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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 19b-4

File No.* SR - 2019 - * 082
Amendment No. (req. for Amendments *)

Filing by Cboe Exchange, Inc.

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial *	Amendment *	Withdrawal	Section 19(b)(2) *	Section 19(b)(3)(A) *	Section 19(b)(3)(B) *
☑	☐	☐	☐	☑	☐

Rule

☐ 19b-4(f)(1)	☐ 19b-4(f)(4)
☑ 19b-4(f)(2)	☐ 19b-4(f)(5)
☐ 19b-4(f)(3)	☐ 19b-4(f)(6)

Pilot ☐

Extension of Time Period for Commission Action * ☐

Date Expires *

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010

Section 806(e)(1) * ☐

Section 806(e)(2) * ☐

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934

Section 3C(b)(2) * ☐

Exhibit 2 Sent As Paper Document ☐

Exhibit 3 Sent As Paper Document ☐

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

The Exchange proposes to amend its Fees Schedule in connection with migration.

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * Corinne

Last Name * Klott

Title * Assistant General Counsel

E-mail * cklott@cboe.com

Telephone * (312) 786-7793

Fax

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

Date 10/02/2019

By Corinne Klott

(Name *)

(Title *) Assistant General Counsel

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

cklott@cboe.com

Required fields are shown with yellow backgrounds and asterisks.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

Form 19b-4 Information * Add Remove View	The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.
Exhibit 1 - Notice of Proposed Rule Change * Add Remove View	The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)
Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies * Add Remove View	The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)
Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications Add Remove View Exhibit Sent As Paper Document ☐	Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.
Exhibit 3 - Form, Report, or Questionnaire Add Remove View Exhibit Sent As Paper Document ☐	Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.
Exhibit 4 - Marked Copies Add Remove View	The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.
Exhibit 5 - Proposed Rule Text Add Remove View	The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.
Partial Amendment Add Remove View	If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

Item 1. Text of the Proposed Rule Change

(a) Cboe Exchange, Inc. (the "Exchange" or "Cboe Options") proposes to amend its Fees Schedule in connection with migration. The text of the proposed rule change is provided in Exhibit 5.

(b) Not applicable.

(c) Not applicable.

Item 2. Procedures of the Self-Regulatory Organization

(a) The Exchange's President (or designee) pursuant to delegated authority approved the proposed rule change on September 10, 2019.

(b) Please refer questions and comments on the proposed rule change to Patrick Sexton, Executive Vice President, General Counsel, and Corporate Secretary, (312) 786-7467, or Corinne Klott (312) 786-7793, Cboe Exchange, Inc., 400 South LaSalle, Chicago, Illinois 60605.

Item 3. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

(a) Purpose

In 2016, the Exchange's parent company, Cboe Global Markets, Inc. (formerly named CBOE Holdings, Inc.) ("Cboe Global"), which is also the parent company of Cboe C2 Exchange, Inc. ("C2"), acquired Cboe EDGA Exchange, Inc. ("EDGA"), Cboe EDGX Exchange, Inc. ("EDGX" or "EDGX Options"), Cboe BZX Exchange, Inc. ("BZX" or "BZX Options"), and Cboe BYX Exchange, Inc. ("BYX" and, together with Cboe Options, C2, EDGX, EDGA, and BZX, the "Cboe Affiliated Exchanges"). The Cboe Affiliated Exchanges are working to align certain system functionality, including with respect to connectivity, retaining only intended differences between the Cboe Affiliated Exchanges, in the context of a technology migration. The Exchange intends to migrate its trading platform to the same system used by the Cboe Affiliated Exchanges, which the Exchange expects to complete on October 7, 2019 (the "migration"). As a result of this migration, the Exchange's current connectivity architecture will be rendered obsolete, and as such, the Exchange must offer new functionality, including new logical connectivity, and adopt corresponding fees.[1] In determining the proposed fee changes, the Exchange assessed the impact on market participants to ensure that the proposed fees would not create a financial burden and have an undue impact on any market participants, including smaller market participants. Indeed, the Exchange notes that it anticipates its post-migration connectivity revenue to be approximately 1.75% lower than today. In addition to providing a consistent technology offering across the Cboe Affiliated Exchanges, the upcoming migration will also provide market participants a latency equalized infrastructure, improving trading performance, and increased sustained order and quote per second capacity, as discussed more fully below. Accordingly, in connection with the migration and in order to more closely align the Exchange's fee structure with that of its Affiliated Exchanges, the Exchange intends to update and simplify its fee structure with respect to access and connectivity and adopt new access and connectivity fees, effective October 1, 2019 (or as otherwise stated herein).[2]

Physical Connectivity

A physical port is utilized by a Trading Permit Holder ("TPH") or non-TPH to connect to the Exchange at the data centers where the Exchange's servers are located.

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1 The Exchange notes that effective October 7, 2019, market participants will no longer have connectivity to the old Exchange architecture.

2 The Exchange initially filed the proposed fee changes on October 1, 2019 (SR-CBOE-2019-077). On business date October 2, 2019, the Exchange withdrew that filing and submitted this filing.

The Exchange currently assesses fees for Network Access Ports for these physical connections to the Exchange. Specifically, TPHs and non-TPHs can elect to connect to Cboe Options' trading system via either a 1 gigabit per second ("Gb") Network Access Port or a 10 Gb Network Access Port. The Exchange currently assesses a monthly fee of $1,500 per port for 1 Gb Network Access Ports and a monthly fee of $5,000 per port for 10 Gb Network Access Ports for access to Cboe Options primary system. Through January 31, 2020, Cboe Options market participants will continue to have the ability to connect to Cboe Options' trading system via the current Network Access Ports. For the month of October 2019, the Exchange will continue to assess the current fee for any legacy Network Access Port a TPH or non-TPH uses during the month of October. Effective November 1, 2019, the Exchange will assess the proposed fees described below for any physical port, regardless of whether the TPH or non-TPH connects via the current Network Access Ports or the new Physical Ports.

Effective October 7, 2019, in connection with the migration, TPHs and non-TPHs may alternatively elect to connect to Cboe Options via new latency equalized Physical Ports.[3] The new Physical Ports will similarly allow TPHs and non-TPHs the ability to connect to the Exchange at the data center where the Exchange's servers are located and TPHs and non-TPHs will have the option to connect via 1 Gb or 10 Gb Physical Ports. Effective November 1, 2019, the Exchange proposes to continue to assess a monthly fee of $1,500 per port for 1 Gb Physical Ports and increase the monthly fee for 10 Gb

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3 As previously noted, market participants will continue to have the option of connecting to Cboe Options via a 1 Gbps or 10 Gbps Network Access Port and would be assessed current rates of $1,500 and $5,000 per port, respectively. If a TPH replaces a legacy Network Access Port with a new C1 latency equalized Physical Port in October 2019, the TPH will not be billed an additional fee for the new C1 platform physical connection until November 2019.

Physical Ports to $7,000 per port. The new Physical Port fees will be prorated based on the remaining trading days in the calendar month. The proposed fee for 10 Gb Physical Ports is in line with the amounts assessed by other exchanges for similar connections by its Affiliated Exchanges and other Exchanges.[4]

In addition to the benefits resulting from the new Physical Ports being latency equalized (i.e., faster connectivity), TPHs and non-TPHs may be able to reduce their overall physical connectivity fees. Particularly, the Fees Schedule currently provides that Network Access Port fees are assessed for unicast (orders, quotes) and multicast (market data) connectivity separately. More specifically, Network Access Ports may only receive one type of connectivity each (thus requiring a market participant to maintain two ports if that market participant desires both types of connectivity). The new Physical Ports however, will all allow access to both unicast and multicast connectivity with a single physical connection to the Exchange. Therefore, TPHs and non-TPHs that currently purchase two legacy Network Access Ports for the purpose of receiving each type of

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4 See Cboe EDGA U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BZX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BYX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX Options Exchange Fee Schedule, Physical Connectivity Fees; and Cboe BZX Options Exchange Fee Schedule, Physical Connectivity Fees (collectively, "Affiliated Exchange Fee Schedules"). See e.g., Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. See also Nasdaq Price List – Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

connectivity will have the option upon migration to purchase only one new Physical Port to accommodate their connectivity needs, which may result in reduced costs for physical connectivity.[5]

Cboe Data Services – Port Fees

The Exchange proposes to amend the "Port Fee" under the Cboe Data Services ("CDS") Fees Schedule, effective October 1, 2019. Currently, the Port Fee is payable by any Customer that receives data through a direct connection to CDS ("direct connection") or through a connection to CDS provided by an extranet service provider ("extranet connection"). The Port Fee applies to receipt of any Cboe Options data feed but is only assessed once per data port. The Exchange proposes to amend the monthly CDS Port Fee to provide that it is payable "per source" used to receive data, instead of "per data port". The Exchange also proposes to increase the fee from $500 per data port/month to $1,000 per data source/month. In connection with the proposed change, the Exchange also proposes to rename the "Port Fee" to "Direct Data Access Fee". As the fee will be payable "per source" used to receive data, instead of "per data port", the Exchange believes the proposed name is more appropriate and that eliminating the term "port" from the fee will eliminate confusion as to how the fee is assessed. The Exchange notes the

5 The Exchange proposes to eliminate the current Cboe Command Connectivity Charges table in its entirety and create and relocate such fees in a new table in the Fees Schedule that addresses fees for physical connectivity, including fees for the current Network Access Ports, the new Physical Ports and Disaster Recovery ("DR") Ports. The Exchange notes that it is not proposing any changes with respect to DR Ports other than renaming the DR ports from "Network Access Ports" to "Physical Ports" to conform to the new Physical Port terminology.

proposed change in assessing the fee (i.e., per source vs per port), the proposed fee amount and the proposed name are the same as the corresponding fee on its affiliate C2.[6]

Logical Connectivity

Next, the Exchange proposes to amend its login fees. By way of background, Cboe Options market participants may currently access Cboe Command via either a CMI or a FIX Port, depending on how their systems are configured. Effective October 7, 2019, market participants will no longer be able to use CMI and FIX Login IDs. Rather, the Exchange will utilize a variety of logical connectivity ports as further described below. Both a legacy CMI/FIX Login ID and proposed logical port represent a technical port established by the Exchange within the Exchange's trading system for the delivery and/or receipt of trading messages – i.e., orders, accepts, cancels, transactions, etc. Market participants that wish to connect directly to the Exchange can request a number of different types of ports, including ports that support order entry, customizable purge functionality, or the receipt of market data. Market participants can also choose to connect indirectly through a number of different third-party providers, such as another broker-dealer or service bureau that the Exchange permits through specialized access to the Exchange's trading system and that may provide additional services or operate at a lower mutualized cost by providing access to multiple members. In light of the upcoming discontinuation of CMI and FIX Login IDs, the Exchange proposes to eliminate the fees associated with the CMI and FIX login IDs effective October 1, 2019 and adopt the below pricing for logical connectivity in its place.

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6 See Cboe C2 Options Exchange Fee Schedule, Cboe Data Services, LLC Fees, Section IV, Systems Fees.

Service	Cost per Month
Logical Ports (BOE, FIX) 1 to 5	$750 per port
Logical Ports (BOE, FIX) > 5	$800 per port
Logical Ports (Drop)	$750 per port
BOE Bulk Ports 1 to 5	$1,500 per port
BOE Bulk Ports 6 to 30	$2,500 per port
BOE Bulk Ports >30	$3,000 per port
Purge ports	$850 per port
GRP Ports	$750/primary (A or C Feed)
Multicast PITCH/Top Spin Server Ports	$750/set of primary (A or C feed)

The Exchange proposes to provide for each of the logical connectivity fees that new requests will be prorated for the first month of service. Cancellation requests are billed in full month increments as firms are required to pay for the service for the remainder of the month, unless the session is terminated within the first month of service. The Exchange notes that the proration policy is the same on its Affiliated Exchanges.[7] The Exchange also proposes to make clear in the Fees Schedule that port fees for BOE, FIX, BOE Bulk and Drop ports will be assessed the full month rates for October for ports available for use on the new trading platform beginning October 7, 2019. The port fees for BOE, FIX, Drop and BOE Bulk ports added on or after October 8, 2019, will be pro-rated. The Exchange notes that BOE, FIX, Drop and BOE Bulk ports offer similar functionality as current CMI and FIX Login Ids. As such, in lieu of assessing the current CMI and FIX Login Id fees for the month of October, the Exchange proposes to assess the proposed Logical Ports and BOE Bulk Port fees at the full rate for the month of October for any of these ports subscribed to on the date of the migration (October 7, 2019). Fees for Purge, Spin Server and GRP will be pro-rated beginning October 7, as these ports can only be used within the new platform.

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7 See Affiliated Exchange Fee Schedules, Logical Port Fees.

Logical Ports (BOE, FIX, Drop): The new Logical Ports represent ports established by the Exchange within the Exchange's system for trading purposes. Each Logical Port established is specific to a TPH or non-TPH and grants that TPH or non-TPH the ability to operate a specific application, such as order/quote[8] entry (FIX and BOE Logical Ports) or drop copies (Drop Logical Ports). Similar to CMI and FIX Login IDs, each Logical Port will entitle a firm to submit message traffic of up to specified number of orders per second.[9] The Exchange proposes to assess $750 per port per month for all Drop Logical Ports and also assess $750 per port per month (which is the same amount currently assessed per CMI/FIX Login ID per month), for the first 5 FIX/BOE Logical Ports and thereafter assess $800 per port, per month for each additional FIX/BOE Logical Port. While the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs (for the first five logical ports), the proposed logical ports provide for significantly more message traffic as shown below:

	CMI/FIX Login Ids		**BOE/FIX Logical Ports**
	Quotes	Orders	Quotes/Orders
Bandwidth Limit per login	5,000 quotes/3 sec[10]	30 orders/sec	15,000 quotes/orders/3 sec

8 Effective October 7, 2019, the definition of quote in Cboe Options Rule 1.1 shall mean a firm bid or offer a Market-Maker (a) submits electronically as an order or bulk message (including to update any bid or offer submitted in a previous order or bulk message) or (b) represents in open outcry on the trading floor.

9 Login Ids restrict the maximum number of orders and quotes per second in the same way logical ports do, and Users may similarly have multiple logical ports as they may have Trading Permits and/or bandwidth packets to accommodate their order and quote entry needs.

10 Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing "quote" bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

Cost	$750 each	$750 each	$750/$800 each
Cost per Quote/Order Sent @ Limit	$0.15 per quote/3 sec	$25.00 per order/sec	$0.05/$0.053 per quote/order/3 sec

Logical Port fees will be limited to Logical Ports in the Exchange's primary data center and no Logical Port fees will be assessed for redundant secondary data center ports. Each BOE or FIX Logical Port will incur the logical port fee indicated in the table above when used to enter up to 70,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 70,000 per day per logical port will incur an additional logical port fee of $800 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE and FIX Logical Ports.[11] The Exchange believes that the pricing implications of going beyond 70,000 orders per trading day per Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed fee of $750 per port is the same amount assessed not only for current CMI and FIX Login Ids, but also similar ports available on its affiliate exchange.[12]

The Exchange also proposes to provide that the fee for one FIX Logical Port connection to PULSe and one FIX Logical Port connection to Cboe Silexx (for FLEX trading purposes) will be waived per TPH. The Exchange notes that only one FIX Logical Port connection is required to support a firm's access through each of PULSe and Cboe Silexx FLEX.

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[11] For October 2019, average daily order quantities used to determine incremental usage will be determined based on the number of trading days between October 7th and October 31st.

[12] See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

BOE Bulk Logical Ports: Post-migration, the Exchange will also offer BOE Bulk Logical Ports, which provide users with the ability to submit single and bulk order messages to enter, modify, or cancel orders designated as Post Only Orders with a Time-in-Force of Day or GTD with an expiration time on that trading day. While BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity, as the primary purpose of the proposed bulk message functionality is to encourage market-maker quoting on exchanges. As indicated above, BOE Bulk Logical Ports are assessed $1,500 per port, per month for the first 5 BOE Bulk Logical Ports, assessed $2,500 per port, per month thereafter up to 30 ports and thereafter assessed $3,000 per port, per month for each additional BOE Bulk Logical Port. Like CMI and FIX Login IDs, and FIX/BOX Logical Ports, BOE Bulk Ports will also entitle a firm to submit message traffic of up to specified number of quotes/orders per second.[13] The proposed BOE Bulk ports also provide for significantly more message traffic as compared to current CMI/FIX Login IDs, as shown below:

	CMI/FIX Login Ids	**BOE Bulk Ports**
	Quotes	Quotes[14]

13 The Exchange notes that while technically there is no bandwidth limit per BOE Bulk Port, there may be possible performance degradation at 15,000 messages per second (which is the equivalent of 225,000 quotes/orders per 3 seconds). As such, the Exchange uses the number at which performance may be degraded for purposes of comparison.

14 See Cboe Options Rule 1.1.

Bandwidth Limit	5,000 quotes/3 sec[15]	225,000 quotes 3 sec
Cost	$750 each	$1,500/$2,500/$3,000 each
Cost per Quote/Order Sent @ Limit	$0.15 per quote/3 sec	$0.006/$0.011/$0.013 per quote/3 sec

Each BOE Bulk Logical Port will incur the logical port fee indicated in the table above when used to enter up to 30,000,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 30,000,000 orders per day per BOE Bulk Logical Port will incur an additional logical port fee of $3,000 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE Bulk Logical Ports.[16] The Exchange believes that the pricing implications of going beyond 30,000,000 orders per trading day per BOE Bulk Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed BOE Bulk Logical Port fees are similar to the fees assessed for these ports by BZX Options.[17]

Purge Ports: As part of the migration, the Exchange will be introducing Purge Ports to provide TPHs additional risk management and open order control functionality.

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15 Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing "quote" bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

16 For October 2019, average daily order quantities used to determine incremental usage will be determined based on the number of trading days between October 7th and October 31st.

17 See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

The proposed ports are designed to assist TPHs, in the management of, and risk control over, their quotes, particularly if the TPH is dealing with a large number of options. Particularly, Purge Ports will allow TPHs to submit a cancelation for all open orders, or a subset thereof, across multiple sessions under the same Executing Firm ID ("EFID"). This would allow TPHs to seamlessly avoid unintended executions, while continuing to evaluate the direction of the market. While Purge Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity and are therefore exposed to a large amount of risk across a number securities. The Exchange notes that market participants will also be able to cancel orders through the proposed FIX/BOE Logical Ports and as such a dedicated Purge Port is not required nor necessary. Rather, Purge Ports were specially developed as an optional service to further assist firms in effectively managing risk. As indicated in the table above, the Exchange proposes to assess a monthly charge of $850 per Purge Port. The Exchange notes that the proposed fee is in line with the fee assessed by other exchanges, including its Affiliated Exchanges, for Purge Ports.[18]

Multicast PITCH/Top Spin Server and GRP Ports: In connection with the migration, the Exchange will also offer optional Multicast PITCH/Top Spin Server ("Spin") and GRP ports and proposes to assess $750 per month, per port. Spin Ports and GRP Ports are used to request and receive a retransmission of data from the Exchange's Multicast PITCH/Top data feeds. The Exchange's Multicast PITCH/Top data feeds are available from two primary feeds, identified as the "A feed" and the "C feed", which

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18 See e.g., Nasdaq ISE Options Pricing Schedule, Section 7(C), Ports and Other Services. See also Cboe EDGX Options Exchange Fee Schedule, Options Logical Port Fees; Cboe C2 Options Exchange Fee Schedule, Options Logical Port Fees and Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

contain the same information but differ only in the way such feeds are received. The Exchange also offers two redundant feeds, identified as the "B feed" and the "D feed." All secondary feed Spin and GRP Ports will be provided for redundancy at no additional cost. The Exchange notes a dedicated Spin and GRP Port is not required nor necessary. Rather, Spin ports enable a market participant to receive a snapshot of the current book quickly in the middle of the trading session without worry of gap request limits and GRP Ports were specially developed to request and receive retransmission of data in the event of missed or dropped message. The Exchange notes that the proposed fee is in line with the fee assessed for the same ports on BZX Options.[19]

Access Credits

The Exchange next proposes to amend its Affiliate Volume Program ("AVP") to provide Market-Makers an opportunity to obtain credits on their monthly BOE Bulk Port Fees.[20] By way of background, under AVP, if a TPH Affiliate[21] or Appointed OFP[22] of a Market-Maker qualifies under the Volume Incentive Program ("VIP"), that Market-Maker will also qualify for a discount on that Market-Maker's Liquidity Provider ("LP") Sliding Scale transaction fees and Trading Permit fees. The Exchange proposes to amend AVP to provide that qualifying Market-Makers will receive a discount on Bulk Port fees

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19 See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

20 As noted above, while BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market Makers or firms that conduct similar business activity.

21 For purposes of AVP, "Affiliate" is defined as having at least 75% common ownership between the two entities as reflected on each entity's Form BD, Schedule A.

22 See Cboe Options Fees Schedule Footnote 23. Particularly, a Market-Maker may designate an Order Flow Provider ("OFP") as its "Appointed OFP" and an OFP may designate a Market-Maker to be its "Appointed Market-Maker" for purposes of qualifying for credits under AVP.

(instead of Trading Permits). As discussed more fully below, the Exchange is amending its Trading Permit structure, such that off-floor Market-Makers no longer need to hold more than one Market-Maker Trading Permit. As such, in place of credits for Trading Permits, the Exchange will provide credits for BOE Bulk Ports.[23] The proposed credits are as follows:

Market Maker Affiliate Access Credit	**VIP Tier**	**% Credit on Monthly BOE Bulk Port Fees**
Credit Tier	1	0%
	2	0%
	3	0%
	4	15%
	5	25%

The Exchange believes the proposed change to AVP continues to allow the Exchange to provide TPHs that have both Market-Maker and agency operations reduced Market-Maker costs via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees.

In addition to the opportunity to receive credits via AVP, the Exchange proposes to provide an opportunity for Market-Makers to obtain credits on their monthly BOE Bulk Port fees based on the previous month's make rate percentage. By way of background, the Liquidity Provider Sliding Scale Adjustment Table provides that Taker fees be applied to electronic "Taker" volume and a Maker rebate be applied to electronic "Maker" volume, in addition to the transaction fees assessed under the Liquidity Provider

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23 The Exchange notes that Trading Permits currently each include a set bandwidth allowance and 3 logins. Current logins and bandwidth are akin to the proposed logical ports, including BOE Bulk Ports which will primarily be used by Market-Makers.

Sliding Scale.[24] The amount of the Taker fee (or Maker rebate) is determined by the Liquidity Provider's percentage of volume from the previous month that was Maker ("Make Rate").[25] Market-Makers are given a Performance Tier based on their Make Rate percentage which currently provides adjustments to transaction fees. Thus, the program is designed to attract liquidity from traditional Market-Makers. The Exchange proposes to additionally provide that the Performance Tier earned will determine the percentage credit applied to a Market-Maker's monthly BOE Bulk Port fees.

