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SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-79584; File No. SR-Phlx-2016-119)

December 16, 2016

Self-Regulatory Organizations; NASDAQ PHLX LLC; Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1 Thereto, to Amend the PIXL Price Improvement Auction in Phlx Rule 1080(n) and to Make Pilot Program Permanent

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)<sup>1</sup>, and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on December 6, 2016, NASDAQ PHLX LLC (“Phlx” or “Exchange”) filed with the Securities and Exchange Commission (“SEC” or “Commission”) the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. On December 15, 2016, the Exchange filed Amendment No. 1 to the proposed rule change, which amended and replaced the proposed rule change in its entirety. The Commission is publishing this notice to solicit comments on the proposed rule change, as amended, from interested persons.

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

The Exchange proposes to amend Phlx Rule 1080(n), concerning a price-improvement mechanism entitled “Price Improvement XL”, also known as “PIXL.” Certain aspects of PIXL are currently operating on a pilot basis (“Pilot”), which was initially approved by the Commission in 2010,<sup>3</sup> and which is set to expire on January 18, 2017.<sup>4</sup> In this proposal, the Exchange proposes to make the Pilot permanent, and to change the requirements for providing

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Securities Exchange Act Release No. 63027 (October 1, 2010), 75 FR 62160 (October 7, 2010) (SR-Phlx-2010-108) (“PIXL Approval Order”).

<sup>4</sup> See Securities Exchange Act Release No. 78301 (July 12, 2016), 81 FR 46731 (July 18, 2016) (SR-PHLX-2016-75).

price improvement for PIXL Auction Orders, other than Auctions involving Complex Orders, of less than 50 option contracts.

The text of the proposed rule change is available on the Exchange's Website at <http://nasdaqphlx.cchwallstreet.com/>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

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

The purpose of this proposed rule change is to make permanent certain pilots within Rule 1080(n), relating to PIXL. In addition, Phlx proposes to modify the requirements for PIXL auctions involving less than 50 contracts (other than auctions involving Complex Orders) where the National Best Bid and Offer ("NBBO") is only \$0.01 wide.

Background

The Exchange adopted PIXL in October 2010 as a price-improvement mechanism on the Exchange.<sup>5</sup> PIXL is a component of the Exchange's fully automated options trading system,

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<sup>5</sup> In addition to the PIXL Approval Order and the most recent extension cited above, the following proposed rule changes have been submitted in connection with PIXL. See Securities Exchange Act Release Nos. 65043 (August 5, 2011), 76 FR 49824 (August 11, 2011) (SR-Phlx-2011-104) (Extending Pilot for Price Improvement System, Price

PHLX XL®, that allows an Exchange member (an “Initiating Member”) to electronically submit for execution an order it represents as agent on behalf of a public customer, broker dealer, or any other entity (“PIXL Order”) against principal interest or against any other order it represents as agent (an “Initiating Order”) provided it submits the PIXL Order for electronic execution into the PIXL Auction (“Auction”) pursuant to the Rule.

An Initiating Member may initiate a PIXL Auction by submitting a PIXL Order, which is not a Complex Order, in one of three ways:

- First, the Initiating Member could submit a PIXL Order specifying a single price at which it seeks to execute the PIXL Order (a “stop price”).
- Second, an Initiating Member could submit a PIXL Order specifying that it is willing to automatically match as principal or as agent on behalf of an Initiating Order the price and size of all trading interest and responses to the PIXL Auction Notification (“PAN,” as described below) (“auto-match”), in which case the PIXL Order will be stopped at the better of the National Best Bid/Offer (“NBBO”) or the Reference BBO<sup>6</sup> on the Initiating Order side.

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Improvement XL); 67399 (July 11, 2012), 77 FR 42048 (July 17, 2012) (SR-Phlx-2012-94) (Extending Pilot for Price Improvement System, Price Improvement XL); 69845 (June 25, 2013), 78 FR 39429 (July 1, 2013) (SR-Phlx-2013-46) (Order Granting Approval To Proposed Rule Change, as Modified by Amendment No. 1, Regarding Complex Order PIXL); 69989 (July 16, 2013), 78 FR 43950 (July 22, 2013) (SR-Phlx-2013-74) (Extending Pilot for Price Improvement System, Price Improvement XL); 70654 (October 10, 2013), 78 FR 62891 (October 22, 2013) (SR-Phlx-2013-76) (Order Granting Approval to Proposed Rule Change Relating to the Discontinuation of the Differentiation of Price Improvement XL Orders of Less Than 50 Contracts); 72619 (July 16, 2014), 79 FR 42613 (July 22, 2014) (Extending Pilot for Price Improvement System, Price Improvement XL); and 75470 (July 16, 2015) 80 FR 43509 (July 22, 2015) (Amending Exchange Rule 1080(n), Price Improvement XL (“PIXL”) to Extend, Until July 18, 2016, a Pilot Program).

