served” below) to available capacity (referred to as “capacity available” below). Those figures are provided in the following chart.

**[BEGIN HIGHLY CONFIDENTIAL INFORMATION]**



**[END HIGHLY CONFIDENTIAL INFORMATION]**

Note that the estimated available and carried capacity in the chart above approximates network-wide capacity, but utilization and capacity constraints may vary by the specific area of the network.

While available network capacity and utilization may vary across geographic areas, depending on factors such as network configuration, spectrum deployment, subscriber load, and usage, at the network-wide level, Sprint's aggregate carried traffic or delivered tonnage averaged across 2016 and 2017 was approximately 31.5% of its total estimated available capacity.<sup>21</sup>

Note that Sprint does not forecast available capacity in the ordinary course, but does forecast usage demand. Documents reflecting Sprint's demand forecasts are included in the Document Production. T-Mobile and its advisers generated the tables referenced in Request 19. Please see T-Mobile's Response to Request 19 regarding forecasts for carried and available capacity, as well as plans, analyses, and reports relied upon to generate the tables in the Public Interest Statement. Please also see Document Production for documents related to claimed capacity improvements.

---

<sup>21</sup> See Saw Decl. ¶7.

**20. REQUEST:**

*Provide, as of the date of this Request, polygons in an ESRI shapefile format representing geographic coverage in every Relevant Area for a -85 dBm RSSI signal level or better for each mobile broadband network technology (e.g., GSM, CDMA, EV-DO Rev. A, UMTS, HSPA, HSPA+, LTE, VoLTE, 5G) deployed in each frequency band (e.g., 600 MHz, 700 MHz, 800 MHz, AWS, PCS, BRS, EBS). Provide all assumptions, methodology (e.g., propagation, projection, field measurements), calculations (including link budgets), tools (e.g., predictive and field measurements), and data (e.g., terrain, morphology, buildings) used in the production of the polygons, and identify the propagation tool used, the propagation model used within that tool, including but not limited to, the coefficients used in the model, and any additions, corrections, or modifications made to the model. For detailed instructions, see the attached shapefile format specifications.*

**RESPONSE:**

Data responsive to Request 20 is included in .csv files labeled “Response 20 – Exhibit 1” through “Response 20 – Exhibit 11” in the accompanying media.

**21. REQUEST:**

*Provide the projected 5G coverage maps in geo-referenced shapefile format for 2021 and 2024 with average download data rates being considered by the Company of: (a) 25 Mbps, (b) 100 Mbps, (c) 150 Mbps, (d) 300 Mbps, (e) 500 Mbps, and (f) 5G coverage for Sprint and New T-Mobile. (Public Interest Statement, Figures 4-5, pages 26-27, Tables 7-8, pages 44-45, Figure 10, page 46). For detailed instructions, see the attached shapefile format specifications.*

**RESPONSE:**

Please see Document Production. For information regarding New T-Mobile, see T-Mobile Response to Request 21.

**22. REQUEST:**

*Provide all plans, analyses, and reports discussing the research and development of any new Relevant Product or Relevant Service by the Company, individually or with third parties, including those discussing the Company’s total expenditures associated with research, development, and testing of any new Relevant Product or Relevant Service.*

**RESPONSE:**

Please see Document Production.

**23. REQUEST:**

*For any Relevant Service or any Relevant Product in any Relevant Area, provide all documents discussing:*

- a. the Company's analysis of, or response to, the entry or potential entry of new competitors into any Relevant Product or Relevant Service;*
- b. any actual or potential effect on the supply, demand, cost, or price of any Relevant Service or any Relevant Product caused by the introduction by a current market participant of any new Relevant Product or any Relevant Service or by any change in the price or service characteristics of any Relevant Product or Service, or increase in the quality of any Relevant Product or Relevant Service;*
- c. any actual or potential effect on the supply, demand, cost, or price of any Relevant Service or any Relevant Product caused by competition from any new entrant, including cable companies, or by any new service regarded by customers as a potential substitute for the Relevant Product or Relevant Service;*
- d. prepaid mobile wireless service offerings, the development of new prepaid mobile wireless service offerings, or the expansion, improvement, or reduction of existing prepaid mobile wireless service offerings, or any other changes to the company's current prepaid mobile wireless services offerings, including, but not limited to, brand development or elimination, retail expansion and distribution, promotions, and device offerings as a result of the Proposed Transaction; and*
- e. how the combined company would compete with other mobile wireless service providers, including, but not limited to, prepaid and postpaid advertising plans and strategies, prepaid and postpaid service plans and promotions, and prepaid and postpaid devices offered under either of the T-Mobile or Sprint brands.*

**RESPONSE:**

Please see Document Production. For information regarding T-Mobile and New T-Mobile, see T-Mobile Response to Request 23.

## 24. REQUEST:

*The Applicants assert that “[t]he negative perception of the Sprint network has been extremely difficult for the company to overcome,” and that “Sprint’s declining share and persistently high churn occurred despite Sprint’s aggressive attempts to add subscribers and thereby gain scale.” (Public Interest Statement, pages 96-97). Further, Mr. Draper claims that “AT&T and Verizon also have much larger distribution networks, which serve to drive customer acquisition and retention.” (Draper Declaration, para. 25). Describe in detail and provide all documents related to customer perceptions of the Sprint network, Sprint’s promotions and/or rebranding aimed at improving these customer perceptions, and the impact of the size of a mobile service provider’s distribution network on customer acquisition and retention, or that compare the impacts of any mobile service provider’s distribution networks on customer acquisition and retention.*

## RESPONSE:

As described in Applicants’ Public Interest Statement<sup>22</sup> and Mr. Draper’s declaration,<sup>23</sup> many current and potential subscribers have a poor perception of Sprint’s wireless network across several metrics. For example, Sprint is routinely ranked last among the national wireless carriers by Social or Net Promoter Score. Sprint is also often in last place in areas such as overall satisfaction, network reliability, network speed, and customer service. In particular, subscribers perceive Sprint as not “providing good value for money” and not “having appealing promotional offers.”

This negative perception is the result of several factors, including subscribers’ experience using Sprint’s wireless network.<sup>24</sup> For example, during the Network Vision build, Sprint’s replacement of cell sites caused network disruption that continues to affect perceptions of Sprint’s service to this day – particularly given Sprint’s ongoing underinvestment. Sprint’s own measure of its subscribers’ experience – using a metric referred to as “quality of experience” (or “QoE”) – shows that nearly [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] of postpaid subscribers have an unacceptable network experience. This poor experience creates a negative perception of Sprint’s network that subscribers communicate to other current or potential subscribers. Poor user experiences and negative perception, in turn, directly affect Sprint’s business through heightened churn, averaging approximately [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] for postpaid subscribers in FY 2017, and low share of gross adds, averaging approximately [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] of postpaid subscribers in FY 2017.

---

<sup>22</sup> Public Interest Statement at 96-97.

<sup>23</sup> See Draper Decl. at ¶20.

<sup>24</sup> See Public Interest Statement at 66-67.



Sprint has pursued all available options to address these difficulties, including promotional efforts aimed at offering low prices and more services (*e.g.*, data), and aggressive advertising and marketing efforts both nationally and targeted at specific geographies.<sup>25</sup> These efforts have been largely unsuccessful, however, and have not remedied the customer experience challenges that foster negative subscriber perceptions. As a result, Sprint continues to feel the effects of poor network perception.