Market Maker Access Credit	**Liquidity Provider Sliding Scale Adjustment Performance Tier**	**Make Rate (% Based on Prior Month)**	**% Credit on Monthly BOE Bulk Port Fees**
Credit Tier	1	0%-50%	0%
	2	Above 50% - 60%	0%
	3	Above 60% - 75%	0%

24 See Cboe Options Exchange Fees Schedule, Liquidity Provider Sliding Scale Adjustment Table.

25 More specifically, the Make Rate is derived from a Liquidity Provider's electronic volume the previous month in all symbols excluding Underlying Symbol List A using the following formula: (i) the Liquidity Provider's total electronic automatic execution ("auto-ex") volume (i.e., volume resulting from that Liquidity Provider's resting quotes or single sided quotes/orders that were executed by an incoming order or quote), divided by (ii) the Liquidity Provider's total auto-ex volume (i.e., volume that resulted from the Liquidity Provider's resting quotes/orders and volume that resulted from that LP's quotes/orders that removed liquidity). For example, a TPH's electronic Make volume in September 2019 is 2,500,000 contracts and its total electronic auto-ex volume is 3,000,000 contracts, resulting in a Make Rate of 83% (Performance Tier 4). As such, the TPH would receive a 40% credit on its monthly Bulk Port fees for the month of October 2019. For the month of October 2019, the Exchange will be billing certain incentive programs separately, including the Liquidity Provider Sliding Scale Adjustment Table, for the periods of October 1 – October 4 and October 7 – October 31 in light of the migration of its billing system. As such, a Market-Maker's Performance Tier for November 2019 will be determined by the Market-Maker's percentage of volume that was Maker from the period of October 7 - October 31, 2019.

	4	Above 75% - 90%	40%
	5	Above 90%	40%

The Exchange believes the proposal mitigates costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). The Exchange lastly notes that both the Market-Maker Affiliate Access Credit and Market-Maker Access Credit both can be earned by a TPH, and these credits will each apply to the total monthly BOE Bulk Port Fees including any incremental BOE Bulk Port fees incurred, before any credits/adjustments have been applied (i.e. an electronic MM can earn a credit from 15% to 65%).

Bandwidth Packets

As described above, post-migration, the Exchange will utilize a variety of logical ports. Part of this functionality is similar to bandwidth packets currently available on the Exchange. Bandwidth packets restrict the maximum number of orders and quotes per second. Post-migration, market participants may similarly have multiple Logical Ports and/or BOE Bulk Ports as they may have bandwidth packets to accommodate their order and quote entry needs. As such, the Exchange proposes to eliminate all of the current Bandwidth Packet fees, effective October 1, 2019.[26] The Exchange believes that the proposed pricing implications of going beyond specified bandwidth described above in the logical connectivity fees section will be able to otherwise mitigate message traffic as necessary.

CAS Servers

By way of background, in order to connect to Cboe Command, which allows a TPH to trade on the Cboe Options System, a TPH must connect via either a CMI or FIX

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26 See Cboe Options Fees Schedule, Bandwidth Packet Fees.

interface (depending on the configuration of the TPH's own systems). For TPHs that connect via a CMI interface, they must use CMI CAS Servers. In order to ensure that a CAS Server is not overburdened by quoting activity for Market-Makers, the Exchange currently allots each Market-Maker a certain number of CASs (in addition to the shared backups) based on the amount of quoting bandwidth that they have. Post-migration, the Exchange will no longer use CAS Servers. In light of the upcoming elimination of CAS Servers, the Exchange proposes to eliminate the CAS Server allotment table and extra CAS Server fee, effective October 1, 2019.

Trading Permit Fees

By way of background, the Exchange may issue different types of Trading Permits and determine the fees for those Trading Permits.[27] The Exchange currently issues the following three types of Trading Permits: (1) Market-Maker Trading Permits, which are assessed a monthly fee of $5,000 per permit; (2) Floor Broker Trading Permits, which are assessed a monthly fee of $9,000 per permit; and (3) Electronic Access Permits ("EAPs"), which are assessed a monthly fee of $1,600 per. The Exchange also offers separate Market-Maker and Electronic Access Permit for the Global Trading Hours ("GTH") session, which are assessed a monthly fee of $1,000 per permit and $500 per permit respectively.[28] For further color, a Market-Maker Trading Permit currently entitles the holder to act as a Market-Maker, including a Market-Maker trading remotely, DPM, eDPM, or LMM, and also provides an appointment credit of 1.0, a quoting and order entry bandwidth allowance,

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27 See Cboe Options Rules 3.1(a)(iv)-(v).

28 The fees are currently waived through September 2019 for the first Market-Maker and Electronic Access GTH Trading Permits.

up to three logins, trading floor access and TPH status.[29] A Floor Broker Trading Permit entitles the holder to act as a Floor Broker, provides an order entry bandwidth allowance, up to 3 logins, trading floor access and TPH status.[30] Lastly, an EAP entitles the holder to electronic access to the Exchange. Holders of EAPs must be broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing TPH, (b) TPH organization approved to transact business with the public, (c) Proprietary TPHs and (d) order service firms. The permit does not provide access to the trading floor. An EAP also provides an order entry bandwidth allowance, up to 3 logins and TPH status.[31] The Exchange also provides an opportunity for TPHs to pay reduced rates for Trading Permits via the Market Maker and Floor Broker Trading Permit Sliding Scale Programs ("TP Sliding Scales"). Particularly, the TP Sliding Scales allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year.[32]

As noted above, Trading Permits are currently tied to bandwidth allocation, logins and appointment costs, and as such, TPH organizations may hold multiple Trading Permits of the same type in order to meet their connectivity and appointment cost needs. Post-Migration, bandwidth allocation, logins and appointment costs will no longer be tied to a Trading Permit, and as such, the Exchange proposes to modify its Trading Permit

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29 See Cboe Options Fees Schedule.

30 Id.

31 Id.

32 Due to the October 7 migration, the amended the TP Sliding Scale Programs to provide that any commitment to Trading Permits under the TP Sliding Scales shall be in place through September 2019, instead of the calendar year. See Cboe Options Fees Schedule, Footnotes 24 and 25.

structure. Particularly, effective October 7, 2019, the Exchange will adopt separate on-floor and off-floor Trading Permits for Market-Makers and Floor Brokers, adopt a new Clearing TPH Permit, and modify the corresponding fees and discounts. As is the case today, the proposed access fees discussed below will continue to be non-refundable and will be assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Trading Permit Holders will only be assessed a single monthly fee for each type of electronic Trading Permit it holds. All Trading Permits will be assessed the full proposed monthly rates, as described below, based on the quantity of Trading Permits a TPH maintains from October 7 – October 31, 2019.[33]

First, as proposed, TPHs will no longer need to hold multiple permits for each type of electronic Trading Permit (i.e., electronic Market-Maker Trading Permits and/or and Electronic Access Permits). Rather, the Exchange proposes to provide that for electronic access to the Exchange, a TPH need only purchase one of the following permit types for each trading function the TPH intends to perform: Market-Maker Electronic Access Permit ("MM EAP") in order to act as an off-floor Market-Maker and which will

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33 The Exchange proposes to eliminate the current Trading Permit fees, effective October 1, 2019 and for the month of October 2019 will instead assess the full proposed rates for the Trading Permits held by a TPH from October 7, 2019-October 31, 2019.

continue to be assessed a monthly fee of $5,000, Electronic Access Permit ("EAP") in order to submit orders electronically to the Exchange[34] and which will be assessed a monthly fee of $3,000, and a Clearing TPH Permit, for TPHs acting solely as a Clearing TPH, which will be assessed a monthly fee of $2,000 (and is more fully described below). For example, a TPH organization that wishes to act as a Market-Maker and also submit orders electronically in a non-Market Maker capacity would have to purchase one MM EAP and one EAP. TPHs will be assessed the monthly fee for each type of Permit once per electronic access capacity.

Next, the Exchange proposes to adopt a new Trading Permit, exclusively for Clearing TPHs that are approved to act solely as a Clearing TPH (as opposed to those that are also approved in a capacity that allows them to submit orders electronically). Currently any TPH that is registered to act as a Clearing TPH must purchase an EAP, whether or not that Clearing TPH acts solely as a Clearing TPH or acts as a Clearing TPH and submits orders electronically. The Exchange proposes to adopt a new Trading Permit, for any TPH that is registered to act solely as Clearing TPH at a discounted rate of $2,000 per month.[35]

Additionally, the Exchange proposes to eliminate its fees for Global Trading Hours Trading Permits. Particularly, the Exchange proposes to provide that any Market-Maker EAP, EAP and Clearing TPH Permit provides access (at no additional cost) to the

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34 EAPs may be purchased by TPHs that both clear transactions for other TPHs (i.e., a "Clearing TPH") and submit orders electronically.

35 Cboe Option Rules provides the Exchange authority to issue different types of Trading Permits which allows holders, among other things, to act in one or more trading functions authorized by the Rules. See Cboe Options Rule 3.1(a)(iv). The Exchange notes that currently 4 out of 38 Clearing TPHs are approved to act solely as a Clearing TPH.

GTH session.[36] Additionally, the Exchange proposes to amend Footnote 37 of the Fees Schedule regarding GTH in connection with the migration. Currently Footnote 37 provides that separate access permits and connectivity is needed for the GTH session. The Exchange proposes to eliminate this language as that will no longer be the case upon migration (i.e., an electronic Trading Permits will grant access to both sessions and physical and logical ports may be used in both sessions, eliminating the need to purchase separate connectivity). The Exchange also notes that upon migration, the Book used during Regular Trading Hours ("RTH") will be the same Book used during GTH (as compared to today where the Exchange maintains separate Books for each session). The Exchange therefore also proposes to eliminate language in Footnote 37 stating that GTH is a segregated trading session and that there is no market interaction between the two sessions.

The Exchange next proposes to adopt MM EAP Appointment fees. By way of background, a registered Market-Maker may currently create a Virtual Trading Crowd ("VTC") Appointment, which confers the right to quote electronically in an appropriate number of classes selected from "tiers" that have been structured according to trading volume statistics, except for the AA tier.[37] Each Trading Permit currently held by a Market-Maker has an appointment credit of 1.0. A Market-Maker may select for each Trading Permit the Market-Maker holds any combination of classes whose aggregate appointment cost does not exceed 1.0. A Market-Maker may not hold a combination of

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[36] The Exchange notes that Clearing TPHs must be properly authorized by the Options Clearing Corporation ("OCC") to operate during the Global Trading Hours session and all TPHs must have a Letter of Guarantee to participate in the GTH session (as is the case today).

[37] See proposed Cboe Options Rule 5.50 (Appointment of Market-Makers), which rule will be effective October 7, 2019.

appointments whose aggregate appointment cost is greater than the number of Trading Permits that Market-Maker holds.[38]

As discussed, post-migration, bandwidth allocation, logins and appointment costs will no longer be tied to a single Trading Permit and therefore the Exchange is proposing to provide that TPHs no longer need to have multiple permits for each type of electronic Trading Permit. As proposed however, upon migration, Market-Makers must still select class appointments in the classes they seek to make markets electronically.[39] Particularly, a Market-Maker firm will only be required to have one permit and will thereafter be charged for one or more "Appointment Units" (which will scale from 1 "unit" to more than 5 "units"), depending on which classes they elect appointments in. Appointment Units will replace the standard 1.0 appointment cost, but function in the same manner. Appointment weights (formerly known as "appointment costs") for each appointed class will be set forth in proposed Cboe Options Rule 5.50(g) and will be summed for each Market-Maker in order to determine the total appointment units, to which fees will be assessed. This is the current manner in which the tier costs per class appointment are summed to meet the 1.0 appointment cost, the only difference will be that if a Market-Maker exceeds this "unit" then their fees will be assessed under the "unit" that corresponds to the total of their appointment weights, as opposed to holding another Trading Permit because it exceeded the 1.0 "unit". Particularly, the Exchange proposes to adopt a new MM EAP Appointment Sliding Scale. Appointment Units for each

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38 For example, if a Market-Maker selects a combination of appointments that has an aggregate appointment cost of 2.5, that Market-Maker must hold at least 3 Market-Maker Trading Permits.

39 See Proposed Cboe Options Rule 5.50(a), which rule will be effective October 7, 2019.

assigned class will be aggregated for each Market-Maker and Market-Maker affiliate. If the sum of appointments is a fractional amount, the total will be rounded up to the next highest whole Appointment Unit. The following lists the progressive monthly fees for Appointment Units[40]:

Market –Maker EAP Appointments	Quantity	Monthly Fees (per unit)
Appointment Units	1	$0
	2	$6,000
	3 to 5	$4,000
	> 5	$3,100

As noted above, upon migration the Exchange will have separate Trading Permits for on-floor and off-floor activity. As such, the Exchange proposes to maintain a Floor Broker Trading Permit and adopt a new Market-Maker Floor Permit for on-floor Market-Makers. In addition, RUT, SPX, and VIX Tier Appointment fees will be charged separately for Permit, as discussed more fully below.

As briefly described above, the Exchange currently maintains TP Sliding Scales, which allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year. The Exchange proposes to eliminate the current TP Sliding Scales, including the

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40 For example, if a Market-Maker's total appointment costs amount to 3.5 unites, the Market-Maker will be assessed a total monthly fee of $14,000 (1 appointment unit at $0, 1 appointment unit at $6,000 and 2 appointment units at $4,000) as and for appointment fees and $5,000 for a Market-Maker Trading Permit, for a total monthly sum of $19,000, where a Market-Maker currently (i.e., prior to migration) with a total appointment cost of 3.5 would need to hold 4 Trading Permits and would therefore be assessed a monthly fee of $20,000.

requirement to commit to a specific tier, and replace it with new TP Sliding Scales as follows[41]:

<table>
<tr><th>Floor TPH Permits</th><th>Current Permit Qty</th><th>Current Monthly Fee (per permit)</th><th>Proposed Permit Qty</th><th>Proposed Monthly Fee (per permit)</th></tr>
<tr><td rowspan="4">Market-Maker Floor Permit</td><td>1 – 10</td><td>$5,000</td><td>1</td><td>$6,000</td></tr>
<tr><td>11 - 20</td><td>$3,700</td><td>2 to 5</td><td>$4,500</td></tr>
<tr><td rowspan="2">21 or more</td><td rowspan="2">$1,800</td><td>6 to 10</td><td>$3,500</td></tr>
<tr><td>> 10</td><td>$2,000</td></tr>
<tr><td rowspan="4">Floor Broker Permit</td><td>1</td><td>$9,000</td><td>1</td><td>$7,500</td></tr>
<tr><td>2 - 5</td><td>$5,000</td><td>2 to 3</td><td>$5,700</td></tr>
<tr><td rowspan="2">6 or more</td><td rowspan="2">$3,000</td><td>4 to 5</td><td>$4,500</td></tr>
<tr><td>> 5</td><td>$3,200</td></tr>
</table>

Floor Broker ADV Discount

Footnote 25, which governs rebates on Floor Broker Trading Permits, currently provides that any Floor Broker that executes a certain average of customer or professional customer/voluntary customer (collectively “customer”) open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades (“Qualifying Symbols”), will receive a rebate on that TPH’s Floor Broker Trading Permit Fees. Specifically, any Floor Broker Trading Permit Holder that executes an average of 15,000 customer (“C” origin code) and/or professional customer and voluntary customer (“W” origin code) open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $9,000 on that TPH’s Floor Broker Trading Permit fees. Additionally, any Floor Broker that executes an average of 25,000 customer open-outcry contracts per day over the course of a calendar

41 In light of the proposed change to eliminate the TP Sliding Scale, the Exchange proposes to eliminate Footnote 24 in its entirety.

month in Qualifying Symbols will receive a rebate of $14,000 on that TPH's Floor Broker Trading Permit fees. The Exchange proposes to maintain, but modify, its discount for Floor Broker Trading Permit fees. First, the measurement criteria to qualify for a rebate will be modified to only include customer ("C" origin code) open-outcry contracts executed per day over the course of a calendar month in all underlying symbols, while the rebate amount will be modified to be a percentage of the TPH's Floor Broker Permit total costs, instead of a straight rebate.[42] The criteria and corresponding percentage rebates are noted below[43].

Floor Broker ADV Discount Tier	ADV	Floor Broker Permit Rebate
1	0 to 99,999	0%
2	100,000 to 174,999	15%
3	> 174,999	25%

Next, the Exchange proposes to modify its SPX, VIX and RUT Tier Appointment Fees. Currently, these fees are assessed to any Market-Maker TPH that either (i) has the respective SPX, VIX or RUT appointment at any time during a calendar month and trades a specified number of contracts or (ii) trades a specified number of contracts in open outcry during a calendar month. More specifically, the $3,000 per month SPX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 SPX contracts while that appointment is active or (ii) conducts any open outcry

[42] As is the case today, the Floor Broker ADV Discount will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations.

[43] In light of the proposal to eliminate the TP Sliding Scales and the Floor Broker rebates currently set forth under Footnote 25, the Exchange proposes to eliminate Footnote 25 in its entirety.

transaction in SPX or SPX Weeklys at any time during the month. The $2,000 per month VIX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 VIX contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in VIX at any time during the month. Lastly, the $1,000 RUT Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an RUT Tier Appointment at any time during a calendar month and trades at least 100 RUT contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in RUT at any time during the month. Because the Exchange is separating Market-Making Trading Permits for electronic and open-outcry market-making, the Exchange will be assessing separate Tier Appointment Fees for each type of Market-Making Trading Permit. The Exchange proposes, effective October 1, 2019, a MM EAP will be assessed the Tier Appointment Fee whenever the Market-Maker executes the corresponding specified number of contracts. The Exchange also proposes to modify the threshold number of contracts a Market-Maker must execute in a month to trigger the fee for VIX and RUT. Particularly, for the VIX and RUT Tier appointments, the Exchange proposes to increase the threshold from 100 contracts a month to 1,000 contracts a month. The Exchange notes the Tier Appointment Fee amounts are not changing.[44] In connection with the proposed changes, the Exchange proposes to relocate

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[44] Floor Broker Trading Surcharges for SPX/SPXW and VIX are also not changing. The Exchange however, is creating a new table for Floor Broker Trading Surcharges and relocating such fees in the Fees Schedule in connection with the proposal to eliminate fees currently set forth in the “Trading Permit and Tier Appointment Fees” Table.

the Tier Appointment Fees to a new table and eliminate the language in the current respective notes sections of each Tier Appointment Fee as it is no longer necessary.

Trading Permit Holder Regulatory Fee

The Exchange currently assesses a Trading Permit Holder Regulatory Fee of $90 per month, per RTH Trading Permit, applicable to all TPHs, which fee helps more closely cover the costs of regulating all TPHs and performing regulatory responsibilities. In light of the proposed changes to the Exchange's Trading Permit structure, the Exchange proposes to eliminate the TPH Regulatory Fee. The Exchange notes that there is no regulatory requirement to maintain this fee.

(b) Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the "Act") and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[45] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[46] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with

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45 15 U.S.C. 78f(b).

46 15 U.S.C. 78f(b)(5).

Section 6(b)(4) of the Act,[47] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[48] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange first notes that it operates in a highly competitive environment. Indeed, there are currently 16 registered options exchanges that trade options. There is also no regulatory requirement that any market participant connect to any one options exchange, or that any market participant connect at a particular connection speed or act in a particular capacity on the Exchange. Moreover, membership is not a requirement to participate on the Exchange. Indeed, the Exchange is unaware of any one options exchange whose membership includes every registered broker-dealer. Even the number of members between the Exchange and its 3 other options exchange affiliates vary. Indeed, a number of firms currently do not participate on the Exchange, or participate on the Exchange though sponsored access arrangements rather than by becoming a member. Particularly, the Exchange notes that as of August 2019, the Exchange had 97 members (TPH organizations), of which only 45 directly connected to the Exchange. In addition, of those market participants that do connect to the Exchange, it is the individual needs of

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47 15 U.S.C. 78f(b)(4).

48 15 U.S.C. 78f(b)(5).

each market participant that determine the amount and type of Trading Permits and physical and logical connections to the Exchange.[49]

Moreover, the Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Particularly, in Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system "has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies."[50] The number of available exchanges to connect to ensures increased competition in the marketplace, and constrains the ability of exchanges to charge supracompetitive fees for access to its market. Additionally, the Exchange notes that non-TPHs such as Service Bureaus and Extranets resell Cboe Options connectivity.[51] This indirect connectivity is another viable alternative that is already being used by non-TPHs, further constraining the price that the Exchange is able to charge for connectivity to its Exchange. Accordingly, in the event that a market participant views one exchange's direct connectivity and access fees as more or less attractive than the competition they

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49 To assist market participants that are connected or considering connecting to the Exchange, the Exchange provides detailed information and specifications about its available connectivity alternatives in the Cboe C1 Options Exchange Connectivity Manual, as well as the various technical specifications. See http://markets.cboe.com/us/options/support/technical/

50 See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) ("Regulation NMS Adopting Release").

51 Currently, there are 13 firms that resell Cboe Options connectivity. Post-migration, the Exchange anticipates that there will be 19 firms that resell Cboe Options connectivity (both physical and logical). The Exchange does not receive any connectivity revenue when connectivity is resold by a third-party, which often is resold to multiple customers, some of whom are agency broker-dealers that have numerous customers of their own.

can choose to connect to that exchange indirectly or may choose not to connect to that exchange and connect instead to one or more of the other 15 options markets. Moreover, the Commission has recognized that while some exchanges may have a unique business model that is not currently offered by competitors, it believes a competitor could create similar business models if demand were adequate, and if they did not do so, the Commission believes it would be likely that new entrants would do so if the exchange with that unique business model was otherwise profitable.[52] The proposed fees therefore reflect a competitive environment, as the Exchange seeks to amend its access fees in connection with the upcoming migration of its technology platform, while still attracting market participants to continue to be, or become, connected to the Exchange.

In determining the proposed fee changes discussed above, the Exchange reviewed the current competitive landscape, considered the fees historically paid by market participants for connectivity to the current system, and also assessed the impact on market participants to ensure that the proposed fees would not create a financial burden and have an undue impact on any market participants, including smaller market participants. The proposed connectivity structure and corresponding fees, like the current connectivity structure and fees, provide market participants flexibility with respect to how to connect to the Exchange based on each market participants' respective business needs. For example, the amount and type of physical and logical ports are determined by factors relevant and specific to each market participant, including its business model, costs of connectivity, how its business is segmented and allocated and volume of

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52 See Securities Exchange Act Release No. 86901 (September 9, 2019), 84 FR 48458 (September 13, 2019) (File No. S7-13-19)

messages sent to the Exchange. Moreover, the proposed connectivity structure is designed to encourage market participants to be efficient with their physical and logical port usage. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase, if any, the Exchange anticipates that like today, some market participants will continue to decline to connect and participate on the Exchange, some will participate on the Exchange via indirect connectivity, some will only purchase one physical connection and/or logical port connection, and others will purchase multiple connections. The Exchange lastly notes that market participants were provided advanced notice of the proposed fee changes in August 2019 via Exchange Notice.[53]

Physical Ports

The Exchange believes increasing the fee for the new 10 Gb Physical Port is reasonable because unlike, the current 10 Gb Network Access Ports, the new Physical Ports provides a connection through a latency equalized infrastructure and also allows access to both unicast order entry and multicast market data with a single physical connection. As discussed above, legacy Network Access Ports do not permit market participants to receive unicast and multicast connectivity. As such, in order to receive both connectivity types, a market participant currently needs to purchase and maintain at least two 10 Gb Network Access Ports. The proposed Physical Ports not only provide a latency reduction as compared to the legacy ports, improving trading performance, but also alleviate the need to pay for two physical ports as a result of needing unicast and

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53 See Exchange Notice "Cboe Options Exchange Access and Capacity Fee Schedule Changes Effective October 1, 2019 and November 1, 2019" Reference ID C2019081900.

multicast connectivity. Accordingly, market participants who historically had to use two separate ports for each of multicast and unicast activity, will be able to purchase only one port, and consequently pay lower fees overall. For example, if a TPH has two 10 Gb legacy Network Access Ports, one of which receives unicast traffic and the other of which receives multicast traffic, that TPH is currently assessed $10,000 per month ($5,000 per port). Using the new Physical Ports, that TPH has the option of utilizing one single port, instead of two ports, to receive both unicast and multicast traffic, therefore paying only $7,000 per month for a port that provides both connectivity types. The Exchange notes that currently, approximately 50% of TPHs maintain two or more 10 Gb Network Access Ports. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase post-migration, the Exchange anticipates approximately 50% of the TPHs with two or more 10 Gb Network Access Ports to reduce the number of 10 Gb Physical Ports that they purchase. The Exchange also expects the remaining 50% of TPHs to maintain their current 10 Gb Physical Ports, but reduce the number of 1 Gb Physical Ports. Particularly, a number of TPHs currently maintain two 10 Gb Network Access Ports to receive multicast data and two 1 Gb Network Access Ports for order entry (unicast connectivity). As the new 10 Gb Physical Ports are able to accommodate unicast connectivity (order entry), TPHs may choose to eliminate their 1 Gb Network Access Ports and utilize the new 10 Gb Physical Ports for both multicast and unicast connectivity.