<sup>6</sup> The “Reference BBO” is defined as the “internal market BBO”.

- Third, an Initiating Member could submit a PIXL Order specifying that it is willing to either: (i) stop the entire order at a single stop price and auto-match PAN responses, as described below, together with trading interest, at a price or prices that improve the stop price to a specified price above or below which the Initiating Member will not trade (a “Not Worse Than” or “NWT” price); (ii) stop the entire order at a single stop price and auto-match all PAN responses and trading interest at or better than the stop price; or (iii) stop the entire order at the better of the NBBO or Reference BBO on the Initiating Order side, and auto-match PAN responses and trading interest at a price or prices that improve the stop price up to the NWT price. In all cases, if the PHLX Best Bid/Offer (“PBBO”) on the same side of the market as the PIXL Order represents a limit order on the book, the stop price must be at least one minimum price improvement increment better than the booked limit order’s limit price.

In addition, an Initiating Member may initiate a PIXL Auction by submitting a Complex PIXL Order which is of a conforming ratio, as defined in Commentary .08(a)(i) and (a)(ix) to Rule 1080. When submitting a Complex PIXL Order, the Initiating Member must stop the PIXL Order at a price that is better than the best net price (debit or credit) (i) available on the Complex Order book regardless of the Complex Order book size; and (ii) achievable from the best PHLX bids and offers for the individual options (an “improved net price”), provided in either case that such price is equal to or better than the PIXL Order’s limit price.

After the PIXL Order is entered, a PAN is broadcast and a blind Auction ensues for a period of time as determined by the Exchange and announced on the Nasdaq Trader Website. The Auction period will be no less than one hundred milliseconds and no more than one second.

Anyone may respond to the PAN by sending orders or quotes. At the conclusion of the Auction, the PIXL Order will be allocated at the best price(s).

Once the Initiating Member has submitted a PIXL Order for processing, such PIXL Order may not be modified or cancelled. Under any of the above circumstances, the Initiating Member's stop price or NWT price may be improved to the benefit of the PIXL Order during the Auction, but may not be cancelled. Under no circumstances will the Initiating Member receive an allocation percentage, at the final price point, of more than 50% with one competing quote, order or PAN response or 40% with multiple competing quotes, orders or PAN responses, when competing quotes, orders or PAN responses have contracts available for execution. After a PIXL Order has been submitted, a member organization submitting the order has no ability to control the timing of the execution.

#### The Pilot

As described above, four components of the PIXL system are currently operating on a pilot basis: (i) auction eligibility for Complex Orders in a PIXL Auction; (ii) the provision that an unrelated market or marketable limit order (against the PBBO) on the opposite side of the market from the PIXL Order received during the Auction will not cause the Auction to end early and will execute against interest outside of the Auction; (iii) the early conclusion of a PIXL Auction; and (iv) no minimum size requirement of orders entered into PIXL. The pilot has been extended until January 18, 2017.<sup>7</sup>

As described in greater detail below, during the pilot period the Exchange has been required to submit, and has been submitting, certain data periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful

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<sup>7</sup> See note 4 above.

competition for all size orders, there is significant price improvement available through PIXL, and that there is an active and liquid market functioning on the Exchange both within PIXL and outside of the Auction mechanism. The Exchange has also analyzed the impact of certain aspects of the Pilot; for example, the early conclusion of an Auction due to the PBBO crossing the PIXL Order stop price on the same side of the market as the PIXL Order, or due to a trading halt.

The Exchange now seeks to have the Pilot approved on a permanent basis. In addition, the Exchange proposes to modify the scope of PIXL so that PIXL Orders for less than 50 option contracts, other than Auctions involving Complex Orders, will be required to receive price improvement of at least one minimum price improvement increment over the NBBO if the NBBO is only \$0.01 wide. For orders of 50 contracts or more, or if the difference in the NBBO is greater than \$0.01, and for Complex Orders, the requirements for price improvement remain the same.

#### Price Improvement for Orders Under 50 Contracts

Currently, a PIXL Auction may be initiated if all of the following conditions are met. If the PIXL Order (except if it is a Complex Order) is for the account of a public customer the Initiating Member must stop the entire PIXL Order (except if it is a Complex Order) at a price that is equal to or better than the National Best Bid/Offer (“NBBO”) and the internal market BBO (the “Reference BBO”) on the opposite side of the market from the PIXL Order, provided that such price must be at least one minimum price improvement increment (as determined by the Exchange but not smaller than one cent) better than any limit order on the limit order book on the same side of the market as the PIXL Order.

If the PIXL Order (except if it is a Complex Order) is for the account of a broker dealer or any other person or entity that is not a public customer the Initiating Member must stop the entire PIXL Order (except if it is a Complex Order) at a price that is the better of: (i) the Reference BBO price improved by at least one minimum price improvement increment on the same side of the market as the PIXL Order, or (ii) the PIXL Order's limit price (if the order is a limit order), provided in either case that such price is at or better than the NBBO and the Reference BBO.

