SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-91781; File No. SR-Phlx-2020-41]

Self-Regulatory Organizations; Nasdaq PHLX LLC; Notice of Filing of Amendment Nos. 1 and 2 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, to List and Trade Options on a Nasdaq-100 Volatility Index

May 5, 2021

I. Introduction

On August 24, 2020, Nasdaq PHLX LLC (“Exchange” or “Phlx”) filed with the Securities and Exchange Commission (“Commission”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”) and Rule 19b-4 thereunder, a proposed rule change to list and trade options on a Nasdaq-100 Volatility Index (“Volatility Index” or “VOLQ”). The proposed rule change was published for comment in the Federal Register on September 8, 2020. On October 20, 2020, pursuant to Section 19(b)(2) of the Act, the Commission granted accelerated approval of the proposed rule change.

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the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to disapprove the proposed rule change. On December 4, 2020, the Commission instituted proceedings under Section 19(b)(2)(B) of the Act to determine whether to approve or disapprove the proposed rule change. On March 4, 2021, the Commission designated a longer period for Commission action on the proposed rule change. On March 11, 2021, the Exchange filed Amendment No. 1 to the proposed rule change, which replaced and superseded the proposed rule change. On April 19, 2021,

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5 See Securities Exchange Act Release No. 90226, 85 FR 67781 (October 26, 2020). The Commission designated December 7, 2020 as the date by which the Commission shall approve or disapprove, or institute proceedings to determine whether to disapprove, the proposed rule change.


8 See Securities Exchange Act Release No. 91254, 86 FR 13772 (March 10, 2021) (designating May 6, 2021 as the date by which the Commission shall approve or disapprove the proposal).

9 In Amendment No. 1, the Exchange: (i) sets the end of the trading session for options on the Volatility index at 4:00 P.M. ET instead of 4:15 P.M. ET; (ii) expands the venues of the thirty-two underlying Nasdaq-100 Index component options used to calculate the Closing Volume Weighted Average Price (i.e., settlement value for the Volatility Index options), which will be determined by reference to prices and sizes of executed orders or quotes on Phlx to also include Nasdaq ISE, LLC (“ISE”) and Nasdaq GEMX, LLC (“GEMX”); (iii) clarifies that The Nasdaq Stock Market LLC shall be the reporting authority for the VOLQ Index; (iv) states that executed orders shall include simple orders and complex orders, and that individual leg executions of a complex order will only be included if the executed price of the leg is at or within the national best bid or offer (“NBBO”); (v) commits to providing an annual report to the Commission for five years containing certain settlement data; (vi) states that Phlx will surveil for open interest in VOLQ in addition to Nasdaq-100 trading volume prior to settlement; and (vii) makes other clarifying and conforming changes throughout the filing. Amendment No. 1 is available at: https://www.sec.gov/comments/sr-phlx-2020-41/srphlx202041-8486517-229965.pdf.
the Exchange filed partial Amendment No. 2 to the proposed rule change. The Commission is publishing this notice to solicit comments on Amendment Nos. 1 and 2 from interested persons, and is approving the proposed rule change, as modified by Amendment Nos. 1 and 2, on an accelerated basis.

II. Description of the Proposed Rule Change, as Modified by Amendment Nos. 1 and 2

The Exchange proposes to list and trade options on VOLQ, a new index that measures changes in 30-day implied volatility of the Nasdaq-100 Index (“Nasdaq-100 Index” or “NDX”). As proposed, options on VOLQ will be cash-settled and will have European-style exercise provisions. The Exchange states that the Volatility Index will measure “at-the-money” volatility by using published real-time bid/ask quotes of NDX options and will be disseminated in annualized percentage points.

The Exchange proposes to list up to six weekly expirations and up to 12 standard (monthly) expirations in Volatility Index options. The six weekly expirations will be for the nearest weekly expirations from the actual listing date, and the weekly expirations will not expire in the same week in which standard (monthly) Volatility Index options expire. Standard (monthly) expirations in the Volatility Index options will not be counted as part of the maximum six weekly expirations permitted for Volatility Index options. In addition, the Exchange proposes that long term option series having up to sixty months to expiration may be listed and traded.

In Amendment No. 2, the Exchange removes the word “non-public” from the description of the annual report it will provide to the Commission. Amendment No. 2 is available at: https://www.sec.gov/comments/sr-phlx-2020-41/srphlx202041-8687377-235663.pdf.