As discussed above, if a TPH deems a particular exchange as charging excessive fees for connectivity, such market participants may opt to terminate their connectivity arrangements with that exchange, and adopt a possible range of alternative strategies, including routing to the applicable exchange through another participant or market center or taking that exchange's data indirectly. Accordingly, if the Exchange charges excessive fees, it would stand to lose not only connectivity revenues but also revenues associated with the execution of orders routed to it, and, to the extent applicable, market data revenues. The Exchange believes that this competitive dynamic imposes powerful restraints on the ability of any exchange to charge unreasonable fees for physical connectivity. The Exchange also notes that the proposal represents an equitable allocation of reasonable dues, fees and other charges as its fees for physical connectivity are reasonably constrained by competitive alternatives. The proposed amounts are in line with, and in some cases lower than, the costs of physical connectivity at other Exchanges[54], including the Exchange's Affiliated Exchanges which will have the same connectivity infrastructure once the Exchange has migrated.[55] The Exchange believes the proposed Physical Port fees are equitable and not unreasonably discriminatory as the connectivity pricing is associated with relative usage of the various market participants and does not impose a barrier to entry to smaller participants.

The Exchange also believes increasing the fee for 10 Gb Physical Ports and charging a higher fee as compared to the 1 Gb Physical Port is equitable as the 1 Gb

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54 See e.g., Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. See also Nasdaq Price List – Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

55 See e.g., Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

Physical Port is 1/10th the size of the 10 Gb Physical Port and therefore does not offer access to many of the products and services offered by the Exchange (e.g., ability to receive certain market data products). Thus the value of the 1 Gb alternative is lower than the value of the 10 Gb alternative, when measured based on the type of Exchange access it offers. Moreover, market participants that purchase 10 Gb Physical Ports utilize the most bandwidth and therefore consume the most resources from the network. As such, the Exchange believes the proposed fees for the 1 and 10 Gb Physical Ports, respectively are reasonably and appropriately allocated.

<u>Data Port Fees</u>

The Exchange believes assessing the data port fee per data source, instead of per port, is reasonable because it may allow for market participants to maintain more ports at a lower cost and applies uniformly to all market participants. The Exchange believes the proposed increase is reasonable because, as noted above, market participants will likely still pay lower fees as a result of charging per data source and not per data port. Indeed, while the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange anticipates approximately 76% of the 51 market participants who currently pay data port fees to pay lower fees upon implementation of the proposed change. The Exchange anticipates that 19% of TPHs who currently pay data port fees will pay a modest increase of only $500 per month. Additionally as discussed above, the Exchange's affiliate C2 has the same fee which is also assessed at the proposed rate and assessed by data source instead of per port. The proposed name change is also appropriate in light of the Exchange's proposed changes and may alleviate potential confusion.

Logical Connectivity

Port fees

The Exchange believes it's reasonable to eliminate certain fees associated with legacy options for connecting to the Exchange and to replace them with fees associated with new options for connecting to the Exchange that are similar to those offered at its Affiliated Exchanges. In particular, the Exchange believes it's reasonable to no longer assess fees for CMI and FIX Login IDs because the Login IDs will be retired and obsolete upon migration and because the Exchange is proposing to replace them with fees associated with the new logical connectivity options. The Exchange believes that it is reasonable to harmonize the Exchange's logical connectivity options and corresponding connectivity fees once the Exchange is on a common platform as its Affiliated Exchanges. Additionally, the Exchange notes the proposed fees are the same as, or in line with, the fees assessed on its Affiliated Exchanges for similar connectivity.[56] The proposed logical connectivity fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same respective connectivity options.

The Exchange believes the proposed Logical Port fees are reasonable as it is the same fee for Drop Ports and the first five BOE/FIX Ports that is assessed for CMI and FIX Logins, which the Exchange is eliminating in lieu of logical ports. Additionally, while the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs, the proposed logical ports provide for significantly more message traffic. Specifically, the proposed BOE/FIX Logical Ports will provide for 3 times the amount of

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56 See Affiliated Exchange Fee Schedules, Logical Port Fees.

quoting[57] capacity and approximately 165 times order entry capacity. Similarly, the Exchange believes the proposed BOE Bulk Port fees are reasonable because while the fees are higher than the current CMI and FIX Login Id fees and the proposed Logical Port fees, BOE Bulk Ports offer significantly more bandwidth capacity than both CMI and FIX Login Ids and Logical Ports. Particularly, a single BOE Bulk Port offers 45 times the amount of quoting bandwidth than CMI/FIX Login Ids[58] and 5 times the amount of quoting bandwidth than Logical Ports will offer. Additionally, the Exchange believes that its fees for logical connectivity are reasonable, equitable, and not unfairly discriminatory as they are designed to ensure that firms that use the most capacity pay for that capacity, rather than placing that burden on market participants that have more modest needs. Although the Exchange charges a "per port" fee for logical connectivity, it notes that this fee is in effect a capacity fee as each FIX, BOE or BOE Bulk port used for order/quote entry supports a specified capacity (i.e., messages per second) in the matching engine, and firms purchase additional logical ports when they require more capacity due to their business needs.

An obvious driver for a market participant's decision to purchase multiple ports will be their desire to send or receive additional levels of message traffic in some manner, either by increasing their total amount of message capacity available, or by segregating order flow for different trading desks and clients to avoid latency sensitive applications from competing for a single thread of resources. For example, a TPH may purchase one or more ports for its market making business based on the amount of message traffic

57 Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

58 Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

needed to support that business, and then purchase separate ports for proprietary trading or customer facing businesses so that those businesses have their own distinct connection, allowing the firm to send multiple messages into the Exchange's trading system in parallel rather than sequentially. Some TPHs that provide direct market access to their customers may also choose to purchase separate ports for different clients as a service for latency sensitive customers that desire the lowest possible latency to improve trading performance. Thus, while a smaller TPH that demands more limited message traffic may connect through a service bureau or other service provider, or may choose to purchase one or two logical ports that are billed at a rate of $750 per month each, a larger market participant with a substantial and diversified U.S. options business may opt to purchase additional ports to support both the volume and types of activity that they conduct on the Exchange. While the Exchange has no way of predicting with certainty the amount or type of logical ports market participants will in fact purchase post-migration, the Exchange anticipates approximately 16% of TPHs to purchase one to two logical ports, and approximately 22% of TPHs to not purchase any logical ports. At the same time, market participants that desire more total capacity due to their business needs, or that wish to segregate order flow by purchasing separate capacity allocations to reduce latency or for other operational reasons, would be permitted to choose to purchase such additional capacity at the same marginal cost. The Exchange believes the proposal to assess an additional Logical and BOE Bulk port fee for incremental usage per logical port is reasonable because the proposed fees are modestly higher than the proposed Logical

Port and BOE Bulk fees and encourage users to mitigate message traffic as necessary. The Exchange notes one of its Affiliated Exchanges has similar implied port fees.[59]

In sum, the Exchange believes that the proposed BOE/FIX Logical Port and BOE Bulk Port fees are appropriate as these fees would ensure that market participants continue to pay for the amount of capacity that they request, and the market participants that pay the most are the ones that demand the most resources from the Exchange. The Exchange also believes that its logical connectivity fees are aligned with the goals of the Commission in facilitating a competitive market for all firms that trade on the Exchange and of ensuring that critical market infrastructure has "levels of capacity, integrity, resiliency, availability, and security adequate to maintain their operational capability and promote the maintenance of fair and orderly markets."[60]

The Exchange believes waiving the FIX/BOE Logical Port fee for one FIX Logical Port used to access PULSe and Silexx (for FLEX Trading) is reasonable because it will allow all TPHs using PULSe and Silexx to avoid having to pay a fee that they would otherwise have to pay. The waiver is equitable and not unfairly discriminatory because TPHs using PULSe are already subject to a monthly fee for the PULSe Workstation, which the Exchange views as inclusive of fees to access the Exchange. Moreover, while PULSe users today do not require a FIX/CMI Login Id, post-migration, due to changes to the connectivity infrastructure, PULSe users will be required to maintain a FIX Logical Port and as such incur a fee they previously would not have been subject to. Similarly, the Exchange believes that the waiver for Silexx (for FLEX trading)

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59 See e.g., Cboe C2 Options Exchange Fees Schedule, Logical Connectivity Fees.

60 See Securities Exchange Act Release No. 73639 (November 19, 2014), 79 FR 72251 (December 5, 2014) (File No. S7-01-13) (Regulation SCI Adopting Release).

will encourage TPHs to transact business using FLEX Options using the new Silexx System and encourage trading of FLEX Options. Additionally, the Exchange notes that it currently waives the Login Id fees for Login IDs used to access the CFLEX system.

The Exchange believes its proposed fee for Purge Ports is reasonable as it is also in line with the amount assessed for similar ports by both its Affiliated Exchanges and other exchanges.[61] Moreover, the Exchange believes that offering Purge Port functionality at the Exchange level promotes robust risk management across the industry, and thereby facilitates investor protection. Some market participants, and, in particular, larger firms, could build similar risk functionality on their trading systems that permit the flexible cancellation of orders entered on the Exchange. Offering Exchange level protections however, ensures that such functionality is widely available to all firms, including smaller firms that may otherwise not be willing to incur the costs and development work necessary to support their own customized mass cancel functionality. The Exchange operates in a highly competitive market in which exchanges offer connectivity and related services as a means to facilitate the trading activities of TPHs and other participants. As the proposed Purge Ports provide voluntary risk management functionality, excessive fees would simply serve to reduce demand for this optional product. The Exchange also believes that the proposed Purge Port fees are not unfairly discriminatory because they will apply uniformly to all TPHs that choose to use dedicated Purge Ports. The proposed Purge Ports are completely voluntary and, as they relate solely to optional risk management functionality, no TPH is required or under any

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61 See Affiliated Exchange Fee Schedules, Logical Port Fees. See also, Nasdaq ISE Pricing Schedule, Section 7(C). ISE charges a fee of $1,100 per month for SQF Purge Ports.

regulatory obligation to utilize them. The Exchange believes that adopting separate fees for these ports ensures that the associated costs are borne exclusively by TPHs that determine to use them based on their business needs, including Market-Makers or similarly situated market participants. Similar to Purge Ports, Spin and GRP Ports are optional products that provide an alternative means for market participants to receive multicast data and request and receive a retransmission of such data. As such excessive fees would simply serve to reduce demand for these products, which TPHs are under no regulatory obligation to utilize. All TPHs that voluntarily select these service options (i.e., Purge Ports, Spin Ports or GRP Ports) will be charged the same amount for the same respective services. All TPHs have the option to select any connectivity option, and there is no differentiation among TPHs with regard to the fees charged for the services offered by the Exchange.

Access Credits

The Exchange believes the proposal to adopt credits for BOE Bulk Ports is reasonable, equitable and not unfairly discriminatory because it provides an opportunity for TPHs to pay lower fees for logical connectivity. The Exchange notes that the proposed credits are in lieu of the current credits that Market-Makers are eligible to receive today for Trading Permits fees. Although only Market-Makers may receive the proposed BOE Bulk Port credits, Market-Makers are valuable market participants that provide liquidity in the marketplace and incur costs that other market participants do not incur. For example, Market-Makers have a number of obligations, including quoting obligations and fees associated with appointments that other market participants do not have.

The Exchange believes the proposed BOE Bulk Port fee credits provided under AVP will incentivize the routing of orders to the Exchange by TPHs that have both Market-Maker and agency operations, as well as incent Market-Makers to tighten market widths due to the reduced costs the incentives will provide. In the options industry, many options orders are routed by consolidators, which are firms that have both order router and Market-Maker operations. The Exchange is aware not only of the importance of providing credits on the order routing side in order to encourage the submission of orders, but also of the operations costs on the Market-Maker side. The Exchange believes the proposed change to AVP continues to allow the Exchange to provide relief to the Market-Maker side via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. Additionally, the proposed credits may incentivize and attract more volume and liquidity to the Exchange, which will benefit all Exchange participants through increased opportunities to trade as well as enhancing price discovery. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the required criteria to receive the credits, the Exchange anticipates approximately two TPHs (out of approximately 5 TPHs that are eligible for AVP) to reach VIP Tiers 4 or 5 and consequently earn the BOE Bulk Port fee credits for their respective Market-Maker affiliate.

The Exchange believes the proposed BOE Bulk Port fee credits available for TPHs that reach certain Performance Tiers under the Liquidity Provider Sliding Scale Adjustment Table is reasonable as the credits provide for reduced connectivity costs for those Market-Makers that reach the required thresholds. The Exchange believe it’s reasonable, equitable and not unfairly discriminatory to provide credits to those Market-

Makers that primarily provide and post liquidity to the Exchange, as the Exchange wants to continue to encourage Market-Makers with significant Make Rates to continue to participate on the Exchange and add liquidity. Greater liquidity benefits all market participants by providing more trading opportunities and tighter spreads.

Moreover, the Exchange notes that Market-Makers with a high Make Rate percentage generally require higher amounts of capacity than other Market-Makers. Particularly, Market-Makers with high Make Rates are generally streaming significantly more quotes than those with lower Make Rates. As such, Market-Makers with high Make Rates may incur more costs than other Market-Makers as they may need to purchase multiple BOE Bulk Ports in order to accommodate their capacity needs. The Exchange believes the proposed credits for BOE Bulk Ports encourages Market-Makers to continue to provide liquidity for the Exchange, notwithstanding the costs incurred by purchasing multiple ports. Particularly, the proposal is intended to mitigate the costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). While the Exchange cannot predict with certain which Market-Makers will reach Performance Tiers 4 and 5 each month, based on historical performance it anticipates approximately 10 Market-Makers to achieve Tiers 4 or 5. Lastly, the Exchange notes that it is common practice among options exchanges to differentiate fees for adding liquidity and fees for removing liquidity.[62]

Bandwidth Packets and CMI CAS Server Fees

The Exchange believes it's reasonable to eliminate Bandwidth Packet fees and the CMI CAS Server fee because TPHs will not pay fees for these connectivity options and

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[62] See e.g., MIAX Options Fees Schedule, Section 1(a), Market Maker Transaction Fees.

because Bandwidth Packets and CAS Servers will be retired and obsolete upon the upcoming migration. The Exchange believes that even though it will be discontinuing Bandwidth Packets, the proposed incremental pricing for Logical Ports and BOE Bulk Ports will continue to encourage users to mitigate message traffic. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Access Fees

The Exchange believes its proposed restructuring of its Trading Permits is reasonable in light of the changes to the Exchange's connectivity infrastructure in connection with the migration and the resulting separation of bandwidth allowance, logins and appointment costs from each Trading Permit. The Exchange also believes that it is reasonable to harmonize the Exchange's Trading Permit structure and corresponding connectivity options to more closely align with the structures offered at its Affiliated Exchanges once the Exchange is on a common platform as its Affiliated Exchanges.[63] The proposed Trading Permit structure and corresponding fees are also in line with the structure and fees provided by other exchanges. The proposed Trading Permit fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same type and number of Trading Permits.

With respect to electronic Trading Permits, the Exchange notes that TPHs currently request multiple Trading Permits because of bandwidth, login or appointment cost needs. As described above, upon migration, bandwidth, logins and appointment costs

63 For example, the Exchange's affiliate, C2, similarly provides for Trading Permits that are not tied to connectivity, and similar physical and logical port options at similar pricings. See Cboe C2 Options Exchange Fees Schedule. Physical connectivity and logical connectivity are also not tied to any type of permits on the Exchange's other options exchange affiliates.

will no longer be tied to Trading Permits or Bandwidth Packets and as such, the need to hold multiple permits and/or Bandwidth Packets will be obsolete. As such, the Exchange believes the proposed structure to require only one of each type of applicable electronic Trading Permit is appropriate. Moreover, the Exchange believes offering separate marketing making permits for off-floor and on-floor Market-Makers provides for a cleaner, more streamlined approach to trading permits and corresponding fees. Other exchanges similarly provide separate and distinct fees for Market-Makers that operate on-floor vs off-floor and their corresponding fees are similar to those proposed by the Exchange.[64]

The Exchange believes the proposed fee for its MM EAP Trading Permits is reasonable as it is the same fee it assess today for Market-Maker Trading Permits (i.e., \$5,000 per month per permit). Additionally, the proposed fee is in line with, and in some cases even lower than, the amounts assessed for similar access fees at other exchanges, including its affiliate C2.[65] The Exchange believes the proposed EAP fee is also reasonable, and in line with the fees assessed by other Exchanges for non-Market-Maker

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64 See e.g., PHLX Section 8A, Permit and Registration Fees. See also, BOX Options Fee Schedule, Section IX Participant Fees; NYSE American Options Fees Schedule, Section III(A) Monthly ATP Fees and NYSE Arca Options Fees and Charges, OTP Trading Participant Rights. For similar Trading Floor Permits for Floor Market Makers, Nasdaq PHLX charges \$6,000; BOX charges up to \$5,500 for 3 registered permits in addition to a \$1,500 Participant Fee, NYSE Arca charges up to \$6,000; and NYSE American charges up to \$8,000.

65 See e.g., Cboe C2 Options Exchange Fees Schedule. See also, NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees, which assesses up to \$6,000 per Market Maker OTP and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees, which assess up to \$8,000 per Market Maker ATP. See also, PHLX Section 8A, Permit and Registration Fees, which assesses up to \$4,000 per Market Maker Permit.

electronic access.[66] The Exchange notes that while the Trading Permit fee is increasing, TPHs overall cost to access the Exchange may be reduced in light of the fact that a TPH no longer must purchase multiple Trading Permits, Bandwidth Packets and Login Ids in order to receive sufficient bandwidth and logins to meet their respective business needs. To illustrate the value of the new connectivity infrastructure, the Exchange notes that the cost that would be incurred by a TPH today in order to receive the same amount of order capacity that will be provided by a single Logical Port post-migration (i.e., 5,000 orders per second), is approximately 98% higher than the cost for the same capacity post-migration. The following examples further demonstrate potential cost savings/value added for an EAP holder with modest capacity needs and an EAP holder with larger capacity needs:

TPH that holds 1 EAP, no Bandwidth Packets and 1 CMI login

	Current Fee Structure	**Post-Migration Fee Structure**
EAP	$1,600	$3,000
CMI Login /Logical Port	$750	$750
Bandwidth Packets	0	N/A
Total Bandwidth Available	30 orders/sec	5,000 orders/sec
Total Cost	$2,350	$3,750
Total Cost per message	$78.33/order/sec	$0.75/order/sec

TPH that holds 1 EAP, 4 Bandwidth Packets and 15 CMI logins

	Current Fee Structure	**Post-Migration Fee Structure**
EAP	$1,600	$3,000
CMI Login /Logical Port	$11,250 (15@750)	$750
Bandwidth Packets	$6,400 (4@$1,600)	N/A
Total Bandwidth Available	150 orders/sec	5,000 orders/sec

66 See e.g., PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Permit for all member and member organizations other than Floor Specialists and Market Makers.

Total Cost	$19,250	$3,750
Total Cost per message	$128.33/order/sec	$0.75/order/sec

The Exchange believes the proposal to adopt a new Clearing TPH Permit is reasonable because it offers TPHs that only clear transactions of TPHs a discount. Particularly, Clearing TPHs that also submit orders electronically to the Exchange would purchase the proposed EAP at $3,000 per permit. The Exchange believe it's reasonable to provide a discount to Clearing TPHs that only clear transactions and do not otherwise submit electronic orders to the Exchange. The Exchange notes that another exchange similarly charges a separate fee for clearing firms.[67]

The Exchange believes the proposed fee structure for on-floor Market-Makers is reasonable as the fees are in line with those offered at other Exchanges.[68] The Exchange believes that the proposed fee for MM Floor Permits as compared to MM EAPs is reasonable because it is only modestly higher than MM EAPs and Floor MMs don't have other costs that MM EAP holders have, such as MM EAP Appointment fees.

The Exchange believes its proposed fees for Floor Broker Permits are reasonable because the fees are similar to, and in some cases lower than, the fees the Exchange currently assesses for such permits. Specifically, 60% of TPHs that hold Floor Broker Trading Permits will be pay lower Trading Permit fees. Particularly, any Floor Broker holding ten or less Floor Broker Trading Permits will pay lower fees under the proposed tiers as compared to what they pay today. While the remaining 40% of TPHs holding Floor Broker Trading Permits (who each hold between 12-21 Floor Broker Trading Permits) will

67 See e.g., NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees.

68 See e.g., PHLX Section 8A, Permit and Registration Fees, which assesses $6,000 per permit for Floor Specialists and Market Makers.

pay higher fees, the Exchange notes the monthly increase is de minimis, ranging from an increase of 0.6% - 2.72%[69].

The Exchange believes the proposed ADV Discount is reasonable because it provides an opportunity for Floor Brokers to pay lower FB Trading Permit fees, similar to the current rebate program offered to Floor Brokers. The Exchange notes that while the new ADV Discount program includes only customer volume ("C" origin code) as compared to Customer and Professional Customer/Voluntary Professional, the amount of Professional Customer/Voluntary Professional volume was de minimis and the Exchange does not believe the absence of such volume will have a significant impact.[70] Additionally, the Exchange notes that while the ADV requirements under the proposed ADV Discount program are higher than are required under the current rebate program, the proposed ADV Discount counts volume from all products towards the thresholds as compared to the current rebate program which excludes volume from Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades. Moreover, the ADV Discount is designed to encourage the execution of orders in all classes via open outcry, which may increase volume, which would benefit all market participants (including Floor Brokers who do not hit the ADV thresholds) trading via open outcry (and indeed, this increased volume could make it possible for some Floor Brokers to hit the ADV thresholds). The Exchange believes the proposed discounts are equitable and not unfairly discriminatory because all Floor Brokers are eligible. While the Exchange has no way of predicting with certainty how many and which TPHs will

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69 The Floor Brokers whose fees are increasing have each committed to a minimum number of permits and therefore currently receive the rates set forth in the current Floor Broker TP Sliding Scale.

70 Furthermore, post-migration the Exchange will not have Voluntary Professionals.

satisfy the various thresholds under the ADV Discount, the Exchange anticipates approximately 3 Floor Brokers to receive a rebate under the program.