PHLX proposes to amend the PIXL auction to require at least \$0.01 price improvement for a PIXL Order, except if it is a Complex Order, if that order is for less than 50 contracts and if the difference between the NBBO is \$0.01. Accordingly, PHLX is proposing to amend the Auction Eligibility Requirements to require that, if the PIXL Order (except if it is a Complex Order) is for less than 50 option contracts, and if the difference between the NBBO is \$0.01, the Initiating Member must stop the entire PIXL Order at one minimum price improvement increment better than the NBBO on the opposite side of the market from the PIXL Order, and better than any limit order on the limit order book on the same side of the market as the PIXL Order. This requirement will apply regardless of whether the PIXL Order is for the account of a public customer, or where the PIXL Order is for the account of a broker dealer or any other person or entity that is not a Public Customer. The Exchange will continue to require that the Initiating Member stop the entire PIXL Order at a price that is better than any limit order on the limit order book on the same side of the market as the PIXL Order regardless of the size of the PIXL Order and the width of the NBBO.

The Exchange will retain the current requirements for auction eligibility where the PIXL Order is for the account of a public customer and such order is for 50 option contracts or more,

or if the difference between the NBBO is greater than \$0.01. The Exchange will also retain the current requirements for auction eligibility where the PIXL Order is for the account of a broker dealer or any other person or entity that is not a public customer and such order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01.

Accordingly, the Exchange is amending the Auction Eligibility Requirements to state that, if the PIXL Order (except if it is a Complex Order) is for the account of a public customer and such order is for 50 option contracts or more or if the difference between the NBBO is greater than \$0.01, the Initiating Member must stop the entire PIXL Order at a price that is equal to or better than the NBBO on the opposite side of the market from the PIXL Order, provided that such price must be at least one minimum price improvement increment (as determined by the Exchange but not smaller than one cent) better than any limit order on the limit order book on the same side of the market as the PIXL Order.

Similarly, the Exchange is amending the Auction Eligibility Requirements to state that, if the PIXL Order (except if it is a Complex Order) is for the account of a broker dealer or any other person or entity that is not a public customer and such order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01, the Initiating Member must stop the entire PIXL Order (except if it is a Complex PIXL Order) at a price that is the better of: (i) the Reference BBO price improved by at least the Minimum Increment on the same side of the market as the PIXL Order, or (ii) the PIXL Order's limit price (if the order is a limit order), provided in either case that such price is at or better than the NBBO and the Reference BBO.<sup>8</sup>

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<sup>8</sup> In implementing this change, the System will reject a PIXL Order to buy if the NBBO is only \$0.01 wide and the agency order is stopped on the offer provided the order is not customer to customer. The system will reject a PIXL Order to sell if the NBBO is only \$0.01 wide and the Agency order is stopped on the bid provided the order is not customer to customer. The system will allow a customer to customer PIXL Order to trade on either

The Exchange also proposes to add language to Rule 1080(n)(i) to clarify that, if any of the auction eligibility criteria are not met, the PIXL Order will be rejected. The Exchange will also add language to Rule 1080(n)(i) to clarify the treatment of paired public customer -to-public customer orders pursuant to Rule 1080(n)(vi) as a result of these proposed changes. Specifically, Exchange will allow a PIXL Order to trade on either the bid or offer, pursuant to Rule 1080(n)(vi), if the NBBO is \$0.01 wide, provided (1) the execution price is equal to or within the NBBO, (2) there is no resting customer at the execution price, and (3) \$0.01 is the Minimum Price Variation (MPV) of the option. The Exchange also proposes to add language that it will continue to reject a PIXL Order to buy (sell) if the NBBO is only \$0.01 wide and the Agency order is stopped on the bid (offer) if there is a resting order on the bid (offer). These requirements are unchanged from the Exchange's current handling practices of paired public customer-to-public customer PIXL Orders per Rule 1080(n)(vi), and the Exchange's current practice of rejecting PIXL Orders to buy (sell) if the NBBO is only \$0.01 wide and the Agency order is stopped on the bid (offer) if there is a resting order on the bid (offer).

The Exchange believes that these changes to PIXL may provide additional opportunities for PIXL Orders, other than Complex Orders, of under 50 option contracts to receive price improvement over the NBBO where the difference in the NBBO is \$0.01 and therefore

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the bid or offer, if the NBBO is \$0.01 wide, provided (1) the execution price is equal to or within the NBBO, (2) there is no resting customer at the execution price, and (3) \$0.01 is the Minimum Price Variation (MPV) of the option. The system will continue to reject a PIXL Order to buy if the NBBO is only \$0.01 wide and the Agency order is stopped on the bid if there is a resting order on the bid. The system will continue to reject a PIXL Order to sell if the NBBO is only \$0.01 wide and the Agency order is stopped on the offer if there is resting order on the offer. The system will provide an explicit reject reason if the system rejects a PIXL Order because the NBBO is only \$0.01 wide and the PIXL Order did not improve the contra side NBBO. The handling of Complex PIXL Orders will be unchanged regardless of the NBBO width.