Regarding the effect of distribution networks, a wireless carrier's distribution network plays a role in attracting and retaining subscribers. For example, distribution networks enhance branding and increase visibility to subscribers. Distribution networks also offer greater convenience and enhance customer service by facilitating direct interaction with subscribers, creating a point of contact for returns, device questions, and other support issues a subscriber may experience. These benefits are not necessarily related to a distribution network's size, but to its capabilities and geographic proximity to subscribers. Distribution networks also come at a cost, however, and investment in their expansion or improvement trades off with other potential investments that a carrier could make in its wireless network, pricing promotions, or human resources, for example. Sprint has been challenged by an undersized distribution network and lack of free cash to fund improvement or expansion.

Please also see the exhibits labeled "Response 24 – Exhibit 1," "Response 24 – Exhibit 2," "Response 24 – Exhibit 3," and Document Production.

## **25. REQUEST:**

*Provide all plans, analyses, and reports discussing the extent to which customers may substitute mobile wireless broadband services for fixed broadband services (and vice versa) and sales or marketing efforts that reflect such potential substitution.*

## **RESPONSE:**

Please see Document Production.

---

<sup>25</sup> See *e.g.*, Draper Decl. at ¶¶4, 8, 16-20.

## **26. REQUEST:**

*Mr. Saw states in his declaration that Sprint is “focusing on densification and optimization of our 4G LTE footprint in metropolitan and suburban areas to improve network experience, building out new cell sites to expand coverage and deploying massive MIMO equipment that will deliver 5G LTE capacity and launch 5G in our top markets.” (Saw Declaration, para. 11).*

*Provide all documents discussing:*

- a. the current number of sites (macro and small cells);*
- b. the planned densification and optimization of Sprint’s LTE footprint, including coverage and site expansion, as well as Sprint’s plans to transition from 2G/3G and planned VoLTE coverage;*
- c. Sprint’s potential building of MIMO sites;*
- d. the expected number of mini-macros and strand-mount small cells by 2021; and*
- e. the expected number of “MagicBox” femtocells by 2021.*

## **RESPONSE:**

Please see Document Production.

## **27. REQUEST:**

*Provide all stand-alone Sprint 5G deployment plans including non-board-approved plans, analyses, and reports that address:*

- a. the number of 5G sites projected from 2018 to 2024 (Saw Declaration, para. 17);*
- b. the spectrum bands and amount of spectrum to be used for 5G, including the transition from 4G LTE in those bands to 5G as well as repurposing bands with older technologies to 5G (Saw Declaration, paras. 22-24); and*
- c. how Sprint expects to overcome the 5G coverage challenges as predicted by 2024 by: (i) refarming its 800 MHz spectrum and deploying “split mode LTE+5G Dual Connect functionality”; (ii) deploying additional coverage sites; (iii) utilizing future smart antenna technologies; and (iv) alternate methods.*

## **RESPONSE:**

Please see Document Production.

## **28. REQUEST:**

*Provide all documents discussing Sprint's plans to develop its rural networks for 2018 through 2024, including:*

- a. network expansion plans, including specific locations by Relevant Area and related timetables;*
- b. strategies involving the use of unlicensed spectrum;*
- c. relationships with rural service providers, including affiliated entities, if any, including any partnership arrangements and initiatives; and*
- d. plans related to retail store expansion in rural areas, including the number of new retail stores expected to be operating in rural areas in 2019, 2020, 2021.*

## **RESPONSE:**

Please see Document Production.

## **29. REQUEST:**

*The Applicants state that, "[i]n many rural areas there are currently no high-speed broadband alternatives, so the Transaction would introduce a high-speed alternative to DSL and satellite." (Evans Declaration, para. 256). Provide a definition of "rural area." Submit all documents related to 5G deployment for each year from 2019 to 2024 in rural areas for standalone T-Mobile, standalone Sprint, and New T-Mobile, and provide a detailed explanation of how the merger increases the incentive and ability of New T-Mobile to deploy rural high-speed broadband in comparison to standalone Sprint.*

## **RESPONSE:**

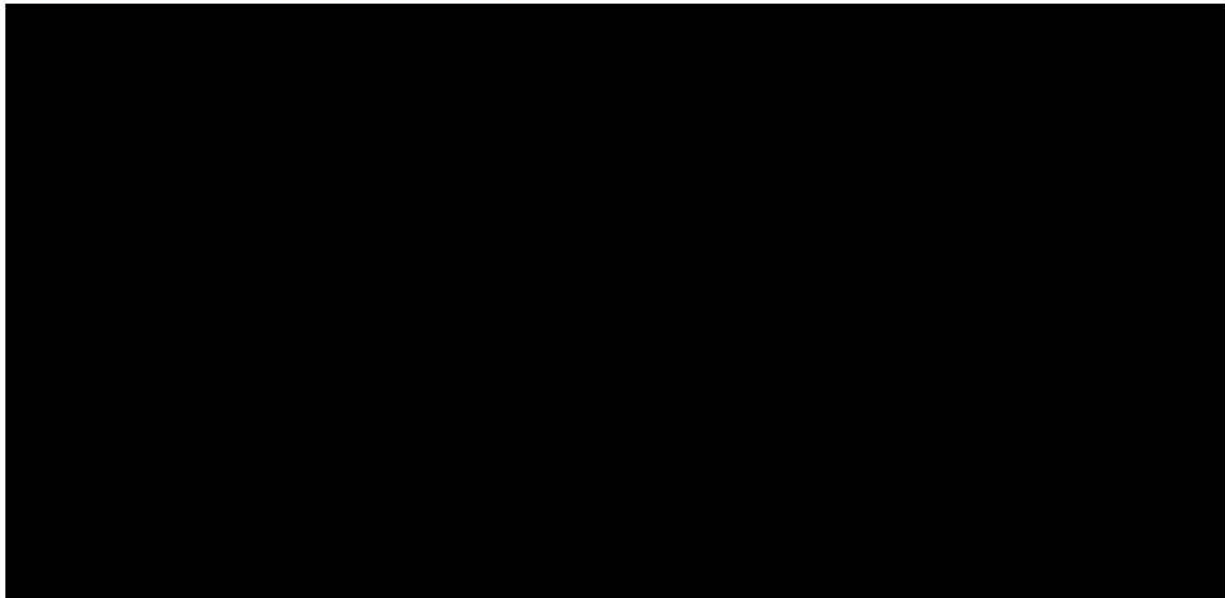
For internal purposes, Sprint defines "rural area" as any one square kilometer containing 400 POPs or fewer. However, for purposes of the Public Interest Statement, Sprint and T-Mobile utilized the definition of "rural area" employed by the FCC in the 2018 Broadband Deployment Report,<sup>26</sup> which relies on designations provided in the 2010 Census. Under that definition, the term "rural" encompasses all population, housing, and territory not included within an urban area. For more information about the definition of a "rural area" and for information regarding T-Mobile and New T-Mobile, please see T-Mobile Response to Request 29.

---

<sup>26</sup> *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, 33 FCC Rcd 1660, 1716 (2018).