Additional information regarding the proposal can be found in Amendment No. 1, supra note 9.
**Volatility Index Design and Composition**

The Exchange states that the Volatility Index reflects changes in 30-day implied volatility, which measures the magnitude of changes of the underlying broad-based securities index, NDX. According to the Exchange, the Volatility Index measures the expectation for market volatility over the next thirty calendar days as expressed by options on NDX. The Exchange explains that the Volatility Index uses the bid and offer prices of certain listed options on NDX to obtain the prices of synthetic precisely at-the-money options, which are then used to calculate 30-day closed-form implied volatility. Finally, the 30-day closed-form implied volatility is multiplied by 100 to calculate the Volatility Index level. The Volatility Index is quoted in annualized percentage points.

The Exchange believes that the proposed product does not have single or aggregated component concentration risk. The Exchange states that the methodology caps each single component as well as the top five weighted components. The Exchange further states that no component security of the Volatility Index comprises more than 12.50% of the index’s weighting and that the five highest weighted component securities of the Volatility Index in the aggregate do not comprise more than 43.75% of the index’s weighting.

**Index Calculation and Maintenance**

The Exchange states that the level of the Volatility Index will reflect the current 30-day implied volatility of NDX and will be updated on a real-time basis on each trading day beginning at 9:30 A.M. and ending at 4:00 P.M. ET. If the current published value of a component is not available, the last published value will be used in the calculation. Values of the Volatility Index will be disseminated via the Nasdaq GIDS.
market data system every fifteen seconds during the Exchange’s regular trading hours to
market information vendors such as Bloomberg and Thomson Reuters. In the event the
Volatility Index ceases to be maintained or calculated the Exchange will not list any
additional series for trading and will limit all transactions in such options to closing
transactions only for the purpose of maintaining a fair and orderly market and protecting
investors.

**Exercise and Settlement Value**

The exercise settlement value calculation used for Volatility Index option
settlement will be calculated on the Volatility Index Options expiration date, the specific
date (usually a Wednesday) identified in the option symbol for the series. If that
Wednesday or the Friday that is thirty days following that Wednesday is an Exchange
holiday, the exercise settlement value will be calculated on the business day immediately
preceding that Wednesday. The last trading day for a Volatility Index option will be the
business day immediately preceding the expiration date. When the last trading day is
moved because of an Exchange holiday, the last trading day for an expiring Volatility
Index option contract will be the day immediately preceding the last regularly scheduled
business day.

Monthly options on the Volatility Index will expire on the Wednesday that is
thirty days prior to the third Friday of the following the expiring month. Trading in
expiring options on the Volatility Index will normally cease at 4:00 P.M. ET on the
Tuesday preceding an expiration Wednesday.

**Final Settlement**
The Exchange states that the final settlement price (Ticker Symbol: VOLS) will be calculated as described below on Wednesday commencing at 9:32:000 A.M. ET on the expiration day, and continuing each second for the next 300 seconds (“Closing Settlement Period”). The exercise settlement amount will be equal to the difference between the final settlement price and the exercise price of the option, multiplied by $100. Exercise will result in the delivery of cash on the business day following expiration.

The Volatility Index’s component NDX options are listed on Phlx as well as on ISE and GEMX. The settlement value for the Volatility Index options will be the Closing Volume Weighted Average Price, to be determined by reference to the prices and sizes of executed orders or quotes in the thirty-two underlying NDX component options on the Phlx, ISE, and GEMX markets calculated near the opening of trading on the expiration date. The Exchange will observe the number of contracts resulting from orders and quotes of the then-current NDX component options executed on Phlx, ISE, and GEMX at each price during individual one-second intervals of the Closing Settlement Period on the expiration day. If no transactions occur on Phlx, ISE, or GEMX in an NDX component option during any one-second observation period, the NBBO midpoint of each of the NDX component options for which a transaction has not occurred at the end of the one-second observation period will be considered the One Second VWAP for that observation period for purposes of the settlement methodology. The NBBO midpoint will be the midpoint of the best bid and best offer from Phlx, ISE, and GEMX. Each One Second

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12 The Exchange calculates a volume weighted average price for each one-second observation period (a “One Second VWAP”) for each component option.
VWAP for each component option is then used to calculate the Volatility Index, resulting in the calculation of 300 sequential Volatility Index values. Finally, the Exchange states that all 300 Volatility Index values will be arithmetically averaged (i.e., the sum of 300 Volatility Index calculations is divided by 300) and the resulting figure is rounded to the nearest .01 to arrive at the settlement value.