encourage the increased submission of orders of under 50 option contracts.<sup>9</sup> Phlx notes that the statistics for the current pilot, which include, among other things, price improvement for orders of less than 50 option contracts under the current auction eligibility requirements, show relatively small amounts of price improvement for such orders. Phlx believes that the proposed requirements will therefore increase the price improvement that orders of under 50 option contracts may receive in PIXL. The Exchange also notes that the initial PIXL requirements for auction eligibility differentiated between PIXL Orders for a size of less than 50 option contracts and PIXL Orders for a size of 50 contracts or more (both for PIXL Orders for the account of a public customer and for the account of a broker-dealer of any other person or entity that is not a public customer), with more stringent requirements for PIXL Orders for a size of less than 50 option contracts.<sup>10</sup>

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<sup>9</sup> For the reasons discussed below, the Exchange is not proposing to modify the auction eligibility requirements for Complex Orders to require increased improvement.

<sup>10</sup> See PIXL Approval Order, supra note 3. Specifically, if the PIXL Order was for the account of a public customer and was for a size of 50 contracts or more, the Initiating Member must stop the entire PIXL Order at a price that is equal to or better than the NBBO on the opposite side of the market from the PIXL Order, provided that such price must be at least one minimum price improvement increment (as determined by the Exchange but not smaller than one cent) better than any limit order on the limit order book on the same side of the market as the PIXL Order. See PIXL Approval Order, supra note 3. In contrast, if the PIXL Order was for the account of a public customer and is for a size of less than 50 contracts, the Initiating Member must stop the entire PIXL Order at a price that is the better of: (i) the PBBO price on the opposite side of the market from the PIXL Order improved by at least one minimum price improvement increment, or (ii) the PIXL Order's limit price (if the order is a limit order), provided in either case that such price is at or better than the NBBO, and at least one minimum price improvement increment better than any limit order on the book on the same side of the market as the PIXL Order. Id. The Exchange subsequently eliminated this size-based distinction for purposes of determining auction eligibility. See Securities Exchange Act Release No. 70654 (October 10, 2013), 78 FR 62891 (October 22, 2013) (Order approving SR-Phlx-2013-76). The auction eligibility requirements for orders of a size of less than 50 contracts, both for orders submitted for the account of a public customer and for orders submitted for the account of a broker-dealer or any other person or entity that is not a public customer, had been operating on a pilot basis, and were also eliminated

### Auction Eligibility Requirements for Complex Orders

Rule 1080(n) sets forth separate auction eligibility requirements for Complex Orders. If the PIXL Order is a Complex Order and of a conforming ratio, as defined in Rule 1098(a)(i) and (a)(ix), the Initiating Member must stop the entire PIXL Order at a price that is better than the best net price (debit or credit) (i) available on the Complex Order book regardless of the Complex Order book size; and (ii) achievable from the best Phlx bids and offers for the individual options (an “improved net price”), provided in either case that such price is equal to or better than the PIXL Order's limit price. Complex Orders consisting of a ratio other than a conforming ratio will not be accepted. This provision applies to all Complex Orders submitted into PIXL and, where applied to Complex Orders where the smallest leg is less than 50 contracts in size, is part of the current Pilot.

The Exchange is not proposing to modify the auction eligibility requirements for Complex Orders to require increased price improvement, as Rule 1080(n)(i)(C) already requires that the Initiating Member must stop the entire PIXL Order at a price that is better than the best net price (debit or credit) that is available on the Complex Order book regardless of the Complex Order book size; and that is achievable from the best Phlx bids and offers for the individual options, provided in either case that such price is equal to or better than the PIXL Order's limit price.

The Exchange is proposing, however, to make permanent the sub-paragraph concerning auction eligibility for Complex Orders in PIXL. Rule 1080(n)(i)(C) states that the auction

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accordingly. Id. In that order, the Commission noted that approving the elimination of the auction eligibility requirements for orders of under 50 option contracts did not affect the no minimum size pilot. Id.

eligibility requirements for a PIXL Order that is a Complex Order, where applied to Complex Orders where the smallest leg is less than 50 contracts in size, is part of the current Pilot.<sup>11</sup>

As noted above, when PIXL was initially proposed, the Exchange proposed auction eligibility requirements for simple PIXL Orders for a size of less than 50 contracts that were more stringent than the auction eligibility requirements for simple PIXL Orders for a size of 50 contracts or more. When initially proposed, the Exchange proposed to implement this size-based distinction on a pilot basis in order to ascertain the price improvement that small customer orders (i.e., less than 50 contracts) would receive under the Pilot.<sup>12</sup> In approving different auction eligibility requirements for simple PIXL Orders of less than 50 contracts, the SEC noted that it was approving this provision on a pilot basis so that it could ascertain the level of price improvement attained for smaller-sized orders during the pilot period.<sup>13</sup> When expanding PIXL to include Complex Orders, the Exchange proposed implementing size-based auction eligibility requirements for Complex Orders in PIXL on a pilot basis accordingly. The SEC subsequently

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<sup>11</sup> The Commission approved expanding PIXL to include Complex Orders in 2013, and approved this provision on a pilot basis. See Securities Exchange Act Release No. 69845 (June 25, 2013), 78 FR 39429 (July 1, 2013) (SR-Phlx-2013-46).