Regarding standalone Sprint, Sprint does not anticipate deploying high-speed broadband covering significant portions of rural areas absent the transaction. As explained in the declaration of John C. Saw, Sprint's current network footprint lacks the geographic coverage of the larger wireless carriers. Sprint has and will continue to rely on 2.5 GHz spectrum to carry most data-intensive traffic, and Sprint's 5G deployment will be on its 2.5 GHz spectrum rather than low band spectrum. 2.5 GHz spectrum can provide large amounts of capacity and high throughput where it is deployed, but it has much poorer propagation characteristics than low-band spectrum such as 600 MHz spectrum. Signals on 2.5 GHz spectrum cannot travel as far from a cell site or penetrate buildings as well as low-band spectrum. Therefore, subscribers are more likely to experience coverage gaps and a less consistent data experience than a similar network of cell sites built with low-band spectrum. As shown in the coverage map below, Sprint's current 2.5 GHz coverage (orange) is even more limited than its total LTE footprint (yellow) and does not reach most rural areas.

**[BEGIN HIGHLY CONFIDENTIAL]**



**[END HIGHLY CONFIDENTIAL]**

2.5 GHz spectrum must be built out very densely if it is to provide wide areas of coverage and consistent user experience. However, building out 2.5 GHz densely enough to support a ubiquitous nationwide 5G network would be very challenging, expensive, and impractical for Sprint as a standalone company, particularly in lower-population and rural areas outside of major metropolitan areas. Sprint's 5G deployment plan will focus on metropolitan areas, including

Sprint's nine launch cities.<sup>27</sup> Without sufficient customer scale or population density to justify investment, 2.5 GHz cannot adequately serve alone as a *ubiquitous* coverage layer in a nationwide 5G network. In contrast, New T-Mobile will have a highly complementary spectrum portfolio with both low-band and 2.5 GHz spectrum. With a robust low-band coverage layer using 600 MHz spectrum, the new network will provide 5G coverage across the country. This extensive coverage layer and greater overall subscriber scale will justify investing to build out 2.5 GHz spectrum in more places, including in rural areas, providing much greater capacity and throughput. Thus, New T-Mobile will have the ability to introduce high speed alternatives to broadband in rural areas.

Please also see Document Production.

### 30. REQUEST:

*For any Relevant Service or any Relevant Product in any Relevant Area, provide all documents discussing:*

- a. buyer substitution responses to price or product changes, including all analyses of elasticities of demand (own-price elasticities and cross-price elasticities with respect to competitors, and the elasticity of demand for the industry as a whole (aggregate elasticity of demand)), and any estimates of diversion ratios/rates among competing suppliers of the Relevant Product or Relevant Service;*
- b. churn and subscriber acquisition and retention, including:*
  - i. churn data, including the correlation of churn with quality, length of contract commitments, national footprint, price, the expected impact of migration to new technologies on churn, type of customer, and any other factors;*
  - ii. data or studies indicating that a customer left or switched to the Company because of pricing, network quality, customer service, or the absence or availability of particular services or devices (including data on subscribers lost or gained), and any consumer surveys undertaken about consumer substitution across mobile wireless service providers;*
  - iii. data or studies on switching costs or customer inertia or both;*
  - iv. the Company's experience or success in retaining customers, including examination of customer tenure and the value or net present value of a customer or type of customer;*
  - v. the Company's experience or success in obtaining customers through marketing or promotions targeted at particular mobile wireless service providers, particular geographic areas (including local and regional promotions), or particular wireless devices or types of customers (including the offers made and the amount*

---

<sup>27</sup> Saw Decl. at ¶17.

- spent on the marketing effort, the number of new subscribers gained, churn rates for such subscribers, and revenue realized by the Company);*
- vi. customer acquisition costs, including per gross addition costs;*
  - vii. the characteristics of consumers who want to purchase standalone services or bundled services; and*
  - viii. descriptions or analyses of bidding results for enterprise or other large customers.*
- c. any attempts to win customers from, or stem losses to, other mobile wireless service providers;*
  - d. share of sales or revenues of the Company or any of its competitors, including subscriber counts, gross additions, deactivations, and net additions; and*
  - e. share of sales through various distribution channels (e.g., own sales versus sales through exclusive or non-exclusive third parties) of the Company (by channel and by name for each third party) and its competitors.*

**RESPONSE:**

Please see Document Production.

**31. REQUEST:**

*Provide all documents that employ, discuss, or calculate customer lifetime value (CLV) or any other concept related to the present discounted value (e.g., active customer value, lifetime customer value, average customer value) to the Company of acquiring a new customer for any Relevant Service. State, describe in detail, and provide documents sufficient to show the Company's most current and best estimate of CLV or present discounted value to the Company of acquiring a new customer for each Relevant Service, including a description of how the calculations were performed and overall methodology, including the parameters used in the determination of such value. Provide all data upon which the calculations are based and the programs used for the calculations. If the Company employs more than one concept related to the value of a customer, the Company's response should provide the calculation and description for each approach, and a description of how the Company uses each approach in the ordinary course of business.*

**RESPONSE:**

To determine the value of its customers, Sprint uses the "customer 'lifetime' value" or "CLV" methodology. CLV measures the discounted cash flow generated over the life (or other specified timeframe) of a customer.

[BEGIN HIGHLY CONFIDENTIAL]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [END HIGHLY CONFIDENTIAL]

Documents further outlining Sprint’s use and calculation of CLVs are attached as exhibits hereto labeled “Response 31 – Exhibit 1” through “Response 31 – Exhibit 21.”

Please also see Document Production.

**32. REQUEST:**

*Provide all documents discussing Sprint’s pricing decisions for any Relevant Product or Relevant Service in any Relevant Area and in the United States as a whole, including, but not limited to discussions of: (1) pricing plans, including unlimited; (2) pricing policies; (3) pricing forecasts; (4) pricing strategies; (5) pricing analysis; (6) introduction of new pricing plans or promotions, including local promotions and their determinants, and expected or actual impact; (7) tiered pricing, and expected or actual impact; (8) pricing decisions relating to each Relevant Service and Relevant Product; (9) which prices, if any, are set through individualized negotiations, and the criteria and process use to determine rates; and (10) any other factors considered in how the Company prices each Relevant Product or Relevant Service in each Relevant Area.*

**RESPONSE:**

Please see Document Production.

### 33. REQUEST:

*Identify each major pricing, plan, or promotional action taken by Sprint since January 1, 2012, and for each:*

- a. explain and provide documents sufficient to show Sprint's strategic rationale for the pricing, plan, or promotional action; and*
- b. provide all plans, analyses, or reports relating to or analyzing the business impacts of the pricing, plan, or promotional action, including retrospectively.*

### RESPONSE:

Internal Sprint documents appended hereto as exhibits labeled "Response 33 – Exhibit 1" through "Response 33 – Exhibit 10" describe various major wireless service plans and promotions Sprint has offered to customers. These offerings include the following pricing plans and strategies:

#### Postpaid Plans

Plan	Description	Dates in Market
Everything Data	Unlimited text, unlimited data, and bucketed minutes featuring unlimited wireless minutes	09/2008 – 07/2013
My Way	Unlimited voice and unlimited text with 1GB or unlimited data with a multiline discount	07/2013 – 07/2016
Framily	Unlimited voice, unlimited text with 1GB, 3GB, or unlimited data – featuring multiline discounts across accounts and households	01/2014 – 10/2014
\$50/\$60 Unlimited	Unlimited voice, text, and data – featuring targeted device strategies	08/2014 – 02/2016
Family Share Pack	Unlimited voice, unlimited text, and buckets of data to share	08/2014 – 02/2016
Family Unlimited	Unlimited voice, text, and data with a multiline discount	12/2014 – 10/2015
\$70/\$75 Unlimited	Unlimited voice, text, and data with a multiline discount	10/2015 – 10/2016
Better Choice	Unlimited voice, unlimited text, and buckets of data to share	02/2016 – 04/2017