The Exchange believes its proposed MM EAP Appointment fees are reasonable in light of the Exchange's elimination of appointment costs tied to Trading Permits. Other exchanges also offer a similar structure with respect to fees for appointment classes.[71] Additionally, the proposed MM EAP Appointment fee structure results in approximately 36% electronic MMs paying lower fees for trading permit and appointment costs. For example, in order to have the ability to make electronic markets in every class on the Exchange, a Market-Maker would need 1 Market-Maker Trading Permit and 37 Appointment Units post-migration. Under, the current pricing structure, in order for a Market-Maker to quote the entire universe of available classes, a Market-Maker would need 33 Appointment Credits, thus necessitating 33 Market-Maker Trading Permits. With respect to fees for Trading Permits and Appointment Unit Fees, under the proposed pricing structure, the cost for a TPH wishing to quote the entire universe of available classes is approximately 29% less (if they are not eligible for the MM TP Sliding Scale) or approximately 2% less (if they are eligible for the MM TP Sliding Scale). To further demonstrate the potential cost savings/value added, the Exchange is providing the following examples comparing current Market-Maker connectivity and access fees to projected connectivity and access fees for different scenarios. The Exchange notes that the below examples not only compare Trading Permit and Appointment Unit costs, but also the cost incurred for logical connectivity and bandwidth. Particularly, the first

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71 See e.g., PHLX Section 8. Membership Fees, B, Streaming Quote Trader ("SQT") Fees and C. Remote Market Maker Organization (RMO) Fee.

example demonstrates the total minimum cost that would be incurred today in order for a Market-Maker to have the same amount of capacity as a Market-Maker post-migration that would have only 1 MM EAP and 1 Logical Port (i.e., 15,000 quotes/3 sec). The Exchange is also providing examples that demonstrate the costs of (i) a Market-Maker with small capacity needs and appointment unit of 1.0 and (ii) a Market-Maker with large capacity needs and appointment cost/unit of 30.0:

Market-Maker that needs capacity of 15,000/quotes/3 seconds

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permit / MM EAP	$5,000	$5,000
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit)
CMI Login / Logical Port	$750[72]	$750
Bandwidth Packets	$5,500 (2@$2,750)	N/A
Total Bandwidth Available	15,000 quotes/3 sec	15,000 quotes/3 sec
Total Cost	$11,250	$5,750
Total Cost per message allowed	$0.75/quote/3 sec	$0.38/quote/3 sec

Market Maker that needs capacity of no more than 5,000 quotes/3 secs

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permit / MM EAP	$5,000	$5,000
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit)
CMI Login / Logical Port	$750	$750
Bandwidth Packets	0	N/A
Total Bandwidth Available	5,000 quotes/3 sec	15,000 quotes/3 sec
Total Cost	$5,750	$5,750
Total Cost per message allowed	$1.15/quote/3 sec	$0.38/quote/3 sec

Market-Maker that needs 30 Appointment Units and capacity of 300,000 quotes/3 sec

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72 The maximum quoting bandwidth that may be applied to a single Login Id is 80,000 quotes/3 sec.

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permits / MM EAP	$105,000 (30 MM Permits assumes eligible for MM TP Sliding Scale)[73]	$5,000
Appointment Units Cost	N/A (30 appointment costs)	$95,500 (30 appointment units)
CMI Logins / BOE Bulk Port	$3,000 (4@$750)[74]	$3,000 (2 BOE Bulk@$1,500)
Bandwidth Packets	$82,500(30@$2750)	N/A
Total Bandwidth Available	300,000 quotes/3 sec	*450,000 quotes/3 sec
Total Cost	$190,500	$103,500
Total Cost per message allowed	$0.63/quotes/3 sec	$0.23/quote/3 sec

**possible performance degradation at 15,000 messages per second*

The Exchange believes its proposal to provide separate fees for Tier Appointments for MM EAPs and MM Floor Permits as the Exchange will be issuing separate Trading Permits for on-floor and off-floor market making as discussed above. The proposal to increase the electronic volume thresholds for VIX and RUT are reasonable as those that do not regularly trade VIX or RUT in open-outcry will continue to not be assessed the fee. In fact, any TPH that executes more than 100 contracts but less than 1,000 in the respective classes will no longer have to pay the proposed Tier Appointment fee. As noted above, the Exchange is not proposing to change the amounts assessed for each Tier Appointment Fee. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Trading Permit Holder Regulatory Fee

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73 For simplicity of the comparison, this assumes no appointments in SPX, VIX, RUT, XEO or OEX (which are not included in the TP Sliding Scale).

74 Given the bandwidth limit per Login Id of 80,000 quotes/3 sec, example assumes Market-Maker purchases minimum amount of Login IDs to accommodate 300,000 quotes/3 sec.

The Exchange believes it's reasonable to eliminate the Trading Permit Holder Regulatory fee because TPHs will not pay this fee and because the Exchange is restructuring its Trading Permit structure. The Exchange notes that although it will less closely be covering the costs of regulating all TPHs and performing its regulatory responsibilities, it still has sufficient funds to do so. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

The Exchange believes corresponding changes to eliminate obsolete language in connection with the proposed changes described above and to relocate and reorganize its fees in connection with the proposed changes maintain clarity in the Fees Schedule and alleviate potential confusion, thereby removing impediments to and perfecting the mechanism of a free and open market and a national market system, and, in general, protecting investors and the public interest.

Item 4. <u>Self-Regulatory Organization's Statement on Burden on Competition</u>

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With respect to intra-market competition, the Exchange does not believe that the proposed rule change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As stated above, the Exchange does not believe its proposed pricing will impose a barrier to entry to smaller participants and notes that its proposed connectivity pricing is associated with relative usage of the various market participants. For example, market participants with modest capacity needs can buy the less expensive 1 Gb Physical Port and utilize only one Logical Port. Moreover, the pricing for 1 Gb Physical Ports and FIX/BOE Logical Ports are no different than are assessed today (i.e., $1,500 and $750 per port, respectively), yet the capacity and access associated with each is greatly increasing. While pricing may be increased for larger capacity physical and logical ports, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed connectivity fees do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation reflects the network resources consumed by the various size of market participants – lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pays the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange.

The Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed in the Statutory Basis section above, options market participants are not forced to connect to (or purchase market data from) all options exchanges, as shown by the number of TPHs at Cboe and shown by the fact that there are varying number of members across each of Cboe's Affiliated Exchanges. The Exchange operates in a highly competitive environment, and its ability to price access and connectivity is constrained by competition among exchanges and third parties. As discussed, there are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or taking the exchange's data indirectly. For example, there are 15 other U.S. options exchanges, which the Exchange must consider in its pricing discipline in order to compete for market participants. In this competitive environment, market participants are free to choose which competing exchange or reseller to use to satisfy their business needs. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges. Accordingly, the Exchange does not believe its proposed fee change imposes any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

Item 5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

Item 6. Extension of Time Period for Commission Action

Not applicable.

Item 7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2) or Section 19(b)(7)(D)

(a) The proposed rule change is filed for immediate effectiveness pursuant to Section 19(b)(3)(A) of the Act[75] and Rule 19b-4(f)(2)[76] thereunder.

(b) The Exchange designates that the proposed rule change establishes or changes a due, fee, or other charge imposed by the Exchange, which renders the proposed rule change effective upon filing with the Securities and Exchange Commission (the "Commission"). At any time within 60 days of the filing of this proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the

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75 15 U.S.C. 78s(b)(3)(A).

76 17 CFR 240.19b-4(f)(2).

protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

(c) Not applicable.

(d) Not applicable.

Item 8. Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

The proposed rule change is not based on a rule either of another self-regulatory organization or of the Commission.

Item 9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

Item 10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

Item 11. Exhibits

Exhibit 1. Completed Notice of Proposed Rule Change for publication in the Federal Register.

Exhibit 5. Proposed rule text.

EXHIBIT 1

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-   ; File No. SR-CBOE-2019-082]

[Insert date]

Self-Regulatory Organizations; Cboe Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to Amend its Fees Schedule in Connection with Migration

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"),[1] and Rule 19b-4 thereunder,[2] notice is hereby given that on [insert date], Cboe Exchange, Inc. (the "Exchange" or "Cboe Options") filed with the Securities and Exchange Commission (the "Commission") the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

Cboe Exchange, Inc. (the "Exchange" or "Cboe Options") proposes to amend its Fees Schedule in connection with migration. The text of the proposed rule change is provided in Exhibit 5.

The text of the proposed rule change is also available on the Exchange's website (http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

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1 15 U.S.C. 78s(b)(1).

2 17 CFR 240.19b-4.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

In 2016, the Exchange's parent company, Cboe Global Markets, Inc. (formerly named CBOE Holdings, Inc.) ("Cboe Global"), which is also the parent company of Cboe C2 Exchange, Inc. ("C2"), acquired Cboe EDGA Exchange, Inc. ("EDGA"), Cboe EDGX Exchange, Inc. ("EDGX" or "EDGX Options"), Cboe BZX Exchange, Inc. ("BZX" or "BZX Options"), and Cboe BYX Exchange, Inc. ("BYX" and, together with Cboe Options, C2, EDGX, EDGA, and BZX, the "Cboe Affiliated Exchanges"). The Cboe Affiliated Exchanges are working to align certain system functionality, including with respect to connectivity, retaining only intended differences between the Cboe Affiliated Exchanges, in the context of a technology migration. The Exchange intends to migrate its trading platform to the same system used by the Cboe Affiliated Exchanges, which the Exchange expects to complete on October 7, 2019 (the "migration"). As a result of this migration, the Exchange's current connectivity architecture will be rendered obsolete, and as such, the Exchange must offer new functionality, including new logical connectivity, and adopt corresponding fees.[3]

[3] The Exchange notes that effective October 7, 2019, market participants will no longer have connectivity to the old Exchange architecture.

In determining the proposed fee changes, the Exchange assessed the impact on market participants to ensure that the proposed fees would not create a financial burden and have an undue impact on any market participants, including smaller market participants. Indeed, the Exchange notes that it anticipates its post-migration connectivity revenue to be approximately 1.75% lower than today. In addition to providing a consistent technology offering across the Cboe Affiliated Exchanges, the upcoming migration will also provide market participants a latency equalized infrastructure, improving trading performance, and increased sustained order and quote per second capacity, as discussed more fully below. Accordingly, in connection with the migration and in order to more closely align the Exchange's fee structure with that of its Affiliated Exchanges, the Exchange intends to update and simplify its fee structure with respect to access and connectivity and adopt new access and connectivity fees, effective October 1, 2019 (or as otherwise stated herein).[4]

Physical Connectivity

A physical port is utilized by a Trading Permit Holder ("TPH") or non-TPH to connect to the Exchange at the data centers where the Exchange's servers are located. The Exchange currently assesses fees for Network Access Ports for these physical connections to the Exchange. Specifically, TPHs and non-TPHs can elect to connect to Cboe Options' trading system via either a 1 gigabit per second ("Gb") Network Access Port or a 10 Gb Network Access Port. The Exchange currently assesses a monthly fee of $1,500 per port for 1 Gb Network Access Ports and a monthly fee of $5,000 per port for 10 Gb Network Access Ports for access to Cboe Options primary system. Through

4 The Exchange initially filed the proposed fee changes on October 1, 2019 (SR-CBOE-2019-077). On business date October 2, 2019, the Exchange withdrew that filing and submitted this filing.

January 31, 2020, Cboe Options market participants will continue to have the ability to connect to Cboe Options' trading system via the current Network Access Ports. For the month of October 2019, the Exchange will continue to assess the current fee for any legacy Network Access Port a TPH or non-TPH uses during the month of October. Effective November 1, 2019, the Exchange will assess the proposed fees described below for any physical port, regardless of whether the TPH or non-TPH connects via the current Network Access Ports or the new Physical Ports.

Effective October 7, 2019, in connection with the migration, TPHs and non-TPHs may alternatively elect to connect to Cboe Options via new latency equalized Physical Ports.[5] The new Physical Ports will similarly allow TPHs and non-TPHs the ability to connect to the Exchange at the data center where the Exchange's servers are located and TPHs and non-TPHs will have the option to connect via 1 Gb or 10 Gb Physical Ports. Effective November 1, 2019, the Exchange proposes to continue to assess a monthly fee of $1,500 per port for 1 Gb Physical Ports and increase the monthly fee for 10 Gb Physical Ports to $7,000 per port. The new Physical Port fees will be prorated based on the remaining trading days in the calendar month. The proposed fee for 10 Gb Physical Ports is in line with the amounts assessed by other exchanges for similar connections by its Affiliated Exchanges and other Exchanges.[6]

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5 As previously noted, market participants will continue to have the option of connecting to Cboe Options via a 1 Gbps or 10 Gbps Network Access Port and would be assessed current rates of $1,500 and $5,000 per port, respectively. If a TPH replaces a legacy Network Access Port with a new C1 latency equalized Physical Port in October 2019, the TPH will not be billed an additional fee for the new C1 platform physical connection until November 2019.

6 See Cboe EDGA U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BZX U.S. Equities Exchange Fee Schedule, Physical Connectivity

In addition to the benefits resulting from the new Physical Ports being latency equalized (i.e., faster connectivity), TPHs and non-TPHs may be able to reduce their overall physical connectivity fees. Particularly, the Fees Schedule currently provides that Network Access Port fees are assessed for unicast (orders, quotes) and multicast (market data) connectivity separately. More specifically, Network Access Ports may only receive one type of connectivity each (thus requiring a market participant to maintain two ports if that market participant desires both types of connectivity). The new Physical Ports however, will all allow access to both unicast and multicast connectivity with a single physical connection to the Exchange. Therefore, TPHs and non-TPHs that currently purchase two legacy Network Access Ports for the purpose of receiving each type of connectivity will have the option upon migration to purchase only one new Physical Port to accommodate their connectivity needs, which may result in reduced costs for physical connectivity.[7]

Fees; Cboe BYX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX Options Exchange Fee Schedule, Physical Connectivity Fees; and Cboe BZX Options Exchange Fee Schedule, Physical Connectivity Fees (collectively, "Affiliated Exchange Fee Schedules"). See e.g., Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. See also Nasdaq Price List – Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

7 The Exchange proposes to eliminate the current Cboe Command Connectivity Charges table in its entirety and create and relocate such fees in a new table in the Fees Schedule that addresses fees for physical connectivity, including fees for the current Network Access Ports, the new Physical Ports and Disaster Recovery ("DR") Ports. The Exchange notes that it is not proposing any changes with respect to DR Ports other than renaming the DR ports from "Network Access

Cboe Data Services – Port Fees

The Exchange proposes to amend the "Port Fee" under the Cboe Data Services ("CDS") Fees Schedule, effective October 1, 2019. Currently, the Port Fee is payable by any Customer that receives data through a direct connection to CDS ("direct connection") or through a connection to CDS provided by an extranet service provider ("extranet connection"). The Port Fee applies to receipt of any Cboe Options data feed but is only assessed once per data port. The Exchange proposes to amend the monthly CDS Port Fee to provide that it is payable "per source" used to receive data, instead of "per data port". The Exchange also proposes to increase the fee from $500 per data port/month to $1,000 per data source/month. In connection with the proposed change, the Exchange also proposes to rename the "Port Fee" to "Direct Data Access Fee". As the fee will be payable "per source" used to receive data, instead of "per data port", the Exchange believes the proposed name is more appropriate and that eliminating the term "port" from the fee will eliminate confusion as to how the fee is assessed. The Exchange notes the proposed change in assessing the fee (i.e., per source vs per port), the proposed fee amount and the proposed name are the same as the corresponding fee on its affiliate C2.[8]

Logical Connectivity

Next, the Exchange proposes to amend its login fees. By way of background, Cboe Options market participants may currently access Cboe Command via either a CMI or a FIX Port, depending on how their systems are configured. Effective October 7, 2019, market participants will no longer be able to use CMI and FIX Login IDs. Rather, the

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Ports" to "Physical Ports" to conform to the new Physical Port terminology.

8 See Cboe C2 Options Exchange Fee Schedule, Cboe Data Services, LLC Fees, Section IV, Systems Fees.

Exchange will utilize a variety of logical connectivity ports as further described below. Both a legacy CMI/FIX Login ID and proposed logical port represent a technical port established by the Exchange within the Exchange's trading system for the delivery and/or receipt of trading messages – i.e., orders, accepts, cancels, transactions, etc. Market participants that wish to connect directly to the Exchange can request a number of different types of ports, including ports that support order entry, customizable purge functionality, or the receipt of market data. Market participants can also choose to connect indirectly through a number of different third-party providers, such as another broker-dealer or service bureau that the Exchange permits through specialized access to the Exchange's trading system and that may provide additional services or operate at a lower mutualized cost by providing access to multiple members. In light of the upcoming discontinuation of CMI and FIX Login IDs, the Exchange proposes to eliminate the fees associated with the CMI and FIX login IDs effective October 1, 2019 and adopt the below pricing for logical connectivity in its place.

Service	**Cost per Month**
Logical Ports (BOE, FIX) 1 to 5	$750 per port
Logical Ports (BOE, FIX) > 5	$800 per port
Logical Ports (Drop)	$750 per port
BOE Bulk Ports 1 to 5	$1,500 per port
BOE Bulk Ports 6 to 30	$2,500 per port
BOE Bulk Ports >30	$3,000 per port
Purge ports	$850 per port
GRP Ports	$750/primary (A or C Feed)
Multicast PITCH/Top Spin Server Ports	$750/set of primary (A or C feed)

The Exchange proposes to provide for each of the logical connectivity fees that new requests will be prorated for the first month of service. Cancellation requests are billed in full month increments as firms are required to pay for the service for the remainder of the month, unless the session is terminated within the first month of service. The Exchange notes that the proration policy is the same on its Affiliated Exchanges.[9] The Exchange also proposes to make clear in the Fees Schedule that port fees for BOE, FIX, BOE Bulk and Drop ports will be assessed the full month rates for October for ports available for use on the new trading platform beginning October 7, 2019. The port fees for BOE, FIX, Drop and BOE Bulk ports added on or after October 8, 2019, will be pro-rated. The Exchange notes that BOE, FIX, Drop and BOE Bulk ports offer similar functionality as current CMI and FIX Login Ids. As such, in lieu of assessing the current CMI and FIX Login Id fees for the month of October, the Exchange proposes to assess the proposed Logical Ports and BOE Bulk Port fees at the full rate for the month of October for any of these ports subscribed to on the date of the migration (October 7, 2019). Fees for Purge, Spin Server and GRP will be pro-rated beginning October 7, as these ports can only be used within the new platform.

Logical Ports (BOE, FIX, Drop): The new Logical Ports represent ports established by the Exchange within the Exchange's system for trading purposes. Each Logical Port established is specific to a TPH or non-TPH and grants that TPH or non-TPH the ability to operate a specific application, such as order/quote[10] entry (FIX and BOE Logical Ports) or drop copies (Drop Logical Ports). Similar to CMI and FIX Login IDs, each Logical Port will entitle a firm to submit message traffic of up to specified

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9 See Affiliated Exchange Fee Schedules, Logical Port Fees.

10 Effective October 7, 2019, the definition of quote in Cboe Options Rule 1.1 shall mean a firm bid or offer a Market-Maker (a) submits electronically as an order or bulk message (including to update any bid or offer submitted in a previous order or bulk message) or (b) represents in open outcry on the trading floor.

number of orders per second.[11] The Exchange proposes to assess $750 per port per month for all Drop Logical Ports and also assess $750 per port per month (which is the same amount currently assessed per CMI/FIX Login ID per month), for the first 5 FIX/BOE Logical Ports and thereafter assess $800 per port, per month for each additional FIX/BOE Logical Port. While the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs (for the first five logical ports), the proposed logical ports provide for significantly more message traffic as shown below:

	CMI/FIX Login Ids		**BOE/FIX Logical Ports**
	Quotes	Orders	Quotes/Orders
Bandwidth Limit per login	5,000 quotes/3 sec[12]	30 orders/sec	15,000 quotes/orders/3 sec
Cost	$750 each	$750 each	$750/$800 each
Cost per Quote/Order Sent @ Limit	$0.15 per quote/3 sec	$25.00 per order/sec	$0.05/$0.053 per quote/order/3 sec

Logical Port fees will be limited to Logical Ports in the Exchange's primary data center and no Logical Port fees will be assessed for redundant secondary data center ports. Each BOE or FIX Logical Port will incur the logical port fee indicated in the table above when used to enter up to 70,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 70,000 per day

11 Login Ids restrict the maximum number of orders and quotes per second in the same way logical ports do, and Users may similarly have multiple logical ports as they may have Trading Permits and/or bandwidth packets to accommodate their order and quote entry needs.

12 Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing "quote" bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

per logical port will incur an additional logical port fee of $800 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE and FIX Logical Ports.[13] The Exchange believes that the pricing implications of going beyond 70,000 orders per trading day per Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed fee of $750 per port is the same amount assessed not only for current CMI and FIX Login Ids, but also similar ports available on its affiliate exchange.[14]

The Exchange also proposes to provide that the fee for one FIX Logical Port connection to PULSe and one FIX Logical Port connection to Cboe Silexx (for FLEX trading purposes) will be waived per TPH. The Exchange notes that only one FIX Logical Port connection is required to support a firm's access through each of PULSe and Cboe Silexx FLEX.

BOE Bulk Logical Ports: Post-migration, the Exchange will also offer BOE Bulk Logical Ports, which provide users with the ability to submit single and bulk order messages to enter, modify, or cancel orders designated as Post Only Orders with a Time-in-Force of Day or GTD with an expiration time on that trading day. While BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity, as the primary purpose of the proposed bulk message functionality is to encourage market-maker quoting on exchanges. As indicated above, BOE Bulk Logical Ports are assessed

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13 For October 2019, average daily order quantities used to determine incremental usage will be determined based on the number of trading days between October 7th and October 31st.

14 See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

$1,500 per port, per month for the first 5 BOE Bulk Logical Ports, assessed $2,500 per port, per month thereafter up to 30 ports and thereafter assessed $3,000 per port, per month for each additional BOE Bulk Logical Port. Like CMI and FIX Login IDs, and FIX/BOX Logical Ports, BOE Bulk Ports will also entitle a firm to submit message traffic of up to specified number of quotes/orders per second.[15] The proposed BOE Bulk ports also provide for significantly more message traffic as compared to current CMI/FIX Login IDs, as shown below:

	CMI/FIX Login Ids	**BOE Bulk Ports**
	Quotes	Quotes[16]
Bandwidth Limit	5,000 quotes/3 sec[17]	225,000 quotes 3 sec
Cost	$750 each	$1,500/$2,500/$3,000 each
Cost per Quote/Order Sent @ Limit	$0.15 per quote/3 sec	$0.006/$0.011/$0.013 per quote/3 sec

Each BOE Bulk Logical Port will incur the logical port fee indicated in the table above when used to enter up to 30,000,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 30,000,000 orders per day per BOE Bulk Logical Port will incur an additional logical port fee of

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15 The Exchange notes that while technically there is no bandwidth limit per BOE Bulk Port, there may be possible performance degradation at 15,000 messages per second (which is the equivalent of 225,000 quotes/orders per 3 seconds). As such, the Exchange uses the number at which performance may be degraded for purposes of comparison.