<sup>12</sup> See PIXL Approval Order, supra note 3. As initially approved, for public customer orders, if the simple PIXL Order was for 50 contracts or more, the Initiating Member must stop the entire PIXL Order at a price that is equal to or better than the National Best Bid/ Offer (“NBBO”) on the opposite side of the market from the PIXL Order, provided that such price must be at least one minimum price improvement increment (as determined by the Exchange but not smaller than one cent) better than any limit order on the limit order book on the same side of the market as the PIXL Order. If the PIXL Order was for a size of less than 50 contracts, the Initiating Member must stop the entire PIXL Order at a price that is the better of: (i) The PBBO price on the opposite side of the market from the PIXL Order improved by at least one minimum price improvement increment, or (ii) the PIXL Order’s limit price (if the order is a limit order), provided in either case that such price is better than the NBBO, and at least one minimum price improvement increment better than any limit order on the book on the same side of the market as the PIXL Order.

<sup>13</sup> See PIXL Approval Order, supra note 3.

approved the elimination of the size-based distinction for auction eligibility for simple PIXL Orders, and permitted Phlx to adopt the auction eligibility standard that previously applied to orders of 50 contracts or greater.<sup>14</sup>

Phlx believes it is appropriate to approve this aspect of the Pilot on a permanent basis for two reasons. First, Phlx notes that the auction eligibility requirements for simple PIXL Orders are currently operating on a permanent basis.<sup>15</sup> Although the auction eligibility requirements for Complex PIXL Orders distinguish between Complex PIXL Orders where the smallest leg is less than 50 contracts and Complex PIXL Orders where the smallest leg is 50 contracts or greater, the substantive auction eligibility requirements for all Complex PIXL Orders are currently the same. To the extent that the SEC approved the simple PIXL Order auction eligibility requirements on a pilot basis, it was to determine if the different auction eligibility requirements for simple PIXL Orders of less than 50 contracts resulted in different levels of price improvement for those orders in comparison to simple PIXL Orders of 50 contracts or greater. Since no comparable distinction exists here, and since the auction eligibility requirements for Complex PIXL Orders where the smallest leg is 50 contracts or greater is already operating on a permanent basis, Phlx believes it is appropriate to approve, on a permanent basis, the same auction eligibility requirements for Complex PIXL Orders where the smallest leg is less than 50 contracts.

Second, the Exchange also believes that it is appropriate to approve this aspect of the Pilot on a permanent basis for Complex Orders where the smallest leg is less than 50 contracts in size because this will continue to provide such Orders with the opportunity to receive price improvement. Specifically, the Exchange believes that the auction eligibility requirements,

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<sup>14</sup> See Securities Exchange Act Release No. 70654 (October 10, 2013), 78 FR 62891 (October 22, 2013) (SR-Phlx-2013-76).

<sup>15</sup> See footnote 10 supra.

which require a Complex Order to be stopped at a net debit/credit price that improves upon the stated markets present for the individual components of the Complex Order, ensure that at least one option leg will be executed at a better price than the established bid or offer for such leg. Moreover, as discussed in greater detail below, Phlx has gathered data throughout the Pilot that indicates that there is a robust market for simple orders, including small customer orders, both within and outside of PIXL, and significant opportunities for price improvement for small customer orders that are entered into PIXL. Phlx believes that the market for Complex Orders, including small customer orders, both within and outside of PIXL is similarly robust, and therefore believes it is appropriate to approve this aspect of the Pilot on a permanent basis.

#### No Minimum Size Requirement

Rule 1080(n)(vii) provides that, as part of the current Pilot, there will be no minimum size requirement for orders to be eligible for the Auction.<sup>16</sup> The Exchange proposed the no-minimum size requirement for PIXL auctions because it believed that this would provide small customer orders with the opportunity for price improvement. In initially approving PIXL, the Commission noted that it would evaluate the PIXL auction during the Pilot Period to determine whether it would be beneficial to customers and to the options market as a whole to approve any proposal requesting permanent approval to permit orders of fewer than 50 contracts to be submitted to the PIXL auction.<sup>17</sup>

The Exchange believes that the data gathered since the approval of the Pilot establishes that there is liquidity and competition both within PIXL and outside of PIXL, and that there are

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<sup>16</sup> The Rule also requires the Exchange to submit certain data, periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders and that there is an active and liquid market functioning on the Exchange outside of the Auction mechanism. Any raw data which is submitted to the Commission will be provided on a confidential basis.