50% Off Promotional	Unlimited voice, text, and bucketed shared data – featuring acquisition targeted promotional lines	11/2015 – 01/2017
Unlimited Freedom	Unlimited voice, text, and data with a multiline discount	08/2016 – 07/2018
Unlimited Freedom Promotional	Unlimited voice, text, and data with a multiline discount – featuring acquisition promotional lines	11/2016 – 07/2018
Unlimited Basic	Unlimited voice, text, and data, with other features	07/2018 – current
Unlimited Plus	Unlimited voice, text, and data, with 1080p HD video streaming and other features	07/2018 – current
Unlimited Premium	Unlimited voice, text, and data, with the features of Unlimited Plus, as well as additional features	08/2018 – current

### **Prepaid Plans**

<b>Plan</b>	<b>Description</b>	<b>Dates in Market</b>
Boost Unlimited Select	Unlimited voice and text with data ranging from 1 GB to 5 GB	09/2014 – 09/2015
Boost 6.0	Unlimited voice and text with data ranging from 2.5 GB to unlimited	01/2016 – 06/2016
Boost 7.0	Unlimited voice and text with LTE data ranging from 1 GB to unlimited	08/2016 – 12/2016
Virgin R035	Unlimited voice and text with 2 GB of data	Pre-2013 – 07/2015
Virgin Unlimited	Unlimited voice and texts with data ranging from 2.5 GB to 3.5 GB	10/2014 – current

In addition to the major price plans identified above, Sprint also undertakes promotional activities. For example, Sprint sometimes offers a discount off of rate plans for consumers who “bring their own device” or purchase a device at the full undiscounted rate. Sprint also sometimes offers customers an unlimited plan for a period of time at no additional charge. Promotional activities are typically undertaken to drive gross adds and store traffic. Promotions are often device centric and include BOGO offers, port-in credits (*e.g.*, \$100 off a device when porting a number to Sprint), free devices for additional lines, etc. Promotions can also include family offers.

In recent years, Sprint has focused on a pricing and promotions strategy to gain market share. The goal was to retain existing subscribers and attract new ones by offering discounted pricing plans and promotions. Sprint principally targeted its advertising and promotional campaigns at Verizon and AT&T because they represent the largest sources of opportunities to gain new subscribers. For example, several years ago, Sprint offered its “50% Off Promotional” plan, an aggressive effort to attract new subscribers from these competitors.

The various plans Sprint has offered in recent years evolved in response to a range of factors, including consumer response, competitor offerings, network planning, and Sprint’s financial performance and planning. The primary objective nonetheless remained gaining market share by offering lower prices.

There are limits, however, to such a strategy. In choosing a wireless service, consumers look not only at price but also service quality. In addition, Sprint’s aggressive pricing contributed to underinvestment in its network. This has placed Sprint at a competitive disadvantage, especially compared to AT&T and Verizon, which have had the scale and resources to invest billions in their networks throughout the country. Sprint’s pricing strategy has not been enough to offset the real or perceived quality differences between its network and its competitors’ networks. Sprint thus has not achieved sustained subscriber growth and continues to have the highest churn rate among major carriers.

Sprint has plans to invest more in its network over the next three years. **[BEGIN HIGHLY CONFIDENTIAL]** [REDACTED]

[REDACTED] **[END HIGHLY CONFIDENTIAL]** At the same time, absent the Proposed Transaction, Sprint will continue to face a lack of scale and other significant challenges competing in the marketplace, particularly with AT&T and Verizon.

Please also see Document Production.

### **34. REQUEST:**

*For the dates January 1 and July 1 in the years 2012 through 2018, and for each brand under which the Company sells mobile wireless services, identify the 10 best-selling mobile wireless services pricing plans for the United States as a whole, as measured by subscribers. For each pricing plan identified: (i) state the number of total subscribers to each plan; (ii) state the number of new subscribers added in the prior six months; (iii) describe and identify the price of and all features and services encompassed in the plan, including but not limited to, the number of included minutes and data services, whether mobile wireless services can be shared with others, any promotions offered to attract new subscribers to the plan, and any charges for usage*

*in excess of the maximum allowed under the plan; and (iv) provide the ARPU for each such pricing plan.*

**RESPONSE:**

For data on prepaid plans, please see the exhibit labeled “Response 34 – Exhibit 1.” For data on postpaid plans, please see the exhibit labeled “Response 34 – Exhibit 2.” Information responsive to 34(iii) for postpaid plans is contained in “Response 34 – Exhibit 3” and “Response 34 – Exhibit 4.”

Note that Sprint does not track ARPU by pricing plan in the ordinary course of business.

**35. REQUEST:**

*The Applicants assert that New T-Mobile will bring disruptive Un-carrier choices for enterprise business and government customers. According to the Public Interest Statement, the combined company “will be able to integrate the Sprint wireline assets to diversify its enterprise offerings and make available fixed broadband products, cloud computing services, network security offerings, or other complementary business lines.” With its 5G network, the Applicants claim that “New T-Mobile will be able to support and spur the broad spectrum of commercial IoT applications of the future.” (Public Interest Statement, pages 73-74). Provide all plans, analyses, and reports discussing enterprise and government segments and services, including, but not limited to, whether and how New T-Mobile will offer flexible and inventive plans and pricing, as opposed to the pricing plans of a standalone Sprint.*

**RESPONSE:**

Please see Document Production. For information related to New T-Mobile, see T-Mobile Response to Request 35.

**36. REQUEST:**

*For any Relevant Service or any Relevant Product in any Relevant Area, provide all documents (including any surveys conducted by Sprint or by any third party) that discuss:*

- a. the competitive positioning of the Company and other mobile wireless service providers (e.g., price and quality relative to others);*
- b. how reliability and reputation affect competition or potential competition; or*

- c. *how consumers or enterprise customers or competitors view and value mobile wireless services or products offered by the Company or by other mobile wireless service providers, including:*
- i. *their perceptions of customer service, network quality, network coverage plans and features;*
  - ii. *the impact of not offering particular wireless services or devices;*
  - iii. *the impact of pricing on decisions to purchase any Relevant Service or any Relevant Product;*
  - iv. *the impact of variation in subscribers' usage patterns across different pricing plans and devices;*
  - v. *the impact of roaming; and*
  - vi. *the impact of being able to use products and services internationally.*

**RESPONSE:**

Please see Document Production.