16 See Cboe Options Rule 1.1.

17 Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing "quote" bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

$3,000 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE Bulk Logical Ports.[18] The Exchange believes that the pricing implications of going beyond 30,000,000 orders per trading day per BOE Bulk Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed BOE Bulk Logical Port fees are similar to the fees assessed for these ports by BZX Options.[19]

Purge Ports: As part of the migration, the Exchange will be introducing Purge Ports to provide TPHs additional risk management and open order control functionality. The proposed ports are designed to assist TPHs, in the management of, and risk control over, their quotes, particularly if the TPH is dealing with a large number of options. Particularly, Purge Ports will allow TPHs to submit a cancelation for all open orders, or a subset thereof, across multiple sessions under the same Executing Firm ID ("EFID"). This would allow TPHs to seamlessly avoid unintended executions, while continuing to evaluate the direction of the market. While Purge Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity and are therefore exposed to a large amount of risk across a number securities. The Exchange notes that market participants will also be able to cancel orders through the proposed FIX/BOE Logical Ports and as such a dedicated Purge Port is not required nor necessary. Rather, Purge Ports were specially developed as an optional service to further assist firms in effectively managing risk. As

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18 For October 2019, average daily order quantities used to determine incremental usage will be determined based on the number of trading days between October 7th and October 31st.

19 See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

indicated in the table above, the Exchange proposes to assess a monthly charge of $850 per Purge Port. The Exchange notes that the proposed fee is in line with the fee assessed by other exchanges, including its Affiliated Exchanges, for Purge Ports.[20]

Multicast PITCH/Top Spin Server and GRP Ports: In connection with the migration, the Exchange will also offer optional Multicast PITCH/Top Spin Server ("Spin") and GRP ports and proposes to assess $750 per month, per port. Spin Ports and GRP Ports are used to request and receive a retransmission of data from the Exchange's Multicast PITCH/Top data feeds. The Exchange's Multicast PITCH/Top data feeds are available from two primary feeds, identified as the "A feed" and the "C feed", which contain the same information but differ only in the way such feeds are received. The Exchange also offers two redundant feeds, identified as the "B feed" and the "D feed." All secondary feed Spin and GRP Ports will be provided for redundancy at no additional cost. The Exchange notes a dedicated Spin and GRP Port is not required nor necessary. Rather, Spin ports enable a market participant to receive a snapshot of the current book quickly in the middle of the trading session without worry of gap request limits and GRP Ports were specially developed to request and receive retransmission of data in the event of missed or dropped message. The Exchange notes that the proposed fee is in line with the fee assessed for the same ports on BZX Options.[21]

Access Credits

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20 See e.g., Nasdaq ISE Options Pricing Schedule, Section 7(C), Ports and Other Services. See also Cboe EDGX Options Exchange Fee Schedule, Options Logical Port Fees; Cboe C2 Options Exchange Fee Schedule, Options Logical Port Fees and Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

21 See Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

The Exchange next proposes to amend its Affiliate Volume Program ("AVP") to provide Market-Makers an opportunity to obtain credits on their monthly BOE Bulk Port Fees.[22] By way of background, under AVP, if a TPH Affiliate[23] or Appointed OFP[24] of a Market-Maker qualifies under the Volume Incentive Program ("VIP"), that Market-Maker will also qualify for a discount on that Market-Maker's Liquidity Provider ("LP") Sliding Scale transaction fees and Trading Permit fees. The Exchange proposes to amend AVP to provide that qualifying Market-Makers will receive a discount on Bulk Port fees (instead of Trading Permits). As discussed more fully below, the Exchange is amending its Trading Permit structure, such that off-floor Market-Makers no longer need to hold more than one Market-Maker Trading Permit. As such, in place of credits for Trading Permits, the Exchange will provide credits for BOE Bulk Ports.[25] The proposed credits are as follows:

Market Maker Affiliate Access Credit	VIP Tier	% Credit on Monthly BOE Bulk Port Fees
Credit Tier	1	0%
	2	0%

22 As noted above, while BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market Makers or firms that conduct similar business activity.

23 For purposes of AVP, "Affiliate" is defined as having at least 75% common ownership between the two entities as reflected on each entity's Form BD, Schedule A.

24 See Cboe Options Fees Schedule Footnote 23. Particularly, a Market-Maker may designate an Order Flow Provider ("OFP") as its "Appointed OFP" and an OFP may designate a Market-Maker to be its "Appointed Market-Maker" for purposes of qualifying for credits under AVP.

25 The Exchange notes that Trading Permits currently each include a set bandwidth allowance and 3 logins. Current logins and bandwidth are akin to the proposed logical ports, including BOE Bulk Ports which will primarily be used by Market-Makers.

	3	0%
	4	15%
	5	25%

The Exchange believes the proposed change to AVP continues to allow the Exchange to provide TPHs that have both Market-Maker and agency operations reduced Market-Maker costs via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees.

In addition to the opportunity to receive credits via AVP, the Exchange proposes to provide an opportunity for Market-Makers to obtain credits on their monthly BOE Bulk Port fees based on the previous month's make rate percentage. By way of background, the Liquidity Provider Sliding Scale Adjustment Table provides that Taker fees be applied to electronic "Taker" volume and a Maker rebate be applied to electronic "Maker" volume, in addition to the transaction fees assessed under the Liquidity Provider Sliding Scale.[26] The amount of the Taker fee (or Maker rebate) is determined by the Liquidity Provider's percentage of volume from the previous month that was Maker ("Make Rate").[27] Market-Makers are given a Performance Tier based on their Make Rate

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[26] See Cboe Options Exchange Fees Schedule, Liquidity Provider Sliding Scale Adjustment Table.

[27] More specifically, the Make Rate is derived from a Liquidity Provider's electronic volume the previous month in all symbols excluding Underlying Symbol List A using the following formula: (i) the Liquidity Provider's total electronic automatic execution ("auto-ex") volume (i.e., volume resulting from that Liquidity Provider's resting quotes or single sided quotes/orders that were executed by an incoming order or quote), divided by (ii) the Liquidity Provider's total auto-ex volume (i.e., volume that resulted from the Liquidity Provider's resting quotes/orders and volume that resulted from that LP's quotes/orders that removed liquidity). For example, a TPH's electronic Make volume in September 2019 is 2,500,000 contracts and its total electronic auto-ex volume is 3,000,000 contracts, resulting in a Make Rate of 83% (Performance Tier 4). As such, the TPH would receive a 40% credit on its monthly Bulk Port fees for the month of October 2019.

percentage which currently provides adjustments to transaction fees. Thus, the program is designed to attract liquidity from traditional Market-Makers. The Exchange proposes to additionally provide that the Performance Tier earned will determine the percentage credit applied to a Market-Maker's monthly BOE Bulk Port fees.

Market Maker Access Credit	Liquidity Provider Sliding Scale Adjustment Performance Tier	Make Rate (% Based on Prior Month)	% Credit on Monthly BOE Bulk Port Fees
Credit Tier	1	0%-50%	0%
	2	Above 50% - 60%	0%
	3	Above 60% - 75%	0%
	4	Above 75% - 90%	40%
	5	Above 90%	40%

The Exchange believes the proposal mitigates costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). The Exchange lastly notes that both the Market-Maker Affiliate Access Credit and Market-Maker Access Credit both can be earned by a TPH, and these credits will each apply to the total monthly BOE Bulk Port Fees including any incremental BOE Bulk Port fees incurred, before any credits/adjustments have been applied (i.e. an electronic MM can earn a credit from 15% to 65%).

<u>Bandwidth Packets</u>

For the month of October 2019, the Exchange will be billing certain incentive programs separately, including the Liquidity Provider Sliding Scale Adjustment Table, for the periods of October 1 – October 4 and October 7 – October 31 in light of the migration of its billing system. As such, a Market-Maker's Performance Tier for November 2019 will be determined by the Market-Maker's percentage of volume that was Maker from the period of October 7 - October 31, 2019.

As described above, post-migration, the Exchange will utilize a variety of logical ports. Part of this functionality is similar to bandwidth packets currently available on the Exchange. Bandwidth packets restrict the maximum number of orders and quotes per second. Post-migration, market participants may similarly have multiple Logical Ports and/or BOE Bulk Ports as they may have bandwidth packets to accommodate their order and quote entry needs. As such, the Exchange proposes to eliminate all of the current Bandwidth Packet fees, effective October 1, 2019.[28] The Exchange believes that the proposed pricing implications of going beyond specified bandwidth described above in the logical connectivity fees section will be able to otherwise mitigate message traffic as necessary.

CAS Servers

By way of background, in order to connect to Cboe Command, which allows a TPH to trade on the Cboe Options System, a TPH must connect via either a CMI or FIX interface (depending on the configuration of the TPH's own systems). For TPHs that connect via a CMI interface, they must use CMI CAS Servers. In order to ensure that a CAS Server is not overburdened by quoting activity for Market-Makers, the Exchange currently allots each Market-Maker a certain number of CASs (in addition to the shared backups) based on the amount of quoting bandwidth that they have. Post-migration, the Exchange will no longer use CAS Servers. In light of the upcoming elimination of CAS Servers, the Exchange proposes to eliminate the CAS Server allotment table and extra CAS Server fee, effective October 1, 2019.

Trading Permit Fees

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[28] See Cboe Options Fees Schedule, Bandwidth Packet Fees.

By way of background, the Exchange may issue different types of Trading Permits and determine the fees for those Trading Permits.[29] The Exchange currently issues the following three types of Trading Permits: (1) Market-Maker Trading Permits, which are assessed a monthly fee of $5,000 per permit; (2) Floor Broker Trading Permits, which are assessed a monthly fee of $9,000 per permit; and (3) Electronic Access Permits ("EAPs"), which are assessed a monthly fee of $1,600 per. The Exchange also offers separate Market-Maker and Electronic Access Permit for the Global Trading Hours ("GTH") session, which are assessed a monthly fee of $1,000 per permit and $500 per permit respectively.[30] For further color, a Market-Maker Trading Permit currently entitles the holder to act as a Market-Maker, including a Market-Maker trading remotely, DPM, eDPM, or LMM, and also provides an appointment credit of 1.0, a quoting and order entry bandwidth allowance, up to three logins, trading floor access and TPH status.[31] A Floor Broker Trading Permit entitles the holder to act as a Floor Broker, provides an order entry bandwidth allowance, up to 3 logins, trading floor access and TPH status.[32] Lastly, an EAP entitles the holder to electronic access to the Exchange. Holders of EAPs must be broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing TPH, (b) TPH organization approved to transact business with the public, (c) Proprietary TPHs and (d) order service firms. The permit does not provide access to the trading floor. An EAP also provides an order entry bandwidth allowance, up to 3 logins and TPH status.[33] The

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29 See Cboe Options Rules 3.1(a)(iv)-(v).

30 The fees are currently waived through September 2019 for the first Market-Maker and Electronic Access GTH Trading Permits.

31 See Cboe Options Fees Schedule.

32 Id.

33 Id.

Exchange also provides an opportunity for TPHs to pay reduced rates for Trading Permits via the Market Maker and Floor Broker Trading Permit Sliding Scale Programs ("TP Sliding Scales"). Particularly, the TP Sliding Scales allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year.[34]

As noted above, Trading Permits are currently tied to bandwidth allocation, logins and appointment costs, and as such, TPH organizations may hold multiple Trading Permits of the same type in order to meet their connectivity and appointment cost needs. Post-Migration, bandwidth allocation, logins and appointment costs will no longer be tied to a Trading Permit, and as such, the Exchange proposes to modify its Trading Permit structure. Particularly, effective October 7, 2019, the Exchange will adopt separate on-floor and off-floor Trading Permits for Market-Makers and Floor Brokers, adopt a new Clearing TPH Permit, and modify the corresponding fees and discounts. As is the case today, the proposed access fees discussed below will continue to be non-refundable and will be assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-

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[34] Due to the October 7 migration, the amended the TP Sliding Scale Programs to provide that any commitment to Trading Permits under the TP Sliding Scales shall be in place through September 2019, instead of the calendar year. See Cboe Options Fees Schedule, Footnotes 24 and 25.

to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Trading Permit Holders will only be assessed a single monthly fee for each type of electronic Trading Permit it holds. All Trading Permits will be assessed the full proposed monthly rates, as described below, based on the quantity of Trading Permits a TPH maintains from October 7 – October 31, 2019.[35]

First, as proposed, TPHs will no longer need to hold multiple permits for each type of electronic Trading Permit (i.e., electronic Market-Maker Trading Permits and/or and Electronic Access Permits). Rather, the Exchange proposes to provide that for electronic access to the Exchange, a TPH need only purchase one of the following permit types for each trading function the TPH intends to perform: Market-Maker Electronic Access Permit ("MM EAP") in order to act as an off-floor Market-Maker and which will continue to be assessed a monthly fee of $5,000, Electronic Access Permit ("EAP") in order to submit orders electronically to the Exchange[36] and which will be assessed a monthly fee of $3,000, and a Clearing TPH Permit, for TPHs acting solely as a Clearing TPH, which will be assessed a monthly fee of $2,000 (and is more fully described below). For example, a TPH organization that wishes to act as a Market-Maker and also submit orders electronically in a non-Market Maker capacity would have to purchase one MM EAP and one EAP. TPHs will be assessed the monthly fee for each type of Permit once per electronic access capacity.

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35 The Exchange proposes to eliminate the current Trading Permit fees, effective October 1, 2019 and for the month of October 2019 will instead assess the full proposed rates for the Trading Permits held by a TPH from October 7, 2019-October 31, 2019.

36 EAPs may be purchased by TPHs that both clear transactions for other TPHs (i.e., a "Clearing TPH") and submit orders electronically.

Next, the Exchange proposes to adopt a new Trading Permit, exclusively for Clearing TPHs that are approved to act solely as a Clearing TPH (as opposed to those that are also approved in a capacity that allows them to submit orders electronically). Currently any TPH that is registered to act as a Clearing TPH must purchase an EAP, whether or not that Clearing TPH acts solely as a Clearing TPH or acts as a Clearing TPH and submits orders electronically. The Exchange proposes to adopt a new Trading Permit, for any TPH that is registered to act solely as Clearing TPH at a discounted rate of $2,000 per month.[37]

Additionally, the Exchange proposes to eliminate its fees for Global Trading Hours Trading Permits. Particularly, the Exchange proposes to provide that any Market-Maker EAP, EAP and Clearing TPH Permit provides access (at no additional cost) to the GTH session.[38] Additionally, the Exchange proposes to amend Footnote 37 of the Fees Schedule regarding GTH in connection with the migration. Currently Footnote 37 provides that separate access permits and connectivity is needed for the GTH session. The Exchange proposes to eliminate this language as that will no longer be the case upon migration (i.e., an electronic Trading Permits will grant access to both sessions and physical and logical ports may be used in both sessions, eliminating the need to purchase separate connectivity). The Exchange also notes that upon migration, the Book used

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37 Cboe Option Rules provides the Exchange authority to issue different types of Trading Permits which allows holders, among other things, to act in one or more trading functions authorized by the Rules. See Cboe Options Rule 3.1(a)(iv). The Exchange notes that currently 4 out of 38 Clearing TPHs are approved to act solely as a Clearing TPH.

38 The Exchange notes that Clearing TPHs must be properly authorized by the Options Clearing Corporation ("OCC") to operate during the Global Trading Hours session and all TPHs must have a Letter of Guarantee to participate in the GTH session (as is the case today).

during Regular Trading Hours ("RTH") will be the same Book used during GTH (as compared to today where the Exchange maintains separate Books for each session). The Exchange therefore also proposes to eliminate language in Footnote 37 stating that GTH is a segregated trading session and that there is no market interaction between the two sessions.

The Exchange next proposes to adopt MM EAP Appointment fees. By way of background, a registered Market-Maker may currently create a Virtual Trading Crowd ("VTC") Appointment, which confers the right to quote electronically in an appropriate number of classes selected from "tiers" that have been structured according to trading volume statistics, except for the AA tier.[39] Each Trading Permit currently held by a Market-Maker has an appointment credit of 1.0. A Market-Maker may select for each Trading Permit the Market-Maker holds any combination of classes whose aggregate appointment cost does not exceed 1.0. A Market-Maker may not hold a combination of appointments whose aggregate appointment cost is greater than the number of Trading Permits that Market-Maker holds.[40]

As discussed, post-migration, bandwidth allocation, logins and appointment costs will no longer be tied to a single Trading Permit and therefore the Exchange is proposing to provide that TPHs no longer need to have multiple permits for each type of electronic Trading Permit. As proposed however, upon migration, Market-Makers must still select

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[39] See proposed Cboe Options Rule 5.50 (Appointment of Market-Makers), which rule will be effective October 7, 2019.

[40] For example, if a Market-Maker selects a combination of appointments that has an aggregate appointment cost of 2.5, that Market-Maker must hold at least 3 Market-Maker Trading Permits.

class appointments in the classes they seek to make markets electronically.[41] Particularly, a Market-Maker firm will only be required to have one permit and will thereafter be charged for one or more "Appointment Units" (which will scale from 1 "unit" to more than 5 "units"), depending on which classes they elect appointments in. Appointment Units will replace the standard 1.0 appointment cost, but function in the same manner. Appointment weights (formerly known as "appointment costs") for each appointed class will be set forth in proposed Cboe Options Rule 5.50(g) and will be summed for each Market-Maker in order to determine the total appointment units, to which fees will be assessed. This is the current manner in which the tier costs per class appointment are summed to meet the 1.0 appointment cost, the only difference will be that if a Market-Maker exceeds this "unit" then their fees will be assessed under the "unit" that corresponds to the total of their appointment weights, as opposed to holding another Trading Permit because it exceeded the 1.0 "unit". Particularly, the Exchange proposes to adopt a new MM EAP Appointment Sliding Scale. Appointment Units for each assigned class will be aggregated for each Market-Maker and Market-Maker affiliate. If the sum of appointments is a fractional amount, the total will be rounded up to the next highest whole Appointment Unit. The following lists the progressive monthly fees for Appointment Units[42]:

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41 See Proposed Cboe Options Rule 5.50(a), which rule will be effective October 7, 2019.

42 For example, if a Market-Maker's total appointment costs amount to 3.5 unites, the Market-Maker will be assessed a total monthly fee of $14,000 (1 appointment unit at $0, 1 appointment unit at $6,000 and 2 appointment units at $4,000) as and for appointment fees and $5,000 for a Market-Maker Trading Permit, for a total monthly sum of $19,000, where a Market-Maker currently (i.e., prior to migration) with a total appointment cost of 3.5 would need to hold 4 Trading Permits and would therefore be assessed a monthly fee of $20,000.

Market –Maker EAP Appointments	Quantity	Monthly Fees (per unit)
Appointment Units	1	$0
	2	$6,000
	3 to 5	$4,000
	> 5	$3,100

As noted above, upon migration the Exchange will have separate Trading Permits for on-floor and off-floor activity. As such, the Exchange proposes to maintain a Floor Broker Trading Permit and adopt a new Market-Maker Floor Permit for on-floor Market-Makers. In addition, RUT, SPX, and VIX Tier Appointment fees will be charged separately for Permit, as discussed more fully below.

As briefly described above, the Exchange currently maintains TP Sliding Scales, which allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year. The Exchange proposes to eliminate the current TP Sliding Scales, including the requirement to commit to a specific tier, and replace it with new TP Sliding Scales as follows[43]:

Floor TPH Permits	Current Permit Qty	Current Monthly Fee (per permit)	Proposed Permit Qty	Proposed Monthly Fee (per permit)
Market-Maker Floor Permit	1 – 10	$5,000	1	$6,000
	11 - 20	$3,700	2 to 5	$4,500
	21 or more	$1,800	6 to 10	$3,500
			> 10	$2,000
Floor Broker Permit	1	$9,000	1	$7,500
	2 - 5	$5,000	2 to 3	$5,700
	6 or more	$3,000	4 to 5	$4,500

43 In light of the proposed change to eliminate the TP Sliding Scale, the Exchange proposes to eliminate Footnote 24 in its entirety.

			> 5	$3,200

Floor Broker ADV Discount

Footnote 25, which governs rebates on Floor Broker Trading Permits, currently provides that any Floor Broker that executes a certain average of customer or professional customer/voluntary customer (collectively "customer") open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades ("Qualifying Symbols"), will receive a rebate on that TPH's Floor Broker Trading Permit Fees. Specifically, any Floor Broker Trading Permit Holder that executes an average of 15,000 customer ("C" origin code) and/or professional customer and voluntary customer ("W" origin code) open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $9,000 on that TPH's Floor Broker Trading Permit fees. Additionally, any Floor Broker that executes an average of 25,000 customer open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $14,000 on that TPH's Floor Broker Trading Permit fees. The Exchange proposes to maintain, but modify, its discount for Floor Broker Trading Permit fees. First, the measurement criteria to qualify for a rebate will be modified to only include customer ("C" origin code) open-outcry contracts executed per day over the course of a calendar month in all underlying symbols, while the rebate amount will be modified to be a percentage of the TPH's Floor Broker Permit total costs, instead of a straight rebate.[44] The criteria and corresponding percentage rebates are noted below[45].

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[44] As is the case today, the Floor Broker ADV Discount will be available for all

Floor Broker ADV Discount Tier	ADV	Floor Broker Permit Rebate
1	0 to 99,999	0%
2	100,000 to 174,999	15%
3	> 174,999	25%

Next, the Exchange proposes to modify its SPX, VIX and RUT Tier Appointment Fees. Currently, these fees are assessed to any Market-Maker TPH that either (i) has the respective SPX, VIX or RUT appointment at any time during a calendar month and trades a specified number of contracts or (ii) trades a specified number of contracts in open outcry during a calendar month. More specifically, the $3,000 per month SPX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 SPX contracts while that appointment is active or (ii) conducts any open outcry transaction in SPX or SPX Weeklys at any time during the month. The $2,000 per month VIX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 VIX contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in VIX at any time during the month. Lastly, the $1,000 RUT Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an RUT Tier Appointment at any time during a calendar month and trades at least 100 RUT contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in RUT at any time during the month. Because the Exchange is

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Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations.

45 In light of the proposal to eliminate the TP Sliding Scales and the Floor Broker rebates currently set forth under Footnote 25, the Exchange proposes to eliminate Footnote 25 in its entirety.

separating Market-Making Trading Permits for electronic and open-outcry market-making, the Exchange will be assessing separate Tier Appointment Fees for each type of Market-Making Trading Permit. The Exchange proposes, effective October 1, 2019, a MM EAP will be assessed the Tier Appointment Fee whenever the Market-Maker executes the corresponding specified number of contracts. The Exchange also proposes to modify the threshold number of contracts a Market-Maker must execute in a month to trigger the fee for VIX and RUT. Particularly, for the VIX and RUT Tier appointments, the Exchange proposes to increase the threshold from 100 contracts a month to 1,000 contracts a month. The Exchange notes the Tier Appointment Fee amounts are not changing.[46] In connection with the proposed changes, the Exchange proposes to relocate the Tier Appointment Fees to a new table and eliminate the language in the current respective notes sections of each Tier Appointment Fee as it is no longer necessary.

Trading Permit Holder Regulatory Fee

The Exchange currently assesses a Trading Permit Holder Regulatory Fee of $90 per month, per RTH Trading Permit, applicable to all TPHs, which fee helps more closely cover the costs of regulating all TPHs and performing regulatory responsibilities. In light of the proposed changes to the Exchange's Trading Permit structure, the Exchange proposes to eliminate the TPH Regulatory Fee. The Exchange notes that there is no regulatory requirement to maintain this fee.