<sup>17</sup> See PIXL Approval Order, supra note 3.

opportunities for significant price improvement within PIXL.<sup>18</sup> For simple PIXL Orders, in the period between January and June 2015, PIXL auctions executed 34.8 million contracts, which represents 11.4% of total PHLX contract volume. The average daily number of contracts traded on PIXL declined from 399,361 contracts per day in January 2015 to 187,062 contracts per day in June 2015. The percent of PHLX volume traded in PIXL auctions declined from 14.4% in January 2015 to 8.5% in June 2015. The percent of consolidated volume traded in PIXL auctions fell from 2.3% in January 2015 to 1.2% in June 2015.

For simple PIXL Orders, the mean number of unique participants in PIXL auctions was 4.0 and median was 3.0. The distribution of auctions and contracts traded by number of unique participants were similar, with a single participant in about 25% of auctions.

The Exchange has also gathered information about activity in orders for less than 50 contracts and 50 contracts or greater for simple PIXL auctions between January and June 2015. For auctions occurring during that period, 93% of auctions were for orders for less than 50 contracts, a percentage that increased slightly over that time period. Auctions for orders of less than 50 contracts accounted for 45.5% of the contract volume traded in PIXL. Auctions of 50

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<sup>18</sup> Specifically, the Exchange gathered and reported fifteen separate data fields relating to PIXL Orders of fewer than 50 contracts, including (1) the number of orders of fewer than 50 contracts entered into the PIXL Auction; (2) the percentage of all orders of fewer than 50 contracts sent to Phlx that are entered into the PIXL Auction; (3) the spread in the option, at the time an order of fewer than 50 contracts is submitted to the PIXL Auction; and (4) of PIXL trades where the PIXL Order is for the account of a public customer, and is for a size of fewer than 50 contracts, the percentage done at the NBBO plus \$.01, plus \$.02, plus \$.03, etc. The Exchange also gathered and reported multiple data fields relating to competition, including, for the first Wednesday of each month: (1) The total number of PIXL auctions on that date; (2) the number of PIXL auctions where the order submitted to the PIXL was fewer than 50 contracts; (3) the number of PIXL auctions where the order submitted to the PIXL was 50 contracts or greater; and (4) the number of PIXL auctions (for orders of fewer than 50 contracts) with 0 participants (excluding the initiating participant), 1 participant, 2 participants, etc. See PIXL Approval Order, supra note 3.

contracts or more made up 7.0% of all PIXL auctions and accounted for 54.5% of contracts traded in PIXL.

With respect to price improvement, 68.6% of PIXL auctions for simple PIXL Orders executed at a price that was better than the NBBO at the time the auction began. 69.2% of auctions for less than 50 contracts received price improvement. 56.3% of auctions for 50 contracts or more received price improvement. 66.5% of contracts in auctions for less than 50 contracts received price improvement. 55.7% of auctions for 50 contracts or more received price improvement. The equal-weighted average price improvement was 5.5% for auctions of less than 50 contracts and 4.9% for auctions of 50 contracts or more. Average price improvement was 5.6% when PBBO was at the NBBO and 3.4% when PBBO was not at the NBBO.

Phlx has also gathered data relating to the number of Complex Orders entered into PIXL. For November 2016, a total of 18,016 orders were entered into PIXL where the smallest leg was less than 50 contracts, representing 99,941 contracts.<sup>19</sup> For November 2016, a total of 641 orders were entered into PIXL where the smallest leg was 50 contracts or greater, representing 52,686 contracts.

PHLX believes that the data gathered during the Pilot period indicates that there is meaningful competition in PIXL auctions for all size orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that there are opportunities for significant price improvement for orders executed through PIXL. With respect to Complex Orders, the Exchange believes that this data establishes that there is liquidity and competition both within PIXL for Complex Orders and outside of PIXL for Complex Orders. The Exchange also believes that approving this aspect of the Pilot on a permanent basis would continue to

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<sup>19</sup> In connection with this amendment, this November 2016 data for Complex Orders is being submitted as Exhibit 3b to the filing.

permit the entry of small into PIXL, thereby continuing to provide such Orders with the opportunity for price improvement. The Exchange therefore believes that it appropriate to approve the no-minimum size requirement on a permanent basis for both simple and Complex PIXL Orders.

#### Early Conclusion of the PIXL Auction

Rule 1080(n)(ii)(B) provides that the PIXL Auction shall conclude at the earlier of (1) the end of the Auction period; (2) for a PIXL Auction (except if it is a Complex Order), any time the Reference BBO crosses the PIXL Order stop price on the same side of the market as the PIXL Order; (3) for a Complex Order PIXL Auction, any time the cPBBO<sup>20</sup> or the Complex Order book crosses the Complex PIXL Order stop price on the same side of the market as the Complex PIXL Order; or (4) any time there is a trading halt on the Exchange in the affected series.<sup>21</sup> The last three conditions are operating as part of the current Pilot.