**37. REQUEST:**

*Provide all documents discussing the possible effects of the Proposed Transaction on roaming or discussing New T-Mobile's offering of roaming arrangements. Further, identify any person (including mobile wireless service providers) to whom the Company provides, pursuant to a current roaming agreement, each Relevant Service for use by that person's subscribers in any Relevant Area. For each person whose subscribers used the Company's Relevant Service, provide all documents related to the negotiation of any associated agreements, and list, in csv format, on a monthly basis and for each Relevant Area in which the Relevant Service is provided:*

- a. *the name of the person;*
- b. *the total number of subscribers of the person using the Company's Relevant Service;*
- c. *the total minutes and the total megabytes, as relevant, of the Company's Relevant Service used by the person's subscribers;*
- d. *the total amount, the price per minute, and the price per megabyte, that the Company charged the person for the Company's Relevant Service used by that person's subscribers; and*
- e. *the Company's total sales of roaming services, in dollars, minutes of use, and in megabytes of data used separately for each mobile wireless technology.*

## RESPONSE:

Data responsive to Request 37 is included in .csv files labeled “Response 37 – Exhibit 1” through “Response 37 – Exhibit 5” in the accompanying media. Please also see Document Production. For information regarding New T-Mobile, see T-Mobile Response to Request 38.

## 38. REQUEST:

*The Applicants claim that “Sprint must rely on costly roaming agreements to provide services to its customers when they travel outside of its network footprint. Those roaming agreements typically provide Sprint customers with an inferior user experience to what Sprint provides on its own network.” (Public Interest Statement, page 95). Describe in detail and provide all documents regarding Sprint’s roaming agreements and expected future roaming agreements and projected costs.*

## RESPONSE:

### *Sprint Roaming Agreements*

Sprint engages in roaming agreements to provide both voice and data coverage throughout the United States. Sprint’s roaming agreements are divided between what the Company characterizes as Preferred and Non-Preferred Partners. Preferred Partners generally offer rates substantially below those of Non-Preferred Partners. Because Non-Preferred Partners are the only carriers offering service in large geographic portions of the United States, however, Sprint continues to incur substantial charges from these carriers. Despite efforts to use Preferred Partners, a majority of Sprint’s roaming charges continue to be on Non-Preferred Partners.

[BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] and other regional carriers. (A list of Preferred Partners follows below.) The roaming agreement with [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] is also considered a Preferred Partner roaming agreement. [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] are Non-Preferred Partners. Sprint purchases voice and 3G data roaming from [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL], but no LTE data. Sprint’s roaming agreement with [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] gives its subscribers access to 4G LTE data, but to control roaming costs, subscribers are limited to speeds of [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL]. [END CONFIDENTIAL] Sprint entered into a roaming agreement with T-Mobile for 4G LTE data that became effective the day the Proposed Transaction was announced.

In order to address the high roaming costs incurred with its Non-Preferred Partners, Sprint engages in Off-Network Data Governance with Non-Preferred Partners. Data Governance restricts total data usage and data speeds. Network subscribers who roam with Non-Preferred Partners are capped at [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] per month of data and throttled to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. Without these data governance measures, Sprint's roaming costs with [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] times higher and [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. Network subscribers who roam with Preferred Partners are not subject to data usage restrictions and the speed limits imposed are much higher than for Non-Preferred Partners. Currently, subscribers are limited to [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] with Preferred Partners (speeds about [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] are considered "LTE speed.")

### *Sprint's Roaming Costs*

Detailed information on Sprint's roaming costs is contained in the exhibits labeled "Response 38 – Exhibit 1" through "Response 38 – Exhibit 5." Sprint's 2018 budget includes roaming costs of approximately [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. Data roaming comprises [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of the budget and voice comprises [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. By using Data Governance measures, Sprint was able to reduce its overall roaming costs by approximately [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] between 2013 and 2018.

As of August 2018, Non-Preferred Partner data usage represented approximately [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of total traffic, but [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of Sprint's data roaming expense. Sprint pays more than [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] times more to carry data roaming traffic on [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] networks as compared to its own network infrastructure. In August 2018, Sprint's Non-Preferred Partner blended average data roaming rate was [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. Preferred Partners charge around [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. The Company also pays more than [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] times more to carry voice roaming traffic on [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] network compared to its own infrastructure.

### *Sprint's Future Roaming Agreements and Projected Costs*

In April 2018, Sprint noted that further expense reductions would require compromises to the customer experience, namely lower roaming speeds or reduced usage caps.

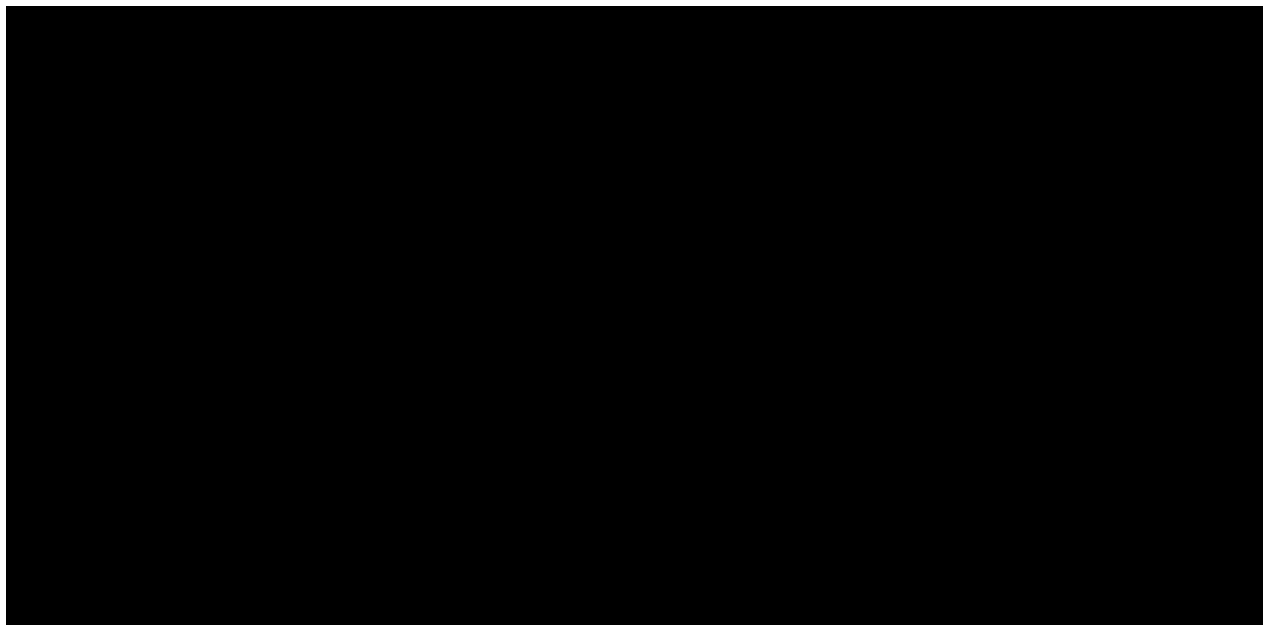
Sprint's focus for future roaming agreements is to: (1) negotiate low-cost agreements with rural partners, and leverage these wherever possible; (2) use [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] where low-cost rural partners are not available; and (3) aggressively manage data consumption in [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] footprint. Sprint recently executed a roaming agreement with [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] that is effective retroactive to July 2018. The terms involve an [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] commitment over 24 months. The data rate is set at [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] for the first [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] used on [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] for usage between [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] and then the rate increases to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of use during the term. Going forward, Sprint intends to continue to try and bid [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] against each other to reduce the Company's roaming costs. Sprint's roaming contract with [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] ends on [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL], and [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] bulk purchasing window for roaming data will be open until [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL]. [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] The Company will attempt to use this window to increase competitive bidding for LTE/VoLTE traffic. Nevertheless, Sprint's future roaming agreements will still require reliance on Non-Preferred Partners to supply its customers with roaming services, and the rates charged by Non-Preferred Partners are expected to remain significantly higher than Preferred Partners. In addition, Sprint still anticipates the need to rely on Data Governance in order to maintain the roaming cost reductions it has achieved.