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46 Floor Broker Trading Surcharges for SPX/SPXW and VIX are also not changing. The Exchange however, is creating a new table for Floor Broker Trading Surcharges and relocating such fees in the Fees Schedule in connection with the proposal to eliminate fees currently set forth in the "Trading Permit and Tier Appointment Fees" Table.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the "Act") and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[47] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[48] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with Section 6(b)(4) of the Act,[49] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[50] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange first notes that it operates in a highly competitive environment. Indeed, there are currently 16 registered options exchanges that trade options. There is

[47] 15 U.S.C. 78f(b).

[48] 15 U.S.C. 78f(b)(5).

[49] 15 U.S.C. 78f(b)(4).

[50] 15 U.S.C. 78f(b)(5).

also no regulatory requirement that any market participant connect to any one options exchange, or that any market participant connect at a particular connection speed or act in a particular capacity on the Exchange. Moreover, membership is not a requirement to participate on the Exchange. Indeed, the Exchange is unaware of any one options exchange whose membership includes every registered broker-dealer. Even the number of members between the Exchange and its 3 other options exchange affiliates vary. Indeed, a number of firms currently do not participate on the Exchange, or participate on the Exchange though sponsored access arrangements rather than by becoming a member. Particularly, the Exchange notes that as of August 2019, the Exchange had 97 members (TPH organizations), of which only 45 directly connected to the Exchange. In addition, of those market participants that do connect to the Exchange, it is the individual needs of each market participant that determine the amount and type of Trading Permits and physical and logical connections to the Exchange.[51]

Moreover, the Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Particularly, in Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system "has been remarkably successful in promoting market competition in its broader forms that are most important to investors

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51 To assist market participants that are connected or considering connecting to the Exchange, the Exchange provides detailed information and specifications about its available connectivity alternatives in the Cboe C1 Options Exchange Connectivity Manual, as well as the various technical specifications. See http://markets.cboe.com/us/options/support/technical/

and listed companies."[52] The number of available exchanges to connect to ensures increased competition in the marketplace, and constrains the ability of exchanges to charge supracompetitive fees for access to its market. Additionally, the Exchange notes that non-TPHs such as Service Bureaus and Extranets resell Cboe Options connectivity.[53] This indirect connectivity is another viable alternative that is already being used by non-TPHs, further constraining the price that the Exchange is able to charge for connectivity to its Exchange. Accordingly, in the event that a market participant views one exchange's direct connectivity and access fees as more or less attractive than the competition they can choose to connect to that exchange indirectly or may choose not to connect to that exchange and connect instead to one or more of the other 15 options markets. Moreover, the Commission has recognized that while some exchanges may have a unique business model that is not currently offered by competitors, it believes a competitor could create similar business models if demand were adequate, and if they did not do so, the Commission believes it would be likely that new entrants would do so if the exchange with that unique business model was otherwise profitable.[54] The proposed fees therefore reflect a competitive environment, as the Exchange seeks to amend its access fees in

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52 See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) ("Regulation NMS Adopting Release").

53 Currently, there are 13 firms that resell Cboe Options connectivity. Post-migration, the Exchange anticipates that there will be 19 firms that resell Cboe Options connectivity (both physical and logical). The Exchange does not receive any connectivity revenue when connectivity is resold by a third-party, which often is resold to multiple customers, some of whom are agency broker-dealers that have numerous customers of their own.

54 See Securities Exchange Act Release No. 86901 (September 9, 2019), 84 FR 48458 (September 13, 2019) (File No. S7-13-19)

connection with the upcoming migration of its technology platform, while still attracting market participants to continue to be, or become, connected to the Exchange.

In determining the proposed fee changes discussed above, the Exchange reviewed the current competitive landscape, considered the fees historically paid by market participants for connectivity to the current system, and also assessed the impact on market participants to ensure that the proposed fees would not create a financial burden and have an undue impact on any market participants, including smaller market participants. The proposed connectivity structure and corresponding fees, like the current connectivity structure and fees, provide market participants flexibility with respect to how to connect to the Exchange based on each market participants' respective business needs. For example, the amount and type of physical and logical ports are determined by factors relevant and specific to each market participant, including its business model, costs of connectivity, how its business is segmented and allocated and volume of messages sent to the Exchange. Moreover, the proposed connectivity structure is designed to encourage market participants to be efficient with their physical and logical port usage. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase, if any, the Exchange anticipates that like today, some market participants will continue to decline to connect and participate on the Exchange, some will participate on the Exchange via indirect connectivity, some will only purchase one physical connection and/or logical port connection, and others will purchase multiple connections. The Exchange lastly notes that market participants were provided advanced notice of the proposed fee changes in August 2019 via Exchange Notice.[55]

Physical Ports

The Exchange believes increasing the fee for the new 10 Gb Physical Port is reasonable because unlike, the current 10 Gb Network Access Ports, the new Physical Ports provides a connection through a latency equalized infrastructure and also allows access to both unicast order entry and multicast market data with a single physical connection. As discussed above, legacy Network Access Ports do not permit market participants to receive unicast and multicast connectivity. As such, in order to receive both connectivity types, a market participant currently needs to purchase and maintain at least two 10 Gb Network Access Ports. The proposed Physical Ports not only provide a latency reduction as compared to the legacy ports, improving trading performance, but also alleviate the need to pay for two physical ports as a result of needing unicast and multicast connectivity. Accordingly, market participants who historically had to use two separate ports for each of multicast and unicast activity, will be able to purchase only one port, and consequently pay lower fees overall. For example, if a TPH has two 10 Gb legacy Network Access Ports, one of which receives unicast traffic and the other of which receives multicast traffic, that TPH is currently assessed $10,000 per month ($5,000 per port). Using the new Physical Ports, that TPH has the option of utilizing one single port, instead of two ports, to receive both unicast and multicast traffic, therefore paying only $7,000 per month for a port that provides both connectivity types. The

55 See Exchange Notice "Cboe Options Exchange Access and Capacity Fee Schedule Changes Effective October 1, 2019 and November 1, 2019" Reference ID C2019081900.

Exchange notes that currently, approximately 50% of TPHs maintain two or more 10 Gb Network Access Ports. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase post-migration, the Exchange anticipates approximately 50% of the TPHs with two or more 10 Gb Network Access Ports to reduce the number of 10 Gb Physical Ports that they purchase. The Exchange also expects the remaining 50% of TPHs to maintain their current 10 Gb Physical Ports, but reduce the number of 1 Gb Physical Ports. Particularly, a number of TPHs currently maintain two 10 Gb Network Access Ports to receive multicast data and two 1 Gb Network Access Ports for order entry (unicast connectivity). As the new 10 Gb Physical Ports are able to accommodate unicast connectivity (order entry), TPHs may choose to eliminate their 1 Gb Network Access Ports and utilize the new 10 Gb Physical Ports for both multicast and unicast connectivity.

As discussed above, if a TPH deems a particular exchange as charging excessive fees for connectivity, such market participants may opt to terminate their connectivity arrangements with that exchange, and adopt a possible range of alternative strategies, including routing to the applicable exchange through another participant or market center or taking that exchange's data indirectly. Accordingly, if the Exchange charges excessive fees, it would stand to lose not only connectivity revenues but also revenues associated with the execution of orders routed to it, and, to the extent applicable, market data revenues. The Exchange believes that this competitive dynamic imposes powerful restraints on the ability of any exchange to charge unreasonable fees for physical connectivity. The Exchange also notes that the proposal represents an equitable allocation of reasonable dues, fees and other charges as its fees for physical connectivity are reasonably constrained by competitive alternatives. The proposed amounts are in line with, and in some cases lower than, the costs of physical connectivity at other Exchanges[56], including the Exchange's Affiliated Exchanges which will have the same connectivity infrastructure once the Exchange has migrated.[57] The Exchange believes the proposed Physical Port fees are equitable and not unreasonably discriminatory as the connectivity pricing is associated with relative usage of the various market participants and does not impose a barrier to entry to smaller participants.

The Exchange also believes increasing the fee for 10 Gb Physical Ports and charging a higher fee as compared to the 1 Gb Physical Port is equitable as the 1 Gb Physical Port is 1/10th the size of the 10 Gb Physical Port and therefore does not offer access to many of the products and services offered by the Exchange (e.g., ability to receive certain market data products). Thus the value of the 1 Gb alternative is lower than the value of the 10 Gb alternative, when measured based on the type of Exchange access it offers. Moreover, market participants that purchase 10 Gb Physical Ports utilize the most bandwidth and therefore consume the most resources from the network. As such, the Exchange believes the proposed fees for the 1 and 10 Gb Physical Ports, respectively are reasonably and appropriately allocated.

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56 See e.g., Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. See also Nasdaq Price List – Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

57 See e.g., Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

Data Port Fees

The Exchange believes assessing the data port fee per data source, instead of per port, is reasonable because it may allow for market participants to maintain more ports at a lower cost and applies uniformly to all market participants. The Exchange believes the proposed increase is reasonable because, as noted above, market participants will likely still pay lower fees as a result of charging per data source and not per data port. Indeed, while the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange anticipates approximately 76% of the 51 market participants who currently pay data port fees to pay lower fees upon implementation of the proposed change. The Exchange anticipates that 19% of TPHs who currently pay data port fees will pay a modest increase of only $500 per month. Additionally as discussed above, the Exchange's affiliate C2 has the same fee which is also assessed at the proposed rate and assessed by data source instead of per port. The proposed name change is also appropriate in light of the Exchange's proposed changes and may alleviate potential confusion.

Logical Connectivity

Port fees

The Exchange believes it's reasonable to eliminate certain fees associated with legacy options for connecting to the Exchange and to replace them with fees associated with new options for connecting to the Exchange that are similar to those offered at its Affiliated Exchanges. In particular, the Exchange believes it's reasonable to no longer assess fees for CMI and FIX Login IDs because the Login IDs will be retired and obsolete upon migration and because the Exchange is proposing to replace them with fees associated with the new logical connectivity options. The Exchange believes that it is reasonable to harmonize the Exchange's logical connectivity options and corresponding connectivity fees once the Exchange is on a common platform as its Affiliated Exchanges. Additionally, the Exchange notes the proposed fees are the same as, or in line with, the fees assessed on its Affiliated Exchanges for similar connectivity.[58] The proposed logical connectivity fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same respective connectivity options.

The Exchange believes the proposed Logical Port fees are reasonable as it is the same fee for Drop Ports and the first five BOE/FIX Ports that is assessed for CMI and FIX Logins, which the Exchange is eliminating in lieu of logical ports. Additionally, while the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs, the proposed logical ports provide for significantly more message traffic. Specifically, the proposed BOE/FIX Logical Ports will provide for 3 times the amount of quoting[59] capacity and approximately 165 times order entry capacity. Similarly, the Exchange believes the proposed BOE Bulk Port fees are reasonable because while the fees are higher than the current CMI and FIX Login Id fees and the proposed Logical Port fees, BOE Bulk Ports offer significantly more bandwidth capacity than both CMI and FIX Login Ids and Logical Ports. Particularly, a single BOE Bulk Port offers 45 times the amount of quoting bandwidth than CMI/FIX Login Ids[60] and 5 times the amount of

58 See Affiliated Exchange Fee Schedules, Logical Port Fees.

59 Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

60 Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

quoting bandwidth than Logical Ports will offer. Additionally, the Exchange believes that its fees for logical connectivity are reasonable, equitable, and not unfairly discriminatory as they are designed to ensure that firms that use the most capacity pay for that capacity, rather than placing that burden on market participants that have more modest needs. Although the Exchange charges a "per port" fee for logical connectivity, it notes that this fee is in effect a capacity fee as each FIX, BOE or BOE Bulk port used for order/quote entry supports a specified capacity (i.e., messages per second) in the matching engine, and firms purchase additional logical ports when they require more capacity due to their business needs.

An obvious driver for a market participant's decision to purchase multiple ports will be their desire to send or receive additional levels of message traffic in some manner, either by increasing their total amount of message capacity available, or by segregating order flow for different trading desks and clients to avoid latency sensitive applications from competing for a single thread of resources. For example, a TPH may purchase one or more ports for its market making business based on the amount of message traffic needed to support that business, and then purchase separate ports for proprietary trading or customer facing businesses so that those businesses have their own distinct connection, allowing the firm to send multiple messages into the Exchange's trading system in parallel rather than sequentially. Some TPHs that provide direct market access to their customers may also choose to purchase separate ports for different clients as a service for latency sensitive customers that desire the lowest possible latency to improve trading performance. Thus, while a smaller TPH that demands more limited message traffic may connect through a service bureau or other service provider, or may choose to purchase one or two logical ports that are billed at a rate of $750 per month each, a larger market participant with a substantial and diversified U.S. options business may opt to purchase additional ports to support both the volume and types of activity that they conduct on the Exchange. While the Exchange has no way of predicting with certainty the amount or type of logical ports market participants will in fact purchase post-migration, the Exchange anticipates approximately 16% of TPHs to purchase one to two logical ports, and approximately 22% of TPHs to not purchase any logical ports. At the same time, market participants that desire more total capacity due to their business needs, or that wish to segregate order flow by purchasing separate capacity allocations to reduce latency or for other operational reasons, would be permitted to choose to purchase such additional capacity at the same marginal cost. The Exchange believes the proposal to assess an additional Logical and BOE Bulk port fee for incremental usage per logical port is reasonable because the proposed fees are modestly higher than the proposed Logical Port and BOE Bulk fees and encourage users to mitigate message traffic as necessary. The Exchange notes one of its Affiliated Exchanges has similar implied port fees.[61]

In sum, the Exchange believes that the proposed BOE/FIX Logical Port and BOE Bulk Port fees are appropriate as these fees would ensure that market participants continue to pay for the amount of capacity that they request, and the market participants that pay the most are the ones that demand the most resources from the Exchange. The Exchange also believes that its logical connectivity fees are aligned with the goals of the Commission in facilitating a competitive market for all firms that trade on the Exchange and of ensuring that critical market infrastructure has "levels of capacity, integrity,

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61 See e.g., Cboe C2 Options Exchange Fees Schedule, Logical Connectivity Fees.

resiliency, availability, and security adequate to maintain their operational capability and promote the maintenance of fair and orderly markets."[62]

The Exchange believes waiving the FIX/BOE Logical Port fee for one FIX Logical Port used to access PULSe and Silexx (for FLEX Trading) is reasonable because it will allow all TPHs using PULSe and Silexx to avoid having to pay a fee that they would otherwise have to pay. The waiver is equitable and not unfairly discriminatory because TPHs using PULSe are already subject to a monthly fee for the PULSe Workstation, which the Exchange views as inclusive of fees to access the Exchange. Moreover, while PULSe users today do not require a FIX/CMI Login Id, post-migration, due to changes to the connectivity infrastructure, PULSe users will be required to maintain a FIX Logical Port and as such incur a fee they previously would not have been subject to. Similarly, the Exchange believes that the waiver for Silexx (for FLEX trading) will encourage TPHs to transact business using FLEX Options using the new Silexx System and encourage trading of FLEX Options. Additionally, the Exchange notes that it currently waives the Login Id fees for Login IDs used to access the CFLEX system.

The Exchange believes its proposed fee for Purge Ports is reasonable as it is also in line with the amount assessed for similar ports by both its Affiliated Exchanges and other exchanges.[63] Moreover, the Exchange believes that offering Purge Port functionality at the Exchange level promotes robust risk management across the industry, and thereby facilitates investor protection. Some market participants, and, in particular,

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62 See Securities Exchange Act Release No. 73639 (November 19, 2014), 79 FR 72251 (December 5, 2014) (File No. S7-01-13) (Regulation SCI Adopting Release).

63 See Affiliated Exchange Fee Schedules, Logical Port Fees. See also, Nasdaq ISE Pricing Schedule, Section 7(C). ISE charges a fee of $1,100 per month for SQF Purge Ports.

larger firms, could build similar risk functionality on their trading systems that permit the flexible cancellation of orders entered on the Exchange. Offering Exchange level protections however, ensures that such functionality is widely available to all firms, including smaller firms that may otherwise not be willing to incur the costs and development work necessary to support their own customized mass cancel functionality. The Exchange operates in a highly competitive market in which exchanges offer connectivity and related services as a means to facilitate the trading activities of TPHs and other participants. As the proposed Purge Ports provide voluntary risk management functionality, excessive fees would simply serve to reduce demand for this optional product. The Exchange also believes that the proposed Purge Port fees are not unfairly discriminatory because they will apply uniformly to all TPHs that choose to use dedicated Purge Ports. The proposed Purge Ports are completely voluntary and, as they relate solely to optional risk management functionality, no TPH is required or under any regulatory obligation to utilize them. The Exchange believes that adopting separate fees for these ports ensures that the associated costs are borne exclusively by TPHs that determine to use them based on their business needs, including Market-Makers or similarly situated market participants. Similar to Purge Ports, Spin and GRP Ports are optional products that provide an alternative means for market participants to receive multicast data and request and receive a retransmission of such data. As such excessive fees would simply serve to reduce demand for these products, which TPHs are under no regulatory obligation to utilize. All TPHs that voluntarily select these service options (i.e., Purge Ports, Spin Ports or GRP Ports) will be charged the same amount for the same respective services. All TPHs have the option to select any connectivity option, and there is no differentiation among TPHs with regard to the fees charged for the services offered by the Exchange.

Access Credits

The Exchange believes the proposal to adopt credits for BOE Bulk Ports is reasonable, equitable and not unfairly discriminatory because it provides an opportunity for TPHs to pay lower fees for logical connectivity. The Exchange notes that the proposed credits are in lieu of the current credits that Market-Makers are eligible to receive today for Trading Permits fees. Although only Market-Makers may receive the proposed BOE Bulk Port credits, Market-Makers are valuable market participants that provide liquidity in the marketplace and incur costs that other market participants do not incur. For example, Market-Makers have a number of obligations, including quoting obligations and fees associated with appointments that other market participants do not have.

The Exchange believes the proposed BOE Bulk Port fee credits provided under AVP will incentivize the routing of orders to the Exchange by TPHs that have both Market-Maker and agency operations, as well as incent Market-Makers to tighten market widths due to the reduced costs the incentives will provide. In the options industry, many options orders are routed by consolidators, which are firms that have both order router and Market-Maker operations. The Exchange is aware not only of the importance of providing credits on the order routing side in order to encourage the submission of orders, but also of the operations costs on the Market-Maker side. The Exchange believes the proposed change to AVP continues to allow the Exchange to provide relief to the Market-Maker side via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. Additionally, the proposed credits may incentivize and attract more volume and liquidity to the Exchange, which will benefit all Exchange participants through increased opportunities to trade as well as enhancing price discovery. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the required criteria to receive the credits, the Exchange anticipates approximately two TPHs (out of approximately 5 TPHs that are eligible for AVP) to reach VIP Tiers 4 or 5 and consequently earn the BOE Bulk Port fee credits for their respective Market-Maker affiliate.

The Exchange believes the proposed BOE Bulk Port fee credits available for TPHs that reach certain Performance Tiers under the Liquidity Provider Sliding Scale Adjustment Table is reasonable as the credits provide for reduced connectivity costs for those Market-Makers that reach the required thresholds. The Exchange believe it's reasonable, equitable and not unfairly discriminatory to provide credits to those Market-Makers that primarily provide and post liquidity to the Exchange, as the Exchange wants to continue to encourage Market-Makers with significant Make Rates to continue to participate on the Exchange and add liquidity. Greater liquidity benefits all market participants by providing more trading opportunities and tighter spreads.

Moreover, the Exchange notes that Market-Makers with a high Make Rate percentage generally require higher amounts of capacity than other Market-Makers. Particularly, Market-Makers with high Make Rates are generally streaming significantly more quotes than those with lower Make Rates. As such, Market-Makers with high Make Rates may incur more costs than other Market-Makers as they may need to purchase multiple BOE Bulk Ports in order to accommodate their capacity needs. The Exchange believes the proposed credits for BOE Bulk Ports encourages Market-Makers to continue to provide liquidity for the Exchange, notwithstanding the costs incurred by purchasing multiple ports. Particularly, the proposal is intended to mitigate the costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). While the Exchange cannot predict with certain which Market-Makers will reach Performance Tiers 4 and 5 each month, based on historical performance it anticipates approximately 10 Market-Makers to achieve Tiers 4 or 5. Lastly, the Exchange notes that it is common practice among options exchanges to differentiate fees for adding liquidity and fees for removing liquidity.[64]

Bandwidth Packets and CMI CAS Server Fees

The Exchange believes it's reasonable to eliminate Bandwidth Packet fees and the CMI CAS Server fee because TPHs will not pay fees for these connectivity options and because Bandwidth Packets and CAS Servers will be retired and obsolete upon the upcoming migration. The Exchange believes that even though it will be discontinuing Bandwidth Packets, the proposed incremental pricing for Logical Ports and BOE Bulk Ports will continue to encourage users to mitigate message traffic. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Access Fees

The Exchange believes its proposed restructuring of its Trading Permits is reasonable in light of the changes to the Exchange's connectivity infrastructure in connection with the migration and the resulting separation of bandwidth allowance, logins and appointment costs from each Trading Permit. The Exchange also believes that

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[64] See e.g., MIAX Options Fees Schedule, Section 1(a), Market Maker Transaction Fees.

it is reasonable to harmonize the Exchange's Trading Permit structure and corresponding connectivity options to more closely align with the structures offered at its Affiliated Exchanges once the Exchange is on a common platform as its Affiliated Exchanges.[65] The proposed Trading Permit structure and corresponding fees are also in line with the structure and fees provided by other exchanges. The proposed Trading Permit fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same type and number of Trading Permits.

With respect to electronic Trading Permits, the Exchange notes that TPHs currently request multiple Trading Permits because of bandwidth, login or appointment cost needs. As described above, upon migration, bandwidth, logins and appointment costs will no longer be tied to Trading Permits or Bandwidth Packets and as such, the need to hold multiple permits and/or Bandwidth Packets will be obsolete. As such, the Exchange believes the proposed structure to require only one of each type of applicable electronic Trading Permit is appropriate. Moreover, the Exchange believes offering separate marketing making permits for off-floor and on-floor Market-Makers provides for a cleaner, more streamlined approach to trading permits and corresponding fees. Other exchanges similarly provide separate and distinct fees for Market-Makers that operate on-floor vs off-floor and their corresponding fees are similar to those proposed by the Exchange.[66]

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65 For example, the Exchange's affiliate, C2, similarly provides for Trading Permits that are not tied to connectivity, and similar physical and logical port options at similar pricings. See Cboe C2 Options Exchange Fees Schedule. Physical connectivity and logical connectivity are also not tied to any type of permits on the Exchange's other options exchange affiliates.

66 See e.g., PHLX Section 8A, Permit and Registration Fees. See also, BOX Options Fee Schedule, Section IX Participant Fees; NYSE American Options Fees

The Exchange believes the proposed fee for its MM EAP Trading Permits is reasonable as it is the same fee it assess today for Market-Maker Trading Permits (i.e., $5,000 per month per permit). Additionally, the proposed fee is in line with, and in some cases even lower than, the amounts assessed for similar access fees at other exchanges, including its affiliate C2.[67] The Exchange believes the proposed EAP fee is also reasonable, and in line with the fees assessed by other Exchanges for non-Market-Maker electronic access.[68] The Exchange notes that while the Trading Permit fee is increasing, TPHs overall cost to access the Exchange may be reduced in light of the fact that a TPH no longer must purchase multiple Trading Permits, Bandwidth Packets and Login Ids in order to receive sufficient bandwidth and logins to meet their respective business needs. To illustrate the value of the new connectivity infrastructure, the Exchange notes that the cost that would be incurred by a TPH today in order to receive the same amount of order capacity that will be provided by a single Logical Port post-migration (i.e., 5,000 orders per second), is approximately 98% higher than the cost for the same capacity post-migration. The following examples further demonstrate potential cost savings/value

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Schedule, Section III(A) Monthly ATP Fees and NYSE Arca Options Fees and Charges, OTP Trading Participant Rights. For similar Trading Floor Permits for Floor Market Makers, Nasdaq PHLX charges $6,000; BOX charges up to $5,500 for 3 registered permits in addition to a $1,500 Participant Fee, NYSE Arca charges up to $6,000; and NYSE American charges up to $8,000.