Contract Specifications

The proposed options on the Volatility Index are European-style and cash-settled. The Exchange states that the trading hours for Volatility Index options will be 9:30 A.M. to 4:00 P.M. ET. The Exchange proposes to apply margin requirements for the purchase and sale of options on the Volatility Index that are identical to those applied for its other broad-based index options.

The Exchange states that trading of options on the Volatility Index will be subject to the trading halt procedures applicable to other index options traded on the Exchange. Options on the Volatility Index will be quoted and traded in U.S. dollars. Accordingly, the Exchange believes that all Exchange and The Options Clearing Corporation members will be able to accommodate trading, clearance, and settlement of the Volatility Index without alteration. All options on the Volatility Index will have a minimum increment of $0.05 for options trading below $3.00 and $0.10 for all other series.

The Exchange proposes to set the minimum strike price interval for options on the Volatility Index at $0.50 or greater where the strike price is less than $75, $1 or greater where the strike price is $200 or less, and $5 or greater where the strike price is more than $200. The Exchange proposes that there shall be no position or exercise limits for options on the Volatility Index and that trading of options on the Volatility Index will be
subject to the same rules that presently govern the trading of Exchange index options, including sales practice rules, margin requirements, and trading rules.

The Exchange believes that it is unlikely that the Volatility Index settlement value could be manipulated because the likelihood of gaming the components over a 300-second period is extremely low. The Exchange states that because the 32 component option inputs are determined each second (meaning that Volatility Index components could change 300 times during the settlement period), market participants would have to predict market moves over the full settlement period in order to manipulate the settlement value. Additionally, the Exchange believes that traders are subject to highly competitive market forces of deep and established market liquidity. For example, the Exchange notes that during each second of the final settlement observation period on January 16, 2019 and February 13, 2019, the average notional value of each bid of the thirty-two components was $21.1 million; the average notional value of each offer was $13.5 million. Finally, the Exchange states that since the Volatility Index assesses each second of all listed NDX options, this is a continuous assessment of competitive price action and voluminous trading activity for all Nasdaq-100 Index stock components. In support, the Exchange notes that during the final settlement observation period (five-minute period) on January 16, 2019 and February 13, 2019, the average summation of traded volume for all Nasdaq-100 Index component shares was 18.8 million shares. The Exchange states that the average total value of all Nasdaq-100 Index shares traded during the final settlement observation period was $1.93 billion and the corresponding market capitalization for all Nasdaq-100 Index components during the final settlement period was $7.8 trillion.
The Exchange represents that it has an adequate surveillance program in place for options traded on the Volatility Index and intends to apply those same program procedures that it applies to the Exchange’s other options products. Additionally, the Exchange states that it is a member of the Intermarket Surveillance Group, through which it can coordinate surveillance and investigative information sharing in the stock and options markets with all of the U.S. registered stock and options markets. Phlx believes that its surveillance procedures currently in place, coupled with additional surveillance measures, will allow it to adequately surveil for any potential manipulation in the trading of Volatility Index options. The Exchange states it will monitor the integrity of the Volatility Index by analyzing trades, quotations, and orders that affect any of the 300 calculated reference prices for any of the NDX option series used for the final settlement calculation for potential manipulation. In particular, the Exchange states it will: (i) monitor all NDX NBBO quotes and trades (including but not limited to NDX quotes and trades on the Exchange) during the opening for all options series that are used as part of the final settlement; (ii) surveil for open interest manipulation by monitoring VOLQ and NDX trading volume prior to settlement; (iii) monitor trading on Phlx, ISE, and GEMX after the Closing Settlement Period for possible wash trading, pre-arranged, or related artificial activity; and (iv) compare quotes for settlement against quotes for non-settlement in the 32 NDX option series used for settlement between the opening and a period of time thereafter, with a focus on identifying deviations of the midpoint, the bid-ask spread, and other market elements compared to the Nasdaq-100 Index value. The Exchange also represents that it has the necessary system capacity to support additional
quotations and messages that will result from the listing and trading of options on the Volatility Index.

The Exchange committed to providing the Commission an annual report each year for 5 years on the anniversary of the first day of trading of VOLQ options. The annual report shall consist of twelve monthly data files, one for each month, with settlement information from the prior year which contains: (1) one-second NBBO (bid price, bid size, offer price, offer size, exchange code for bid and offer, time stamp and timestamp reference) and Options Price Reporting Authority trade data (trade price, volume, exchange code, trade indicator, exchange code) for the VOLS NDX component options from 9:30:00 A.M. ET to 9:45:00 A.M. ET; (2) all VOLS one-second index values (over the final settlement window between 9:32:01 A.M. ET and 9:37:00 A.M. ET) used in deriving the final settlement value for Nasdaq-100 Volatility Index futures contracts; and (3) expiring VOLQ options open interest.