### *Sprint's Roaming Agreement with T-Mobile*

Sprint and T-Mobile entered into a roaming agreement that became effective the date the Proposed Transaction was announced. The roaming agreement will remain in effect until the earlier of [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] after the closing of the Proposed Transaction or [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] from the date on which

Sprint and T-Mobile abandon the Proposed Transaction if the transaction does not go forward. The agreement gives Sprint subscribers access to 4G LTE data on T-Mobile's network, but has a number of limitations for Sprint subscribers. First, the agreement does not include voice or 5G data. Second, the agreement limits the number of simultaneous Sprint subscribers that can access the T-Mobile network at one time to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED]. [END HIGHLY CONFIDENTIAL] Third, the agreement does not permit Sprint access to [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [REDACTED] [END HIGHLY CONFIDENTIAL] sites where T-Mobile has identified congestion. Fourth, the agreement has significant constraints on the T-Mobile [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] sites that Sprint subscribers are allowed and able to access. Sprint cannot roam on T-Mobile's [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] spectrum in areas outside of Sprint's footprint unless all T-Mobile sites and sectors are uncongested. As a result, Sprint anticipates that the roaming agreement will be utilized most often to address in-footprint coverage issues, and Sprint expects to continue to rely on its other Preferred and Non-Preferred roaming partners in order to offer nationwide coverage. Under the T-Mobile roaming agreement, Sprint will pay [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [REDACTED] [END HIGHLY CONFIDENTIAL] months after the launch of MOCN ("Initial Rate Period"), [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] months following the end of the Initial Rate Period, and [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] for the remainder of the agreement term.

[BEGIN HIGHLY CONFIDENTIAL]







**[END HIGHLY CONFIDENTIAL]**

Please also see Document Production.

**39. REQUEST:**

*The Applicants assert that “New T-Mobile has the same competitive incentives with respect to, and will bring the same network benefits to, its relationships with MVNOs.” In particular, the Applicants contend that “New T-Mobile will have significant added network capacity, and therefore will have no incentive to impair MVNOs’ ability to put subscribers on New T-Mobile’s network.” The Applicants further maintain that “New T-Mobile will encourage the launch of new MVNOs that can offer unique value propositions or better reach unique customer segments.” (Public Interest Statement, pages 123- 24). Provide all documents discussing MVNOs as they relate to Sprint and all documents relating to plans or projections for New T-Mobile, including any analysis of the competitive effects of MVNOs in the mobile wireless marketplace, and analysis of the costs and revenues of customers served through an MVNO.*

**RESPONSE:**

Please see Document Production. For information regarding T-Mobile and New T-Mobile, see T-Mobile Response to Request 39.

**40. REQUEST:**

*Provide a complete list of MVNOs that have provided or are providing mobile wireless service using Sprint’s network, and explain in detail how the Proposed Transaction would affect current MVNO agreements. Provide all documents discussing the possible effects of the Proposed Transaction on wholesale charges or discussing New T-Mobile’s offering of wholesale arrangements. Further, identify any person (including mobile wireless service providers) to*

*whom the Company provides, pursuant to a wholesale agreement, each Relevant Service for use by that person's subscribers in any Relevant Area. For each person whose subscribers used the Company's Relevant Service, provide all documents related to the negotiation of any associated agreements, and list, in csv format, on a monthly basis and for each Relevant Area in which the Relevant Service is provided:*

- a. the name of the person;*
- b. the total number of subscribers of the person using the Company's Relevant Service;*
- c. the total minutes and the total megabytes, as relevant, of the Company's Relevant Service used by the person's subscribers;*
- d. the total amount, the price per minute, and the price per megabyte, that the Company charged the person for the Company's Relevant Service used by that person's subscribers; and*
- e. the Company's total sales of wholesale services, in dollars, minutes of use, and in megabytes of data used separately for each mobile wireless technology.*

## **RESPONSE:**

MVNOs using Sprint's network are listed below. Additional data responsive to Response 40 are contained in the accompanying media as "Request 40 – Exhibit 1" and "Request 40 – Exhibit 2."<sup>28</sup> Each of Sprint's operative wholesale agreements contains pricing terms with some wholesale customers having negotiated rates based on usage (*e.g.*, individual rates for MOUs, megabytes of data, and SMS messages), while others contain negotiated rates that provide for a bundled or blended rate for all wireless services provided. For example, the pricing schedules for a specific wholesale customer often include multiple bucket plans where the wholesale customer pays Sprint a Monthly Recurring Charge for an included number of units shared across minutes and data where the wholesale customer's subscriber can utilize the number of units as either minutes, data, or some combination of the two. Because the rates Sprint charges for minutes and data are not uniform across wholesale customer accounts and cannot be compared easily due to the different pricing approaches, responding to the FCC's request in 40(d) to provide "the total amount, the price per minute, and the price per megabyte, that the Company charged the person for the Company's Relevant Service used by that person's subscribers" is unduly complicated and burdensome.

As such, Sprint is providing its average revenue per wholesale subscriber in Exhibit 2 as a proxy for the total amount each wholesale subscriber was charged by Sprint.

As discussed in T-Mobile's Response to Request 39, the Proposed Transaction will benefit MVNO customers by creating a substantially improved network with much greater capacity