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<sup>20</sup> Rule 1098(a) defines the cPBBO as “the best net debit or credit price for a Complex Order Strategy based on the PBBO for the individual options components of such Complex Order Strategy, and, where the underlying security is a component of the Complex Order, the National Best Bid and/or Offer for the underlying security.” See Rule 1098(a)(iv).

<sup>21</sup> If the situations described in either of the final three conditions occur, the entire PIXL Order will be executed at: (1) in the case of the Reference BBO crossing the PIXL Order stop price, the best response price(s) or, if the stop price is the best price in the Auction, at the stop price, unless the best response price is equal to or better than the price of a limit order resting on the PHLX book on the same side of the market as the PIXL Order, in which case the PIXL Order will be executed against that response, but at a price that is at least one minimum price improvement increment better than the price of such limit order at the time of the conclusion of the Auction; (2) in the case of the cPBBO or the Complex Order book crossing the Complex PIXL Order stop price on the same side of the market as the Complex PIXL Order, the stop price against executable PAN responses and executable Complex Orders using the allocation algorithm in sub-paragraph (E)(2)(d)(i) through (iv); or (3) in the case of a trading halt on the Exchange in the affected series, the stop price, in which case the PIXL Order will be executed solely against the Initiating Order. Any unexecuted PAN responses will be cancelled. See Rule 1080(n)(ii)(C).

As with the no minimum size requirement, the Exchange has gathered data on these three conditions to assess the effect of early PIXL Auction conclusions on the Pilot.<sup>22</sup> Between January and June 2015, 320 auctions for simple PIXL Orders terminated early because the Phlx BBO crossed the PIXL Order stop price on the same side of the market. No auctions terminated early because of halts. The number of auctions that terminated early was 1/100th of 1% of all PIXL auctions over the period. The auctions that terminated early included 1/100th of 1% of contracts traded in PIXL auctions. The share of auctions that terminated early was stable between January and June 2015.

Between January and June 2015, 76.3% of PIXL auctions for simple PIXL Orders that terminated early executed at a price that was better than the NBBO at the time the auction began. 71.9% of contracts in auctions that terminated early received price improvement. The average amount of price improvement per contract for PIXL auctions that terminated early was 4.1%.

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<sup>22</sup> The Exchange agreed to gather and submit the following data on this part of the Pilot: (1) The number of times that the PBBO crossed the PIXL Order stop price on the same side of the market as the PIXL Order and prematurely ended the PIXL Auction, and at what time the PIXL Auction ended; (2) the number of times that a trading halt prematurely ended the PIXL auction and at what time the trading halt ended the PIXL Auction; (3) of the Auctions terminated early due to the PBBO crossing the PIXL order stop price, the number that resulted in price improvement over the PIXL Order stop price, and the average amount of price improvement provided to the PIXL Order; (4) in the Auctions terminated early due to the PBBO crossing the PIXL order stop price, the percentage of contracts that received price improvement over the PIXL order stop price; (5) of the Auctions terminated early due to a trading halt, the number that resulted in price improvement over the PIXL Order stop price, and the average amount of price improvement provided to the PIXL Order; (6) in the auctions terminated early due to a trading halt, the percentage of contracts that received price improvement over the PIXL order stop price; (7) the average amount of price improvement provided to the PIXL Order when the PIXL Auction is not terminated early (i.e., runs the full one second); (8) the number of times an unrelated market or marketable limit order (against the PBBO) on the opposite side of the PIXL Order is received during the Auction Period; and (9) the price(s) at which an unrelated market or marketable limit order (against the PBBO) on the opposite side of the PIXL Order that is received during the Auction Period is executed, compared to the execution price of the PIXL Order. See PIXL Approval Order, supra note 3.

Based on the data gathered during the pilot, the Exchange does not anticipate that any of these conditions will occur with significant frequency, or will otherwise significantly affect the functioning of PIXL auctions. The Exchange also notes that over 75% of PIXL auctions for simple PIXL Orders that terminated early executed at a price that was better than the NBBO at the time the auction began, and over 70% of contracts in auctions that terminated early received price improvement. With respect to Complex PIXL Order, the Exchange similarly does not anticipate, based on the data gathered on this aspect of the Pilot for simple PIXL Orders, that either Rule 1080(n)(ii)(B)(3) or (4) will occur with significant frequency, or will otherwise significantly affect the functioning of Complex PIXL Order auctions. The Exchange therefore believes it is appropriate to approve this aspect of the Pilot on a permanent basis for both simple and Complex PIXL Orders.