III. Discussion and Commission Findings

After careful review of the proposed rule change, as modified by Amendment Nos. 1 and 2, as well as comment received, the Commission finds that the proposed rule change, as modified by Amendment Nos. 1 and 2, is consistent with the Act and the rules and regulations thereunder applicable to a national securities exchange.\textsuperscript{13} In particular, the Commission finds that the proposed rule change, as modified by Amendment Nos. 1 and 2, is consistent with Section 6(b)(5) of the Act,\textsuperscript{14} which requires, among other things,

\textsuperscript{13} In approving this proposed rule change, the Commission has considered the proposed rule’s impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

\textsuperscript{14} 15 U.S.C. 78f(b)(5).
that the Exchange’s rules be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, 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.

In support of its proposal, the Exchange states that the Volatility Index final settlement has exceedingly high hurdles for potential manipulation. First, the Exchange believes that market participants cannot predict which components will be included in the final settlement. Second, the Exchange believes that traders are subject to competitive market forces of deep and established market liquidity. In addition, the Exchange amended its proposal to incorporate all trades in the component options into the settlement calculation, rather than only trades occurring on the Exchange, and to specify that legs of complex order transactions would only be included in the calculation if they were at or within the NBBO. The Exchange also committed to provide five years of monthly settlement data on an annual basis.15

The Exchange also states that the proposal will facilitate the listing and trading of an index option product with a novel structure, which would enhance competition among market participants. A commenter, who states it is the provider of the VOLQ methodology, also expressed support for the proposal. The commenter states that VOLQ

15 In Amendment No. 2, the Exchange removed the word “non-public” from its description of the annual report it would provide to the Commission. See Amendment No. 2, supra note 10. The provision of annual settlement data for five years will assist the Commission in monitoring settlement inputs and values and assessing how the market for VOLQ and the underlying NDX component options may change over time.
is a response to requests from market participants and that competition and innovation generated by VOLQ are in the public interest and will benefit investors.\textsuperscript{16}

The Commission believes that the Exchange’s proposal, including the settlement methodology, as amended, in conjunction with the Exchange’s existing and additional proposed surveillance procedures, will help to ensure that the settlement value is not readily susceptible to manipulation. The amended settlement methodology incorporates additional trade information by including transactions on all markets trading the component NDX options while ensuring that individual leg executions of complex orders that may have traded through the NBBO are not included in the settlement calculation. The Commission believes this will contribute to a more robust settlement methodology. The Volatility Index and the settlement value are calculated based on quotes, orders, or trades in the component NDX options and the settlement value calculation relies on 32 unique inputs each second over 300 seconds. The 32 component NDX options that are the basis of such inputs may change every second over the settlement window depending on the value of the Nasdaq-100 Index. The Exchange states that it will monitor for any potential manipulation of the Volatility Index settlement value in the normal course of its surveillance. Additionally, the Exchange has proposed enhanced surveillance procedures to further analyze trades, quotations, and orders that affect any of the 300 calculated reference prices for any NDX option series used for the final settlement calculation. The Commission believes the Exchange’s existing and additional surveillance procedures will

allow the Exchange to monitor for anomalous trades, quotations, and orders that may be indicative of manipulative trading or quoting activity. The Commission finds that the Exchange’s proposal regarding surveillance of options on the Volatility Index and the component option series will allow it to adequately surveil for any potential manipulation in the trading of VOLQ. Therefore, the Commission finds the settlement design, as amended, when combined with the Exchange’s existing and proposed enhanced surveillance procedures, will prevent fraudulent and manipulative acts and practices and protect investors and the public interest.

The Commission believes that the Exchange’s proposal to impose no position limits on the Volatility Index options is appropriate and consistent with the Act. As stated above, the Volatility Index will settle using published volume and/or quotes from NDX options. Given that there are currently no position limits for NDX options, the Commission believes it is appropriate for there to be no position or exercise limits for options on the Volatility Index since the potential manipulation and potential market disruption concerns that position limits are designed to address are mitigated in the case of this product. According to the Exchange, the market capitalization of the NDX was approximately $11.42 trillion and contained approximately 74.7 billion component shares as of June 30, 2020. The Commission believes that the enormous market capitalization of NDX and the deep, liquid market for the underlying component securities significantly reduce concerns regarding market manipulation or disruption in the underlying market.