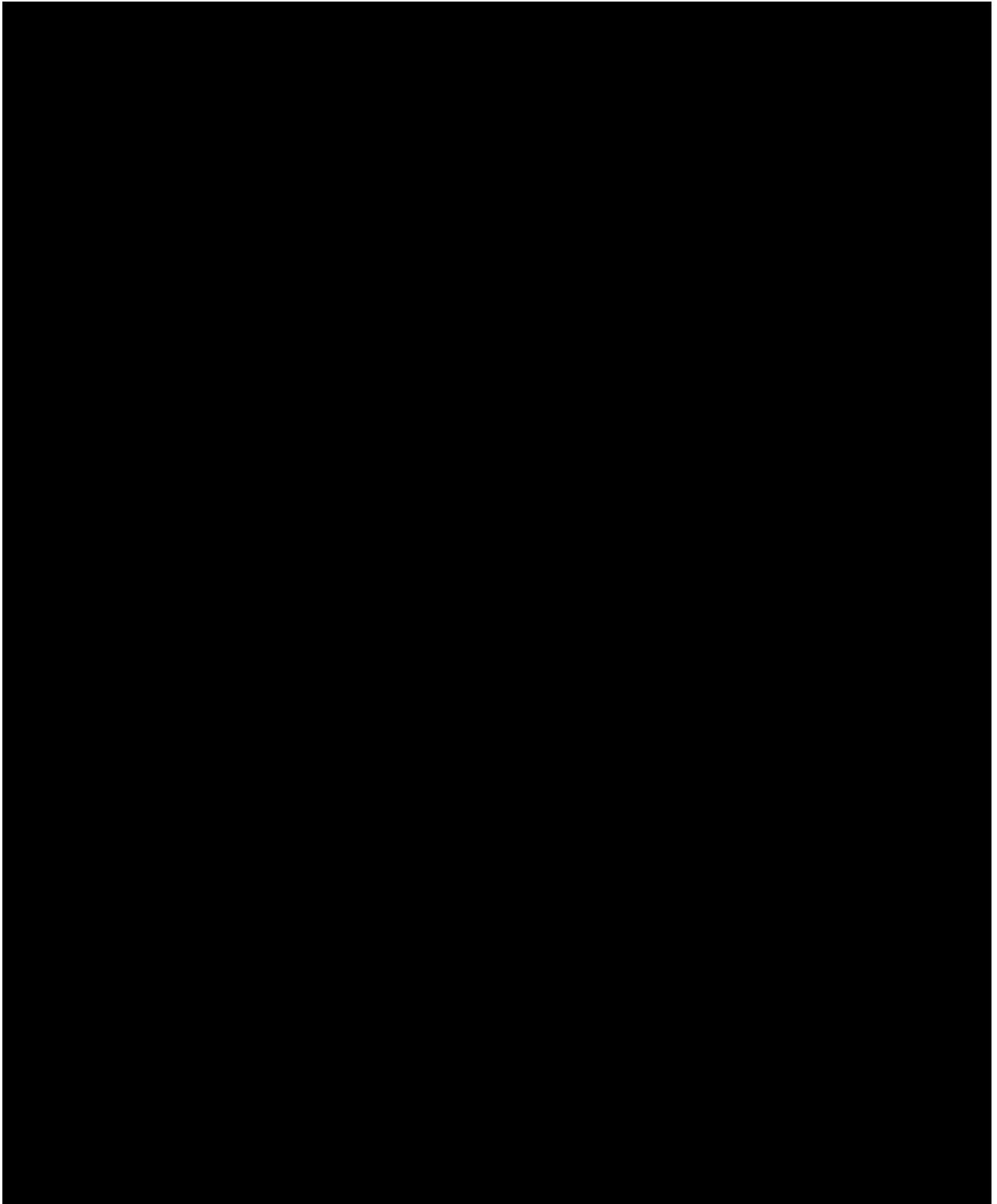
---

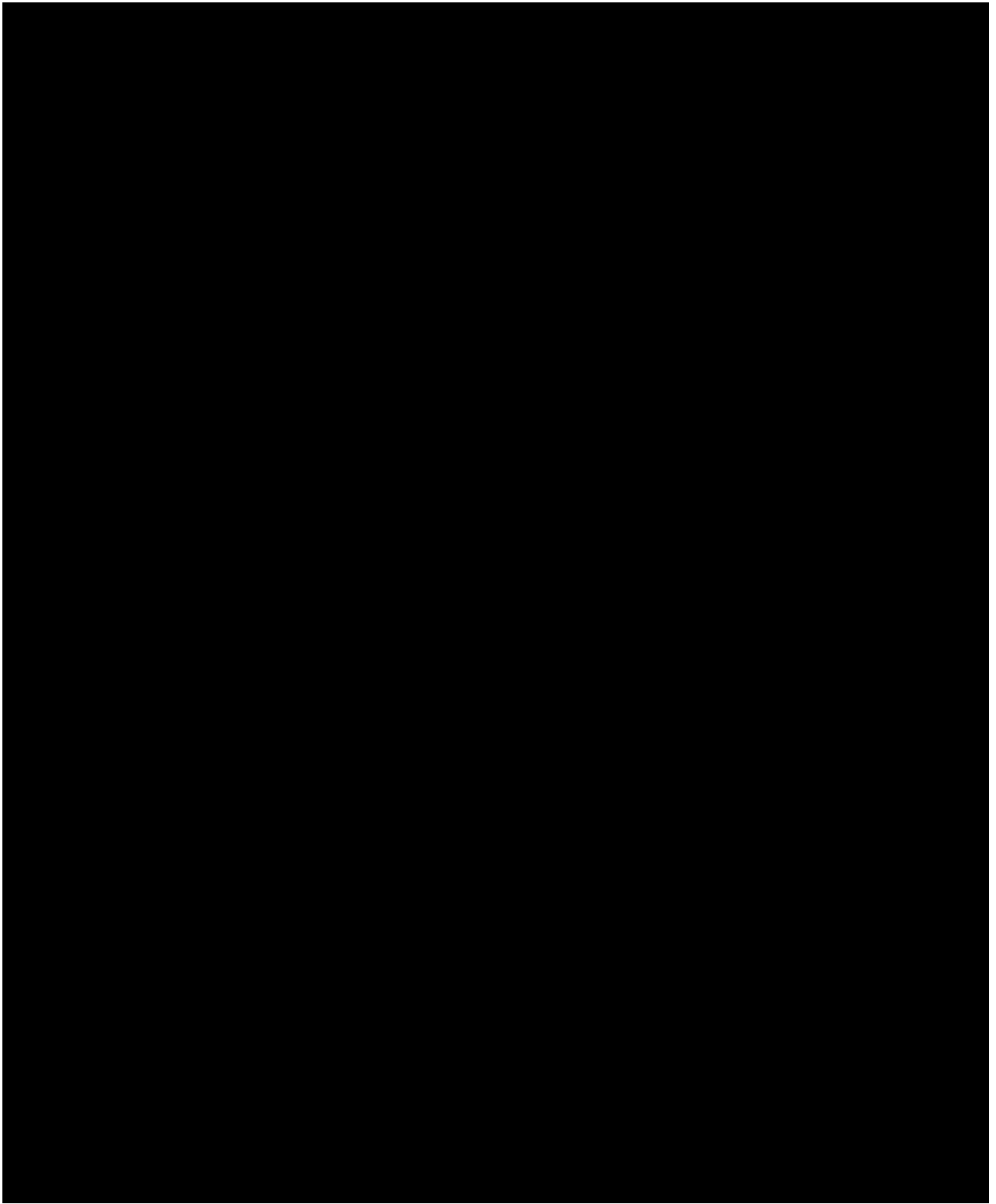
<sup>28</sup> Exhibit 1 provides end-of-period subscribers by MVNO or wholesale customer by month and by CMA. Exhibit 2 provides information on usage and revenue and revenue per subscriber by MVNO or wholesale account.

than either Sprint or T-Mobile could offer on its own. In terms of existing MVNO/wholesale agreements, Sprint's wholesale contracts with MVNOs are typically **[BEGIN CONFIDENTIAL]** [REDACTED] **[END CONFIDENTIAL]** years. With very few exceptions, Sprint's MVNO contracts do not permit either Sprint or the wholesale customer to terminate the contract due to a change in control of Sprint. Some larger MVNO customers also have contractual Successor Network rights that require that if the Sprint retail customer base is migrated to a new network, Sprint would be obligated to also migrate the MVNO subscribers. Sprint's MVNO contracts will continue post-transaction, and Sprint understands that New T-Mobile intends to honor existing MVNO contracts as well as provide a network migration path to existing Sprint customers utilizing network technology that will be impacted by the integration of Sprint's and T-Mobile's networks.

**[BEGIN HIGHLY CONFIDENTIAL]**









**[END HIGHLY CONFIDENTIAL]**

Please also see Document Production.