67 See e.g., Cboe C2 Options Exchange Fees Schedule. See also, NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees, which assesses up to $6,000 per Market Maker OTP and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees, which assess up to $8,000 per Market Maker ATP. See also, PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Market Maker Permit.

68 See e.g., PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Permit for all member and member organizations other than Floor Specialists and Market Makers.

added for an EAP holder with modest capacity needs and an EAP holder with larger capacity needs:

TPH that holds 1 EAP, no Bandwidth Packets and 1 CMI login

	Current Fee Structure	**Post-Migration Fee Structure**
EAP	$1,600	$3,000
CMI Login /Logical Port	$750	$750
Bandwidth Packets	0	N/A
Total Bandwidth Available	30 orders/sec	5,000 orders/sec
Total Cost	$2,350	$3,750
Total Cost per message	$78.33/order/sec	$0.75/order/sec

TPH that holds 1 EAP, 4 Bandwidth Packets and 15 CMI logins

	Current Fee Structure	**Post-Migration Fee Structure**
EAP	$1,600	$3,000
CMI Login /Logical Port	$11,250 (15@750)	$750
Bandwidth Packets	$6,400 (4@$1,600)	N/A
Total Bandwidth Available	150 orders/sec	5,000 orders/sec
Total Cost	$19,250	$3,750
Total Cost per message	$128.33/order/sec	$0.75/order/sec

The Exchange believes the proposal to adopt a new Clearing TPH Permit is reasonable because it offers TPHs that only clear transactions of TPHs a discount. Particularly, Clearing TPHs that also submit orders electronically to the Exchange would purchase the proposed EAP at $3,000 per permit. The Exchange believe it's reasonable to provide a discount to Clearing TPHs that only clear transactions and do not otherwise submit electronic orders to the Exchange. The Exchange notes that another exchange similarly charges a separate fee for clearing firms.[69]

[69] See e.g., NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees.

The Exchange believes the proposed fee structure for on-floor Market-Makers is reasonable as the fees are in line with those offered at other Exchanges.[70] The Exchange believes that the proposed fee for MM Floor Permits as compared to MM EAPs is reasonable because it is only modestly higher than MM EAPs and Floor MMs don't have other costs that MM EAP holders have, such as MM EAP Appointment fees.

The Exchange believes its proposed fees for Floor Broker Permits are reasonable because the fees are similar to, and in some cases lower than, the fees the Exchange currently assesses for such permits. Specifically, 60% of TPHs that hold Floor Broker Trading Permits will be pay lower Trading Permit fees. Particularly, any Floor Broker holding ten or less Floor Broker Trading Permits will pay lower fees under the proposed tiers as compared to what they pay today. While the remaining 40% of TPHs holding Floor Broker Trading Permits (who each hold between 12-21 Floor Broker Trading Permits) will pay higher fees, the Exchange notes the monthly increase is de minimis, ranging from an increase of 0.6% - 2.72%[71].

The Exchange believes the proposed ADV Discount is reasonable because it provides an opportunity for Floor Brokers to pay lower FB Trading Permit fees, similar to the current rebate program offered to Floor Brokers. The Exchange notes that while the new ADV Discount program includes only customer volume ("C" origin code) as compared to Customer and Professional Customer/Voluntary Professional, the amount of Professional Customer/Voluntary Professional volume was de minimis and the Exchange

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70 See e.g., PHLX Section 8A, Permit and Registration Fees, which assesses $6,000 per permit for Floor Specialists and Market Makers.

71 The Floor Brokers whose fees are increasing have each committed to a minimum number of permits and therefore currently receive the rates set forth in the current Floor Broker TP Sliding Scale.

does not believe the absence of such volume will have a significant impact.[72] Additionally, the Exchange notes that while the ADV requirements under the proposed ADV Discount program are higher than are required under the current rebate program, the proposed ADV Discount counts volume from all products towards the thresholds as compared to the current rebate program which excludes volume from Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades. Moreover, the ADV Discount is designed to encourage the execution of orders in all classes via open outcry, which may increase volume, which would benefit all market participants (including Floor Brokers who do not hit the ADV thresholds) trading via open outcry (and indeed, this increased volume could make it possible for some Floor Brokers to hit the ADV thresholds). The Exchange believes the proposed discounts are equitable and not unfairly discriminatory because all Floor Brokers are eligible. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the various thresholds under the ADV Discount, the Exchange anticipates approximately 3 Floor Brokers to receive a rebate under the program.

The Exchange believes its proposed MM EAP Appointment fees are reasonable in light of the Exchange's elimination of appointment costs tied to Trading Permits. Other exchanges also offer a similar structure with respect to fees for appointment classes.[73] Additionally, the proposed MM EAP Appointment fee structure results in approximately 36% electronic MMs paying lower fees for trading permit and appointment costs. For

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72 Furthermore, post-migration the Exchange will not have Voluntary Professionals.

73 See e.g., PHLX Section 8. Membership Fees, B, Streaming Quote Trader ("SQT") Fees and C. Remote Market Maker Organization (RMO) Fee.

example, in order to have the ability to make electronic markets in every class on the Exchange, a Market-Maker would need 1 Market-Maker Trading Permit and 37 Appointment Units post-migration. Under, the current pricing structure, in order for a Market-Maker to quote the entire universe of available classes, a Market-Maker would need 33 Appointment Credits, thus necessitating 33 Market-Maker Trading Permits. With respect to fees for Trading Permits and Appointment Unit Fees, under the proposed pricing structure, the cost for a TPH wishing to quote the entire universe of available classes is approximately 29% less (if they are not eligible for the MM TP Sliding Scale) or approximately 2% less (if they are eligible for the MM TP Sliding Scale). To further demonstrate the potential cost savings/value added, the Exchange is providing the following examples comparing current Market-Maker connectivity and access fees to projected connectivity and access fees for different scenarios. The Exchange notes that the below examples not only compare Trading Permit and Appointment Unit costs, but also the cost incurred for logical connectivity and bandwidth. Particularly, the first example demonstrates the total minimum cost that would be incurred today in order for a Market-Maker to have the same amount of capacity as a Market-Maker post-migration that would have only 1 MM EAP and 1 Logical Port (i.e., 15,000 quotes/3 sec). The Exchange is also providing examples that demonstrate the costs of (i) a Market-Maker with small capacity needs and appointment unit of 1.0 and (ii) a Market-Maker with large capacity needs and appointment cost/unit of 30.0:

Market-Maker that needs capacity of 15,000/quotes/3 seconds

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permit / MM EAP	$5,000	$5,000
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit)

CMI Login / Logical Port	$750[74]	$750
Bandwidth Packets	$5,500 (2@$2,750)	N/A
Total Bandwidth Available	15,000 quotes/3 sec	15,000 quotes/3 sec
Total Cost	$11,250	$5,750
Total Cost per message allowed	$0.75/quote/3 sec	$0.38/quote/3 sec

Market Maker that needs capacity of no more than 5,000 quotes/3 secs

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permit / MM EAP	$5,000	$5,000
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit)
CMI Login / Logical Port	$750	$750
Bandwidth Packets	0	N/A
Total Bandwidth Available	5,000 quotes/3 sec	15,000 quotes/3 sec
Total Cost	$5,750	$5,750
Total Cost per message allowed	$1.15/quote/3 sec	$0.38/quote/3 sec

Market-Maker that needs 30 Appointment Units and capacity of 300,000 quotes/3 sec

	Current Fee Structure	**Post-Migration Fee Structure**
MM Permits / MM EAP	$105,000 (30 MM Permits assumes eligible for MM TP Sliding Scale)[75]	$5,000
Appointment Units Cost	N/A (30 appointment costs)	$95,500 (30 appointment units)
CMI Logins / BOE Bulk Port	$3,000 (4@$750)[76]	$3,000 (2 BOE Bulk@$1,500)
Bandwidth Packets	$82,500(30@$2750)	N/A
Total Bandwidth	300,000 quotes/3 sec	*450,000 quotes/3 sec

74 The maximum quoting bandwidth that may be applied to a single Login Id is 80,000 quotes/3 sec.

75 For simplicity of the comparison, this assumes no appointments in SPX, VIX, RUT, XEO or OEX (which are not included in the TP Sliding Scale).

76 Given the bandwidth limit per Login Id of 80,000 quotes/3 sec, example assumes Market-Maker purchases minimum amount of Login IDs to accommodate 300,000 quotes/3 sec.

Available		
Total Cost	$190,500	$103,500
Total Cost per message allowed	$0.63/quotes/3 sec	$0.23/quote/3 sec

**possible performance degradation at 15,000 messages per second*

The Exchange believes its proposal to provide separate fees for Tier Appointments for MM EAPs and MM Floor Permits as the Exchange will be issuing separate Trading Permits for on-floor and off-floor market making as discussed above. The proposal to increase the electronic volume thresholds for VIX and RUT are reasonable as those that do not regularly trade VIX or RUT in open-outcry will continue to not be assessed the fee. In fact, any TPH that executes more than 100 contracts but less than 1,000 in the respective classes will no longer have to pay the proposed Tier Appointment fee. As noted above, the Exchange is not proposing to change the amounts assessed for each Tier Appointment Fee. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Trading Permit Holder Regulatory Fee

The Exchange believes it's reasonable to eliminate the Trading Permit Holder Regulatory fee because TPHs will not pay this fee and because the Exchange is restructuring its Trading Permit structure. The Exchange notes that although it will less closely be covering the costs of regulating all TPHs and performing its regulatory responsibilities, it still has sufficient funds to do so. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

The Exchange believes corresponding changes to eliminate obsolete language in connection with the proposed changes described above and to relocate and reorganize its fees in connection with the proposed changes maintain clarity in the Fees Schedule and alleviate potential confusion, thereby removing impediments to and perfecting the mechanism of a free and open market and a national market system, and, in general, protecting investors and the public interest.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With respect to intra-market competition, the Exchange does not believe that the proposed rule change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As stated above, the Exchange does not believe its proposed pricing will impose a barrier to entry to smaller participants and notes that its proposed connectivity pricing is associated with relative usage of the various market participants. For example, market participants with modest capacity needs can buy the less expensive 1 Gb Physical Port and utilize only one Logical Port. Moreover, the pricing for 1 Gb Physical Ports and FIX/BOE Logical Ports are no different than are assessed today (i.e., $1,500 and $750 per port, respectively), yet the capacity and access associated with each is greatly increasing. While pricing may be increased for larger capacity physical and logical ports, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed connectivity fees do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation reflects the network resources consumed by the various size of market participants – lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pays the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange.

The Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed in the Statutory Basis section above, options market participants are not forced to connect to (or purchase market data from) all options exchanges, as shown by the number of TPHs at Cboe and shown by the fact that there are varying number of members across each of Cboe's Affiliated Exchanges. The Exchange operates in a highly competitive environment, and its ability to price access and connectivity is constrained by competition among exchanges and third parties. As discussed, there are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or taking the exchange's data indirectly. For example, there are 15 other U.S. options exchanges, which the Exchange must consider in its pricing discipline in order to compete for market participants. In this competitive environment, market participants are free to choose which competing exchange or reseller to use to satisfy their business needs. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges. Accordingly, the Exchange does not believe its proposed fee change imposes any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act[77] and paragraph (f) of Rule 19b-4[78] thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form (http://www.sec.gov/rules/sro.shtml); or
- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-CBOE-2019-082 on the subject line.

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77 15 U.S.C. 78s(b)(3)(A).

78 17 CFR 240.19b-4(f).

Paper comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-CBOE-2019-082. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (http://www.sec.gov/rules/sro.shtml). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, D.C. 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-CBOE-2019-082 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[79]

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[79] 17 CFR 200.30-3(a)(12).

Secretary

Cboe Exchange, Inc.

Fees Schedule - October [1] 2 , 2019

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Affiliate Volume Plan (AVP)(23)(24)					
Origin	**Origin Code**	**VIP Tier Reached**	**MM Affiliate Access Credit**	**Liquidity Provider Sliding Scale Credit**	**Notes]**
Cboe Options Market-Maker/DPM/LMM (10)	**M**	1	0%	0%	If a Market-Maker affiliate ("affiliate" defined as having at least 75% common ownership between the two entities as reflected on each entity's Form BD, Schedule A)("Affiliate OFP") or Appointed OFP receives a credit under the Exchange's Volume Incentive Program ("VIP"), the Market-Maker will receive an access credit on their [Market-Maker trading permit fees]BOE Bulk Ports corresponding to the VIP tier reached.[This credit will not apply to Market-Maker Trading Permits used for appointments in RUT, SPX, VIX, OEX and XEO.] The Market-Maker will also receive a transaction fee credit on their sliding scale Market-Maker transaction fees, not including any additional surcharges or fees assessed as part of the Liquidity Provider Sliding Scale Adjustment Table.
		2	[1]0%	10%	
		3	[15]0%	15%	
		4	[30]15%	30%	
		5	[3]25%	35%	

* * * * *

[Trading Permit and Tier Appointment Fees (24)(25)(26)(37)(49)]				
[Origin]	**[Type of Trading Permit or Tier Appointment]**	**[Origin Code]**	**[Access Fee]**	**[Notes]**
[Cboe Options Market-Maker/DPM/LMM/ Floor Broker]	**[Market-Maker Trading Permit]**	**[M]**	[$5,000 per month]	**[See Market-Maker Trading Permit Sliding Scale]**
	[Market-Maker Trading Permit - GTH]		[$1,000 per month]	[The fee is waived for the first Market-Maker Trading Permit through September 30, 2019.]
	[RUT Tier Appointment]		[$1,000 per month]	
	[SPX Tier Appointment]		[$3,000 per month]	
	[Floor Broker SPX Surcharge]		[$3,000 per month]	
	[VIX Tier Appointment]	**[M]**	[$2,000 per month]	
	[Floor Broker VIX Surcharge]		[$2,000 per month]	
	[Floor Broker Trading Permit]		[$9,000 per month]	**[See Floor Broker Trading Permit Sliding Scale]**
	[Electronic Access Permit]		[$1,600 per month]	
	[Electronic Access Permit - GTH]		[$500 per month]	[The fee is waived for the first Electronic Access Permit through September 30, 2019.]
[Trading Permit Descriptions]				
[Market-Maker Trading Permit]	[Entitles the holder to act as a Market-Maker (including a Market-Maker trading remotely), DPM, eDPM or LMM. This Permit provides an appointment credit of 1.0, a quoting and order entry bandwidth allowance, up to three logins, trading floor access and Trading Permit Holder status.]			
[Market-Maker Trading Permit - GTH]	[Entitles the holder to act as a Market-Maker in GTH. This Permit provides an appointment credit of 1.0, a quoting and order entry bandwidth allowance and up to three logins.]			
[Quoting Bandwidth]	[The allowance for a Market-Maker Trading Permit used for an appointment in any options classes other than SPX (including SPXW) is equivalent to a maximum of 40,500,000 quotes over the course of a trading session and the allowance for a Market-Maker Trading Permit used for an appointment in SPX (including SPXW) is equivalent to a maximum of 81,000,000 quotes over the course of a trading session. The allowance for an GTH Market-Maker Trading Permit that is not used for an appointment in SPX (including SPXW) is equivalent to a maximum of 37,500,000 and the allowance for a GTH Market-Maker Trading Permit used for an appointment in SPX (including SPXW) is equivalent to a maximum of 75,000,000 quotes over the course of a trading session. To the extent a Market-Maker is able to submit electronic quotes in SPX and/or SPXW, the Market-Maker shall receive the quoting bandwidth allowance to quote in, and only in, SPX and/or SPXW.]			
[SPX Tier Appointment]	[In order for a Market-Maker Trading Permit to be used to act as a Market-Maker in SPX, including SPX Weeklys, the Trading Permit Holder must obtain an SPX Tier Appointment for that Market-Maker Trading Permit. Each SPX Tier Appointment may only be used with one designated Market-Maker Trading Permit. The SPX Tier Appointment fee will be assessed to any Market-Maker Trading Permit Holder that either (a) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 contracts while that appointment is active; or (b) conducts any open outcry transactions in SPX or SPX Weeklys at any time during a calendar month. The SPX Tier Appointment fee will not be assessed to a Trading Permit Holder Market Maker who (i) does not have an SPX Tier Appointment, (ii) only executes SPX or SPX Weeklys open outcry transactions as part of multi-class broad-based index spread transactions, and (iii) submits the SPX Tier Appointment Fee Exclusion for Multi-Class Broad-Based Index Spread Transactions Form within three business days of execution of the applicable spread transaction(s).]			
[Floor Broker SPX Surcharge]	[An additional monthly fee of $3,000 per month will be assessed to any Floor Broker Trading Permit Holder that executes more than 20,000 SPX contracts during the month. If and to the extent that a Trading Permit Holder or TPH organization has more than one Floor Broker Trading Permit that is utilized to execute SPX options transactions, the SPX executions of that Trading Permit Holder or TPH organization shall be aggregated for purposes of determining this additional monthly fee and the Trading Permit Holder or TPH organization shall be charged a single $3,000 fee for the combined SPX executions through those Floor Broker Trading permits if the executions exceed 20,000 contracts per month. The SPX Surcharge will not be assessed to a Floor Broker Trading Permit Holder who (i) only executes SPX (including SPXW) options transactions as part of multi-class broad-based index spread transactions, and (ii) submits the SPX Tier Appointment Fee Exclusion for Multi-Class Broad-Based Index Spread Transactions Form within three business days of execution of the applicable spread transaction(s).]			

[VIX Tier Appointment]	[In order for a Market-Maker Trading Permit to be used to act as an electronic Market-Maker in VIX, the Trading Permit Holder must obtain a VIX Tier Appointment for that Market-Maker Trading Permit. Each VIX Tier Appointment may only be used with one designated Market-Maker Trading Permit. The VIX Tier Appointment fee will be assessed to any Market-Maker Trading Permit Holder that either (a) has a VIX Tier Appointment at any time during a calendar month and trades at least 100 VIX options contracts electronically while that appointment is active; or (b) trades at least 1,000 VIX options contracts in open outcry during a calendar month.]
[RUT Tier Appointment]	[In order for a Market-Maker Trading Permit to be used to act as an electronic Market-Maker in RUT, the Trading Permit Holder must obtain a RUT Tier Appointment for that Market-Maker Trading Permit. Each RUT Tier Appointment may only be used with one designated Market-Maker Trading Permit. The RUT Tier Appointment fee will be assessed to any Market-Maker Trading Permit Holder that either (a) has a RUT Tier Appointment at any time during a calendar month and trades at least 100 RUT options contracts electronically while that appointment is active; or (b) trades at least 1,000 RUT options contracts in open outcry during a calendar month.]
[Floor Broker VIX Surcharge]	[An additional monthly fee of $2,000 per month will be assessed to any Floor Broker Trading Permit Holder that executes more than 20,000 VIX contracts during the month. If and to the extent that a Trading Permit Holder or TPH organization has more than one Floor Broker Trading Permit that is utilized to execute VIX options transactions, the VIX executions of that Trading Permit Holder or TPH organization shall be aggregated for purposes of determining this additional monthly fee and the Trading Permit Holder or TPH organization shall be charged a single $2,000 fee for the combined VIX executions through those Floor Broker Trading Permits if the executions exceed 20,000 contracts per month.]
[Floor Broker Trading Permit]	[Entitles the holder to act as a Floor Broker. This Permit provides an order entry bandwidth allowance, up to three logins, trading floor access and Trading Permit Holder status.]
[Electronic Access Permit]	[Entitles the holder to electronic access to the Exchange. Holders must be broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing Trading Permit Holder; (b) TPH organization approved to transact business with the public; (c) Proprietary Trading Permit Holder; and (d) order service firm. This permit does not provide access to the trading floor. A Proprietary Trading Permit Holder is a Trading Permit Holder with electronic access to the Exchange to submit proprietary orders that are not Market-Maker orders (i.e., that are not M orders for the Proprietary Trading Permit Holder's own account or an affiliated Market-Maker account). The Electronic Access Permit provides an order entry bandwidth allowance, up to three logins and Trading Permit Holder status.]
[Electronic Access Permit - GTH]	[Entitles the holder to electronic access to the Exchange during GTH. Holders must be broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing Trading Permit Holder; (b) TPH organization approved to transact business with the public; and (c) Proprietary Trading Permit Holder. A Proprietary Trading Permit Holder is a Trading Permit Holder with electronic access to the Exchange to submit proprietary orders that are not Market-Maker orders (i.e., that are not M orders for the Proprietary Trading Permit Holder's own account or an affiliated Market-Maker account). The Electronic Access Permit provides an order entry bandwidth allowance, up to three logins.]

[Market-Maker Trading Permit Sliding Scale (24)(26)]				
[Tier]	**[From]**	**[To]**	**[Amount Per Month Per Permit]**	**[Notes]**
	[1 Permit]	**[10 Permits]**	[$5,000]	[The sliding scale will be available for all Market-Maker Trading Permits held by affiliated Trading Permit Holders and TPH Organizations that are used for appointments in any options classes other than RUT, SPX, VIX, OEX and XEO. To qualify for the rates in Tiers 1 and 2, a TPH must commit in advance to a specific tier that includes a minimum number of eligible MM Trading Permits through September 2019.]
[Tier 1]	**[11 Permits]**	**[20 Permits]**	[$3,700]	
[Tier 2]	**[21 or More Permits]**		[$1,800]	

[Floor Broker Trading Permit Sliding Scale (25)(26)]				
[Tier]	**[From]**	**[To]**	**[Amount Per Month Per Permit]**	**[Notes]**
	[1 Permit]	**[1 Permit]**	[$9,000]	[The sliding scale will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH Organizations. To qualify for the rates in Tiers 1 and 2, a TPH must commit in advance to a specific tier that includes a minimum number of eligible FB Trading Permits through September 2019.]
[Tier 1]	**[2 Permits]**	**[5 Permits]**	[$5,000]	
[Tier 2]	**[6 or More Permits]**		[$3,000]	

[Bandwidth Packet Fees]			
[Trading Permit Holder Bandwidth Packets]		**[Amount Per Packet]**	**[Notes]**
[Quoting and Order Entry Bandwidth Packet]		[$2,750 per month]	[Bandwidth packet fees are non-refundable and are assessed through the integrated billing system during the first week of the following month. If a bandwidth packet is issued during a calendar month after the first trading day of the month, the bandwidth packet fee for that calendar month is prorated based on the remaining trading days in the calendar month. Bandwidth packets will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Registration Services Department by the last business day of the prior month to cancel the bandwidth packet effective at or prior to the end of the applicable month. For GTH, the fee is waived for the first Quoting and Order Entry Bandwidth Packet and the first Order Entry Bandwidth Packet through September 30, 2019.]
[Quoting and Order Entry Bandwidth Packet - GTH (37)]		[$500 per month]	
[Order Entry Bandwidth Packet Fees for Trading Permit Holders]	[1st - 5th Packet]	[$1,600 per month]	
	[6th - 8th Packet]	[$800 per month]	
	[9th - 13th Packet]	[$400 per month]	
	[14th Packet and Each Additional Packet]	[$200 per month]	
	[Order Entry Bandwidth Packet - GTH (37)]	[$250 per month]	
[Sponsored User Order Entry Bandwidth Packets]		**[Amount Per Packet Per Assigned Sponsored User]**	
[Fees for Order Entry Bandwidth Packet(s) Assigned to Sponsored User]	[1st - 6th Packet]	[$1,600 per month]	
	[7th - 9th Packet]	[$800 per month]	
	[10th - 14th Packet]	[$400 per month]	
	[15th Packet and Each Additional Packet]	[$200 per month]	
[Bandwidth Packet Descriptions]			
[Quoting and Order Entry Bandwidth Packet]	[Available to Market-Maker Trading Permit Holders. Entitles the holder to a quoting and order entry bandwidth allowance and up to three additional logins, which may then be added onto the total bandwidth pool for a Market-Maker's acronym(s) and Trading Permit(s). The quoting bandwidth allowance that is provided with a Quoting and Order Entry Bandwidth Packet is the same as the quoting allowance that is provided with a Market-Maker Trading Permit not used for an appointment in SPX (including SPXW).]		
[Order Entry Bandwidth Packet]	[Available to all Trading Permit Holders. Entitles the holder to an order entry bandwidth allowance and up to three additional logins. A Trading Permit Holder may also obtain and assign to a Sponsored User of the Trading Permit Holder one or more Order Entry Bandwidth Packets. In that event, the fees for the assigned bandwidth packet(s) are assessed to the Trading Permit Holder and the bandwidth packet(s) may be utilized solely by the Sponsored User (and not by the Trading Permit Holder or any other Sponsored User).]		