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17 See Phlx Options 4A, Section 6, “Position Limits,” section (a)(ii).
18 Phlx Options 4A, Section 10, “Exercise Limits,” provides “In determining compliance with Options 9, Section 15, exercise limits for index option contracts shall be equivalent to the position limits described in Options 4A, Section 6.”
Similar reasoning would apply to options on the Volatility Index since the value of options on the Volatility Index is derived from the volatility of NDX, as implied by its options. Moreover, the Commission believes that having no position limits for the proposed Volatility Index options may benefit investors by bringing additional depth and liquidity to these Volatility Index options without raising significant concerns about potential manipulation or potential market disruption.

The Commission believes that the proposed strike price intervals and minimum trading increments for options on the Volatility Index are appropriate and consistent with the Act. These aspects of the proposal will provide investors with added flexibility in the trading of these options and will further the public interest by allowing investors to establish positions that are better tailored to meet their investment objectives. In addition, the Exchange states it has the necessary system capacity to support additional quotations and messages that will result from the listing and trading of options on the Volatility Index.

As a national securities exchange, the Exchange is required, under Section 6(b)(1) of the Act,\textsuperscript{19} to enforce compliance by its members and persons associated with its members with the provisions of the Act, Commission rules and regulations thereunder, and its own rules. In this regard, the Exchange states that trading of options on the Volatility Index will be subject to the same rules that currently govern the trading of other index options on the Exchange. The Commission believes that it is consistent with the Act to apply Exchange rules governing, among other things, margin requirements and trading halt procedures to the proposed Volatility Index options that are otherwise

applicable to options on broad-based indexes.\textsuperscript{20} The Commission believes that the Exchange’s rules governing the trading of the Volatility Index options on the Exchange help to ensure the maintenance of fair and orderly markets for the options on the Volatility Index, which is consistent with the protection of investors and the public interest. Therefore, the Commission finds that the Exchange’s rules relating to trading of the options on the Volatility Index on the Exchange are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, 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.

Accordingly, the Commission finds that the proposed rule change, as modified by Amendment Nos. 1 and 2, is consistent with Section 6(b)(5) of the Act\textsuperscript{21} and the rules and regulations thereunder applicable to a national securities exchange.

IV. Solicitation of Comments on Amendment Nos. 1 and 2 to the Proposed Rule Change

Interested persons are invited to submit written views, data, and arguments concerning whether Amendment Nos. 1 and 2 are consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments:

\textsuperscript{20} The Commission’s approval of the listing and trading of the Volatility Index, which the Exchange proposes to treat as a broad-based index for purposes of certain of its options rules, does not address or relate to whether or not the index is broad-based for any other purposes, including for purposes of the definition of “narrow-based security index” in Section 3(a)(55)(B) of the Act and any related Commission orders.

\textsuperscript{21} 15 U.S.C. 78f(b)(5).
• 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-Phlx-2020-41 on the subject line.

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-Phlx-2020-41. 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, DC 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.

Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to
V. Accelerated Approval of the Proposed Rule Change, as Modified by Amendment Nos. 1 and 2

The Commission finds good cause to approve the proposed rule change, as modified by Amendment Nos. 1 and 2, prior to the thirtieth day after the date of publication of notice of the filing of Amendment Nos. 1 and 2 in the Federal Register. In Amendment No. 1, among other things, the Exchange modifies certain aspects of the proposal, including changes to the settlement methodology that incorporate additional pricing information, and commits to provide the Commission with annual settlement data for five years. In Amendment No. 2, the Exchange removes the word “non-public” from the description of the annual settlement data it will provide to the Commission. The changes to the proposal and additional information in Amendment Nos. 1 and 2 assist the Commission in evaluating the Exchange’s proposal and in determining that it is consistent with the Act. Accordingly, the Commission finds good cause, pursuant to Section 19(b)(2) of the Act, to approve the proposed rule change, as modified by Amendment Nos. 1 and 2, on an accelerated basis.

VI. Conclusion

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22 See supra note 9.
23 See supra note 10.
IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the Act,\(^{25}\) that the proposed rule change (SR-Phlx-2020-41), as modified by Amendment Nos. 1 and 2, be, and hereby is, approved on an accelerated basis.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.\(^{26}\)

**J. Matthew DeLesDernier,**

*Assistant Secretary.*

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\(^{25}\) *Id.*

\(^{26}\) 17 CFR 200.30-3(a)(12).