**41. REQUEST:**

*The Applicants assert that New T-Mobile would use the existing T-Mobile network as its anchor, thereby enabling New T-Mobile to migrate Sprint customers to the existing T-Mobile network within three years without degrading the user experience for LTE. The Applicants state that: (1) Sprint subscribers with compatible devices would be able rapidly to convert to the New T-Mobile network; (2) New T-Mobile would migrate CDMA voice users to VoLTE; and (3) the 1900 MHz PCS band would allow a seamless integration of Sprint's existing customers onto T-Mobile's network. (Public Interest Statement, pages 38-39).*

- a. describe in detail how this migration plan would be accomplished within three years without degrading the user experience for LTE;*
- b. provide all documents discussing or relating to the expected cost of achieving the migration plan, and all documents discussing the customer migration plan, including the transition of MVNO customers and Lifeline customers;*
- c. describe in detail the plans for T-Mobile and New T-Mobile to sunset GSM and HSPA/HSPA+, and for Sprint and New T-Mobile to sunset CDMA 1x voice and EV-DO Rev. A technologies; and*
- d. describe in detail New T-Mobile's transition plans for M2M services offered over its 2G network.*

**RESPONSE:**

Part 41(c) of the Request asks that Sprint “describe in detail the plans for . . . Sprint and New T-Mobile to sunset CDMA 1x voice and EV-DO Rev technologies.” [BEGIN HIGHLY

CONFIDENTIAL] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]. [END

HIGHLY CONFIDENTIAL]

For responses to the remaining portions of this request, please see Document Production. For information regarding T-Mobile and New T-Mobile, see T-Mobile Response to Request 41.

**42. REQUEST:**

*In his declaration, Mr. Ewens states that “Sprint customers will receive more value for less money shortly after close and with minimal disruption as we enable their phones to access the T-Mobile network.” (Ewens Declaration, para. 8). Provide all plans, analyses, and reports discussing New T-Mobile’s cost savings for or quality benefits to Sprint customers. Discuss in detail how Sprint’s push-to-talk services, including in the enterprise and government market, would be affected by the Proposed Transaction.*

**RESPONSE:**

For information regarding cost savings and quality benefits that the Proposed Transaction will deliver to Sprint customers post-closing, as well as any post-closing information available regarding push-to-talk, please see T-Mobile Response to Request 42.

[BEGIN HIGHLY CONFIDENTIAL] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

---

<sup>29</sup> [BEGIN HIGHLY CONFIDENTIAL] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [END HIGHLY CONFIDENTIAL]





Sprint's devices. As of July 2018, about [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] of Sprint's devices would not be compatible with the MOCN feature. The MOCN-capable devices identified above can access at least one of the T-Mobile LTE data spectrum bands without requiring an over-the-air software update.

Note that the [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] devices identified above is higher than the estimated 20 million Sprint subscribers identified in the declaration of John C. Saw as being capable of accessing New T-Mobile's network soon after the closing of the transaction.<sup>30</sup> The 20 million estimate used in the Saw declaration is based on a 2017 view of devices for Sprint postpaid handset subscribers. The [BEGIN HIGHLY CONFIDENTIAL] [REDACTED] [END HIGHLY CONFIDENTIAL] devices identified above includes all devices across brands and channels as of July 2018. In addition, Sprint believes that the number of compatible devices will grow during the pendency of the Proposed Transaction.

For information discussing device transitions and how New T-Mobile will address non-compatible devices, see T-Mobile Response to Request 43. Please also see Document Production for materials relating to Sprint devices and forecasts.

#### 44. REQUEST:

*The Applicants claim that, in its initial three years, New T-Mobile will invest significantly more in network infrastructure, which "will translate into thousands of additional American jobs, as New T-Mobile will need to hire employees to build the new network; extend the Un-carrier customer care model to a wider subscriber base; and support growing services like in-home broadband and IoT. The result is that New T-Mobile will be jobs positive from its first year and beyond, with an initial increase relative to the combined companies' standalone of more than 3,000 jobs that increases to 11,000 jobs by 2024." (Public Interest Statement, pages 80-81). Provide all plans, analyses, and reports discussing the creation or loss of jobs if the Proposed Transaction were to be consummated.*

#### RESPONSE:

Please see Document Production. For information regarding New T-Mobile, see T-Mobile Response to Request 45.

---

<sup>30</sup> Saw Decl. ¶33.

**45. REQUEST:**

*Provide all documents discussing competition, pricing, or network investment in countries other than the United States, including, but not limited to, documents discussing comparisons between markets for wireless services in the United States and elsewhere.*

**RESPONSE:**

Please see Document Production.

**46. REQUEST:**

*The Applicants state that low-band spectrum “can support cell site operating radii of up to 18 miles”; mid-band spectrum cell site operating areas “would be reduced to approximately 4 miles”; and highband, mmW spectrum (above 20 GHz) is preferable in dense urban markets as “cell operating areas 12 are significantly less than half a mile.” (Public Interest Statement, pages 32-33). Provide all documents, including RF link budgets, assumptions, studies, and RF propagation models related to the operating radii of these spectrum bands.*

**RESPONSE:**

Please see Document Production.

**47. REQUEST:**

*Provide a detailed description of deployed backhaul by technology, number of sites for each technology, as well as link capacity available by technology. Explain the spectrum band(s) that Sprint uses for wireless backhaul and how that compares to fiber backhaul in terms of availability at sites, traffic carried, latency, and capacity. Discuss in detail the Applicants’ plans to upgrade the backhaul transport to support New T-Mobile’s projected increases in capacity and throughput.*

**RESPONSE:**

Attached as an exhibit labeled “Response 47 – Exhibit 1” is an Excel spreadsheet containing a list of all sites with deployed backhaul, including an identification of the technology used and the link capacity for that site.

Sprint's wireless backhaul uses the following spectrum bands: (1) Unlicensed – FCC 5.8 GHz and 24 GHz; (2) Licensed – Common Carrier 2.5 GHz, 6 GHz, 11 GHz, 14 GHz, 18 GHz, and 23 GHz; and (3) Lightly Licensed – Millimeter E-Band, 80 GHz. The availability of wireless backhaul options is limited by line-of-sight conditions; the suitability of structures/towers for installation of wireless backhaul antennas; zoning; and other limitations.

The availability of fiber backhaul is dependent upon the providers in any particular geographic market. The types of traffic carried over these backhaul links – voice and data – are the same on both wireless and fiber backhaul. Latency on wireless backhaul generally is slightly higher than fiber backhaul and, for microwave-based solutions, is directly related to the number of hops required to reach the site location. Capacity on wireless backhaul links varies from approximately 10 Mbps to 1 Gbps. Fiber backhaul is generally provisioned from 50 Mbps to 1 Gbps but can be greater under some circumstances.

Please also see Document Production. For information regarding New T-Mobile, see T-Mobile Response to Request 48.

#### **48. REQUEST:**

*To the extent not already provided, provide all documents cited in the Public Interest Statement and the attached declarations, and any data, documents or analyses provided to, reviewed by, or relied upon in preparing those declarations, grouped by declaration/Public Interest Statement.*

#### **RESPONSE:**

Please see Document Production and T-Mobile Response to Request 49. Documents responsive to this request are included in “Request 48 – Exhibit 1” through “Request 48 – Exhibit 9,” have otherwise been provided, or are included in Document Production.