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Regulatory Fees		
Description	**Fee**	**Notes**
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[Trading Permit Holder Regulatory Fee]	[$90 per permit per month]	[The Trading Permit Holder Regulatory Fee is non-refundable and is assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the Trading Permit Holder Regulatory Fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month.]

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[Cboe Command Connectivity Charges (28) (Also applies to GTH)(37)]		[Assessed to TPHs and non-TPHs]	
[Description]	**[Fee]**	**[Frequency]**	**[Notes]**
[Network Access Port (1 Gbps)]	[$1500]	[Monthly]	[Separate Network Access Port fees are assessed for unicast (orders, quotes) and multicast (market data) connectivity (i.e., if a TPH uses the 1 Gbps Network Access Port for unicast and multicast connectivity, the TPH will be charged $3,000 per month.) If a TPH uses the same port for RTH and GTH, the TPH will not be charged twice for that port.]
[Network Access Port (10 Gbps)]	[$5,000]	[Monthly]	
[Network Access Port (1Gbps) (Disaster Recovery)]	[$2,000]	[Monthly]	[Disaster Recovery Network Access Ports may be used to connect to the Disaster Recovery Systems of C2, Cboe BZX, Cboe BYX, Cboe EDGX, Cboe EDGA and CFE. Market participants will only be assessed a single fee for any Disaster Recovery Network Access Port that accesses these exchanges, If a market participant maintains two Disaster Recovery Network Access Ports of the same size in order to receive unicast and multicast connectivity, that market participant will only be assessed a single fee (e.g., if a TPH uses one 1 Gbps Disaster Recovery Network Access Port to receive only unicast traffic and one 1 Gbps Disaster Recovery Network Access Port to receive only multicast traffic, the TPH will be charged $2,000 per month).]
[Network Access Port (10 Gbps) (Disaster Recovery)]	[$6,000]	[Monthly]	
[CMI Login ID]	[$750]	[Monthly]	[CMI and FIX Login ID fees are waived for CMI and FIX Login IDs used to access the CFLEX system. Fees for a CMI and FIX Login ID will be waived through September 30, 2019, if the CMI and/or FIX Login ID is related to a waived GTH Trading Permit and/or waived Bandwidth Packet.]
[FIX Login ID]	[$750]	[Monthly]	

[Description]	**[Fee]**	**[Frequency]**	**[Trading Permits]**	**[CAS Servers]**	**[Total CAS Servers]**	**[Notes]**
[Extra CMI CAS Server]	[$10,000]	[Monthly]	[1 - 15]	[1 + 1 Backup]	[2]	[TPHs will receive CAS Servers based on the number of trading permits a TPH holds. The Exchange will aggregate the Trading Permits from affiliated TPHs (TPHs with at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A) for purposes of determining the number of Trading Permits a TPH holds.]
			[16 - 30]	[2 + 1 Backup]	[3]	
			[31 - 45]	[3 + 1 Backup]	[4]	
			[46 -60]	[4 + 1 Backup]	[5]	
			[61 - 75]	[5 + 1 Backup]	[6]	
			[76 - 90]	[6 + 1 Backup]	[7]	
			[91 +]	[7 + 1 Backup]	[8]	
[Extra CMI CAS Server - GTH (37)]	[$10,000]	[Monthly]		[1 + Shared Backup]		[TPHs will receive one CAS Server and access to a pool of shared backup CAS Servers dedicated to GTH. Additional CAS Servers can be purchased for a monthly fee of $10,000 per CAS.]

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Electronic Trading Permit Fees		
Type of Permit	**Cost Per Month**	**Notes**
Market-Maker Electronic Access Permit	$5,000	Entitles the holder to act as a Market-Maker in RTH and GTH.
Electronic Access Permit	$3,000	Entitles the holder to access the Exchange electronically, including those that act as a Clearing TPH, and submit orders to the Exchange in RTH and GTH. To act as a Clearing TPH in GTH, a Clearing TPH must be registered with OCC for the GTH session.
Clearing TPH Permit	$2,000	Entitles the holder to act solely as a Clearing TPH in RTH and GTH. To act as a Clearing TPH in GTH, a Clearing TPH must be registered with OCC for the GTH session.
Access fees are non-refundable and are assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Trading Permit Holders will only be assessed a single monthly fee for each type of electronic Trading Permit it holds. For the month of October, Trading Permits will be assessed the full month rates based on the quantity of Permits a TPH maintains from October 7 – October 31, 2019.		

Market-Maker EAP Appointments Sliding Scale			
	Quantity	Monthly Fee (per permit)	Notes
Appointment Units	1	$0	Appointment Units are set forth in Exchange Rule 5.50(g). Appointment Units for each assigned class will be aggregated for each Market-Maker and Market-Maker affiliate. If the sum of appointments is a fractional amount, the total will be rounded up to the next highest whole Appointment Unit. Total quantity is determined by the highest quantity used at any point during the month.
	2	$6,000	
	3 to 5	$4,000	
	> 5	$3,100	

Market-Maker Tier Appointment Fees		
Symbol	Criteria	Monthly Fees (per unit)
SPX	MM Floor Permit executes any contracts in SPX/SPXW	$3,000 per MM Floor Permit
	Market-Maker EAP executes any contracts in SPX/SPXW	$3,000 per TPH
VIX	MM Floor Permit executes at least 1,000 contracts in VIX	$2,000 per MM Floor Permit
	Market-Maker EAP executes at least 1,000 contracts in VIX	$2,000 per TPH
RUT	MM Floor Permit executes at least 1,000 contracts in RUT	$1,000 per MM Floor Permit
	Market-Maker EAP executes at least 1,000 contracts in RUT	$1,000 per TPH

Floor Broker Trading Surcharge			
Symbol	Criteria	Monthly Fees (per unit)	Notes
SPX	FB Trading Permit Holder executes >20,000 contracts in SPX/SPXW	$3,000 per TPH	If and to the extent that a Trading Permit Holder or TPH organization has more than one Floor Broker Trading Permit that is utilized to execute SPX options transactions, the SPX executions of that Trading Permit Holder or TPH organization shall be aggregated for purposes of determining this additional monthly fee and the Trading Permit Holder or TPH organization shall be charged a single $3,000 fee for the combined SPX executions through those Floor Broker Trading permits if the executions exceed 20,000 contracts per month. The SPX Surcharge will not be assessed to a Floor Broker Trading Permit Holder who (i) only executes SPX (including SPXW) options transactions as part of multi-class broad-based index spread transactions, and (ii) submits the SPX Tier Appointment Fee Exclusion for Multi-Class Broad-Based Index Spread Transactions Form within three business days of execution of the applicable spread transaction(s).
VIX	FB Trading Permit Holder executes >20,000 contracts in VIX	$2,000 per TPH	If and to the extent that a Trading Permit Holder or TPH organization has more than one Floor Broker Trading Permit that is utilized to execute VIX options transactions, the VIX executions of that Trading Permit Holder or TPH organization shall be aggregated for purposes of determining this additional monthly fee and the Trading Permit Holder or TPH organization shall be charged a single $2,000 fee for the combined VIX executions through those Floor Broker Trading Permits if the executions exceed 20,000 contracts per month.

Market-Maker Access Credit (44)			
	Liquidity Provider Sliding Scale Adjustment Performance Tier	% Credit on Monthly Bulk Port Fees	Notes
MM Access Credit	1	0%	The Performance Tier earned by a Market-Maker under the Liquidity Provider Sliding Scale Adjustment Table will determine the percentage credit applied to a Market-Maker's monthly Bulk Port fees.
	2	0%	
	3	0%	
	4	40%	
	5	40%	

Floor Trading Permit Sliding Scales			
Type of Permit	**Permit Quantity**	**Monthly Fee (per permit)**	**Notes**
Market-Maker Floor Permit	1	$6,000	Entitles the holder to act as a Market-Maker on the floor of the exchange.
	2 to 5	$4,500	
	6 to 10	$3,500	
	> 10	$2,000	
Floor Broker Permit	1	$7,500	Entitles the holder to act as a Floor Broker on the floor of the exchange.
	2 to 3	$5,700	
	4 to 5	$4,500	
	> 5	$3,200	
Access fees are non-refundable and are assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Floor Trading Permit Fees are charged based on the maximum number of Floor Permit fees held during the month. For the month of October, Trading Permits will be assessed the full month rates based on the quantity of Permits a TPH maintains from October 7 – October 31, 2019.			

Floor Broker ADV Discount			
Tier	**ADV**	**Floor Broker Permit Rebate**	**Notes**
1	0 to 99,999	0%	Floor Broker Trading Permit fees will be eligible for rebates based on the average customer ("C") open-outcry contracts executed per day over the course of a calendar month in all underlying symbols. The Floor Broker ADV Discount will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations.
2	100,000 to 174,999	15%	
3	> 174,999	25%	

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Physical Connectivity Fees			
Service	**Monthly Fees (per port)**	**Monthly Fees (per port) Effective November 1, 2019**	**Notes**
1 Gb Physical Port	$1,500 (through October 31, 2019)	$1,500	Effective October 7, 2019, TPHs and non-TPHs may elect to connect to Cboe Options' trading system via new Physical Ports. Physical Port fees will be prorated based on the remaining trading days in the calendar month. If a TPH obtains a new C1 latency equalized Physical Port to replace a legacy Network Access Port within the month of October 2019, the TPH will not be billed for the new replacement Phsyical Port until November 2019.
10 Gb Physical Port	$5,000 (through October 31, 2019)	$7,000	
1 Gb Network Access	$1,500 (through October 31, 2019)	$1,500	Through January 31, 2020, TPHs and non-TPHs will continue to have the ability to connect to Cboe Options' trading system via the current Network Access Ports.
10 Gb Network Access	$5,000 (through October 31, 2019)	$7,000	
1 Gb Physical Port (Disaster Recovery)	$2,000	$2,000	Disaster Recovery Physical Ports may be used to connect to the Disaster Recovery Systems of C2, Cboe BZX, Cboe BYX, Cboe EDGX, Cboe EDGA and CFE. Market participants will only be assessed a single fee for any Disaster Recovery Physical Port that accesses these exchanges. If a market participant maintains two Disaster Recovery Physical Ports of the same size in order to receive unicast and multicast connectivity, that market participant will only be assessed a single fee (e.g., if a TPH uses one 1 Gb Disaster Recovery Physical Port to receive only unicast traffic and one 1 Gb Disaster Recovery Physical Port to receive only multicast traffic, the TPH will be charged $2,000 per month)
10 Gb Phsyical Port (Disaster Recovery)	$6,000	$6,000	

Logical Connectivity Fees

Service	Quantity	Monthly Fees (per port)	Notes
BOE/FIX Logical Ports	1 to 5	$750	Each BOE or FIX Logical Port will incur the logical port fee indicated when used to enter up to 70,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 70,000 per day per logical port will incur an additional logical port fee of $800 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all subscribed BOE and FIX Logical Ports. Fees for one FIX Logical Port used to access PULSe and one FIX Logical Port connection used to access Cboe Silexx (for FLEX trading purposes) will be waived per TPH.
	> 5	$800	
BOE Bulk Logical Ports	1 to 5	$1,500	Each BOE Bulk Logical Port will incur the logical port fee indicated when used to enter up to 30,000,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 30,000,000 orders per day per BOE Bulk Logical Port will incur an additional logical port fee of $3,000 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all subscribed BOE Bulk Logical Ports.
	6 to 30	$2,500	
	> 30	$3,000	
Drop Logical Ports		$750	
Purge Ports		$850	
GRP Ports		$750/primary (A or C Feed)	
Multicast PITCH/Top Spin Server Ports		$750/set of primary (A or C Feed)	

New requests will be prorated for the first month of service. Cancellation requests are billed in full month increments as firms are required to pay for the service for the remainder of the month, unless the session is terminated within the first month of service. Port fees for BOE, FIX, BOE Bulk and Drop ports will be assessed the full month rates for October for ports available for use on the new trading platform beginning October 7, 2019. The port fees for BOE, FIX, BOE BULK and Drop ports added on or after October 7, 2019, will be pro-rated. Fees for Purge, Spin Server and GRP will be pro-rated beginning October 7, 2019. For October 2019, average daily order quantities used to determine incremental usage will be determined based on the number of trading days between October 7th and October 31st.

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Footnotes (Continued):

Footnote Number	Description
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[24]Reserved	[The sliding scale will be available for all Market-Maker Trading Permits held by affiliated Trading Permit Holders and TPH Organizations that are used for appointments in any options classes other than RUT, SPX, VIX, OEX and XEO. Any Market-Maker Trading Permits used for these classes, whether in whole or in part, are excluded from this sliding scale and will be priced at $5,000/month. To qualify for the rates set forth in Tiers 1 and 2 in the sliding scale, the applicable Trading Permit Holder(s) and/or TPH organization(s) must commit in advance to a specific tier that includes a minimum number of eligible Market-Maker Trading Permits through September 2019. To do so, a Market-Maker Trading Permit Holder must notify the Registration Services Department by December 29th (or the preceding business day if the 29th is not a business day) of the year prior to each year in which the Market Maker Trading Permit Holder would like to commit to this sliding scale of the Tier of eligible Market-Maker Trading Permits committed to by that Market-Maker Trading Permit Holder through September 2019. Market-Makers are not obligated to commit to either tier. However, the discounts will apply only to those that do commit to Tier 1 or Tier 2 through September 2019. Trading Permit Holders that are not eligible for and/or do not commit to Tier 1 or Tier 2 will pay the standard rate for each Market-Maker Trading Permit, regardless of the total number of Market-Maker Trading Permits used. If a Trading Permit Holder chooses to commit to either Tier 1 or Tier 2, that Trading Permit Holder will be responsible for the minimum number of permits in the commitment tier through September 2019. Even if a Trading Permit Holder does not maintain the minimum level of eligible Trading Permits in the tier, that Trading Permit Holder is still responsible for the minimum payment for that commitment tier through September 2019. For example, a Trading Permit Holder that commits to eleven eligible permits per month will be subject to a minimum monthly access fee of $53,700 (10 x $5,000 plus $3,700 = $53,700) through September 2019. Any additional Permits will increase the fee by the applicable amount. Trading Permit Holders will be able to commit to a higher tier of the sliding scale through September 2019, if the Trading Permit Holder obtains enough eligible Market-Maker Trading Permits and provides written notification to the Registration Services Department by the 25th day of the month preceding the month in which the higher tier will be effective (or the preceding business day if the 25th is not a business day). For example, a Trading Permit Holder may provide written notice to commit to Tier 1 effective July 1 through September 2019 as long as the Trading Permit Holder obtains enough eligible Trading Permits and provides written notice by June 25th that the Trading Permit Holder would like to participate in the sliding scale starting in July through September 2019. Even if that Trading Permit Holder subsequently falls below the minimum number of eligible Market-Maker Trading Permits (in the committed calendar year), for the committed tier, the Trading Permit Holder will remain responsible for paying for the tier minimum through September 2019. Trading Permit Holders will be responsible to pay for at least the minimum amount of eligible Market-Maker Trading Permits in the committed tier through September 2019 on a monthly basis unless the Trading Permit Holder entirely terminates as a Trading Permit Holder before September 2019. If a Trading Permit Holder combines, merges, or is acquired prior to September 2019, the surviving Trading Permit Holder will maintain responsibility for the committed number of eligible Market-Maker Trading Permits. If a Market-Maker affiliate (“affiliate” defined as having at least 75% common ownership between the two entities as reflected on each entity’s Form BD, Schedule A) receives a credit under the Exchange’s Volume Incentive Program (“VIP”), that Market-Maker will receive a credit on its Market-Maker Trading Permit fees corresponding to the VIP tier reached (10% Market-Maker Trading Permit fee credit for reaching Tier 2 of the VIP, 20% Market-Maker Trading Permit fee credit for reaching Tier 3 of the VIP, and 30% Market-Maker Trading Permit fee credit for reaching Tier 4 of the VIP). This credit will not apply to Market-Maker Trading Permits used for appointments in RUT, SPX, VIX, OEX and XEO.]

[25]RESERVED	[The Floor Broker Trading Permit Sliding Scale will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations. To qualify for the rates set forth in Tiers 1 and 2 in the sliding scale, the applicable Trading Permit Holder(s) and/or TPH organization(s) must commit in advance to a specific tier that includes a minimum number of eligible Floor Broker Trading Permits through September 2019. To do so, a Floor Broker Trading Permit Holder must notify the Registration Services Department by December 29th (or the preceding business day if the 29th is not a business day) of the year prior to each year in which the Floor Broker Trading Permit Holder would like to commit to this sliding scale of the Tier of eligible Floor Broker Trading Permits committed to by that Floor Broker Trading Permit Holder through September 2019. Floor Brokers are not obligated to commit to either tier. However, the discounts will apply only to those that do commit to Tier 1 or Tier 2 through September 2019. Trading Permit Holders that are not eligible for and/or do not commit to Tier 1 or Tier 2 will pay the standard rate of $9,000 for each Floor Broker Trading Permit, regardless of the total number of Floor Broker Trading Permits used. If a Trading Permit Holder chooses to commit to either Tier 1 or Tier 2, that Trading Permit Holder will be responsible for the minimum number of permits in the commitment tier through September 2019. Even if a Trading Permit Holder does not maintain the minimum level of eligible Trading Permits in the tier, that Trading Permit Holder is still responsible for the minimum payment for that commitment tier through September 2019. For example, a Trading Permit Holder that commits to eight eligible permits per month will be subject to a minimum monthly access fee of $42,000 (1 at $9,000 plus 6 at $5,000 plus 1 at $3,000 = $42,000) through September 2019. Any additional Permits will increase the fee by the applicable amount. Trading Permit Holders will be able to commit to a higher tier of the sliding scale through September 2019, if the Trading Permit Holder obtains enough eligible Floor Broker Trading Permits and provides written notification to the Registration Services Department by the 25th day of the month preceding the month in which the higher tier will be effective (or the preceding business day if the 25th is not a business day). For example, a Trading Permit Holder may provide written notice to commit to Tier 1 effective July 1 through September 2019 as long as the Trading Permit Holder obtains enough eligible Trading Permits and provides written notice by June 25th that the Trading Permit Holder would like to participate in the sliding scale starting in July through September 2019. Even if that Trading Permit Holder subsequently falls below the minimum number of eligible Floor Broker Trading Permits (in the committed calendar year), for the committed tier, the Trading Permit Holder will remain responsible for paying for the tier minimum through September 2019. Trading Permit Holders will be responsible to pay for at least the minimum amount of eligible Floor Broker Trading Permits in the committed tier through September 2019 on a monthly basis unless the Trading Permit Holder entirely terminates as a Trading Permit Holder before September 2019. If a Trading Permit Holder combines, merges, or is acquired prior to September 2019, the surviving Trading Permit Holder will maintain responsibility for the committed number of eligible Floor Broker Trading Permits. Any Floor Broker Trading Permit Holder that executes an average of 15,000 customer and/or professional customer and voluntary professional open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Sector Indexes (47) and Underlying Symbol List A (except RLG, RLV, RUI and UKXM)(34), DJX, XSP and subcabinet trades, will receive a rebate of $9,000 on that Floor Broker Trading Permit Holder's Floor Broker Trading Permit fees. Any Floor Broker Trading Permit Holder that executes an average of 25,000 customer and/or professional customer and voluntary professional open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Sector Indexes (47) and Underlying Symbol List A (except RLG, RLV, RUI and UKXM)(34), DJX, XSP and subcabinet trades, will receive a rebate of $14,000 on that Floor Broker Trading Permit Holder's Floor Broker Trading Permit fees. For purposes of determining the rebate, the qualifying volume of all Floor Broker Trading Permit Holders affiliated with a single TPH organization will be aggregated, and, if such total meets or exceeds the customer and/or professional customer and voluntary professional open-outcry contracts per day thresholds in all underlying symbols excluding Sector Indexes (47) and Underlying Symbol List A
[26]RESERVED	[Trading Permit (for both RTH and GTH) and Tier Appointment fees are non-refundable and are assessed through the integrated billing system during the first week of the following month. If a RTH or GTH Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. RTH and GTH Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Registration Services Department by 4:00 pm on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. If cancellation of a RTH or GTH Trading Permit is effective prior to the end of the applicable month, and the cancelling Trading Permit Holder later requests issuance of the same type of Trading Permit for the remainder of that month, the Exchange may issue the same type of Trading Permit (provided that a Trading Permit is available) but will not impose the additional prorated access fee for that month. Tier appointments will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Market Quality Assurance & DPM Administration Department by the last business day of the prior month to cancel the tier appointment effective at or prior to the end of the applicable month. Affiliated TPHs (TPHs with at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A) may share their allotted bandwidth amongst each other.]

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37	Global Trading Hours ("GTH") is a separate trading session from Regular Trading Hours ("RTH") for VIX, SPX and SPXw. GTH commences at 2:00AM CST and terminates at 8:15AM CST, and is conducted on an all-electronic trading model with no open outcry capability. [GTH is a segregated trading session from RTH, requiring separate access permits and connectivity than RTH, and there is no market interaction between the two sessions.]

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EXHIBIT 5B

(additions are underlined; deletions are [bracketed])

CBOE DATA SERVICES, LCC (CDS)
FEE SCHEDULE
October [1]2, 2019

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V. Systems Fees:

Port Fee: $[5]1,000/per data [port]source/month

Port Fee. The port fee is payable by any Customer that receives data through a direct connection to CDS or through a connection to CDS provided by an extranet service provider. The port fee applies to receipt of any Cboe Options data feed but is only assessed once per data [port] source.

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