#### Unrelated Market or Marketable Limit Order

Rule 1080(n)(ii)(D) provides that an unrelated market or marketable limit order (against the PBBO) on the opposite side of the market from the PIXL Order received during the Auction will not cause the Auction to end early and will execute against interest outside of the Auction. In the case of a Complex PIXL Auction, an unrelated market or marketable limit Complex Order on the opposite side of the market from the Complex PIXL Order as well as orders for the individual components of the Complex Order received during the Auction will not cause the Auction to end early and will execute against interest outside of the Auction. If contracts remain from such unrelated order at the time the Auction ends, they will be considered for participation in the order allocation process described elsewhere in the Rule. This section is operating as part of the current Pilot.

In approving this feature on a pilot basis, the Commission found that “allowing the PIXL auction to continue for the full auction period despite receipt of unrelated orders outside the Auction would allow the auction to run its full course and, in so doing, will provide a full opportunity for price improvement to the PIXL Order. Further, the unrelated order would be available to participate in the PIXL order allocation.”<sup>23</sup> The Exchange believes that this rationale continues to apply for both simplex and Complex PIXL Orders. The Exchange also does not believe that this provision has had a significant impact on either the unrelated order or the PIXL auction process, either for simple or Complex PIXL Orders. The Exchange therefore believes it is appropriate to approve this aspect of the Pilot on a permanent basis for both simple and Complex PIXL Orders.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6 of the Act,<sup>24</sup> in general and with Section 6(b)(5) of the Act,<sup>25</sup> in that it is designed 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; and is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers, or to regulate by virtue of any authority conferred by the Act matters not related to the purposes of the Act or the administration of the Exchange.

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<sup>23</sup> See PIXL Approval Order, supra note 3.

<sup>24</sup> 15 U.S.C. 78f.

<sup>25</sup> 15 U.S.C. 78f(b)(5).

The Exchange believes that the proposed rule change is also consistent with Section 6(b)(8) of the Act<sup>26</sup> in that it does not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

Specifically, the Exchange believes that PIXL, including the rules to which the Pilot applies, results in increased liquidity available at improved prices, with competitive final pricing out of the Initiating Participant's complete control. The Exchange believes that PIXL promotes and fosters competition and affords the opportunity for price improvement to more options contracts. The Exchange believes that the changes to the PIXL Auction requiring price improvement of at least one minimum price improvement increment over the NBBO for PIXL Orders, other than Complex Orders, of less than 50 option contracts where the difference in the NBBO is \$0.01 will provide further price improvement for those PIXL Orders, and thereby encourage additional submission of those orders into PIXL. The Exchange notes that statistics for the current pilot, which include, among other things, price improvement for orders of less than 50 option contracts under the current auction eligibility requirements, show relatively small amounts of price improvement for such orders. Phlx believes that the proposed requirements will therefore increase the price improvement that orders of under 50 option contracts may receive in PIXL.

The Exchange believes that approving the Pilot on a permanent basis is also consistent with the Act. With respect to the auction eligibility for Complex Orders, Phlx believes that it is appropriate to approve these requirements when applied to Complex Orders where the smallest leg is less than 50 contracts in size on a permanent basis. Phlx notes that the auction eligibility requirements for simple PIXL Orders are currently operating on a permanent basis, and that the

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<sup>26</sup> 15 U.S.C. 78f(b)(8).

same auction eligibility requirements currently apply to Complex PIXL Orders where the smallest leg is 50 contracts or greater. Phlx believes that approving this aspect of the Pilot on a permanent basis will continue to provide such Orders with the opportunity to receive price improvement. Specifically, the Exchange believes that the auction eligibility requirements, which require a Complex Order to be stopped at a net debit/credit price that improves upon the stated markets present for the individual components of the Complex Order, ensures that at least one option leg will be executed at a better price than the established bid or offer for such leg. Phlx also believes that, as with the market for simple orders, the market for complex orders, including small customer orders, both within and outside of PIXL is similarly robust.

With respect to the no minimum size requirement, the Exchange believes that the data gathered during the Pilot period indicates that there is meaningful competition in PIXL auctions for all size orders in both simple and Complex PIXL Orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that there are opportunities for significant price improvement for orders executed through PIXL, including for small customer orders. The Exchange also believes that approving this aspect of the Pilot on a permanent basis would continue to permit the entry of small simple and Complex Orders into PIXL, thereby continuing to provide such Orders with the opportunity for price improvement.

With respect to the early termination of a PIXL Auction, the Exchange believes that it is appropriate to terminate an auction any time the Reference BBO crosses the PIXL Order stop price on the same side of the market as the PIXL Order (and the related provision for a Complex Order PIXL Auction), or any time there is a trading halt on the Exchange in the affected series. Based on the data gathered during the pilot for simple PIXL Orders, the Exchange does not anticipate that any of these conditions will occur with significant frequency for either simple or

Complex PIXL Orders, or will otherwise disrupt the functioning of PIXL auctions for simple or Complex PIXL Orders. The Exchange also notes that a significant percentage of PIXL auctions for simple PIXL Orders that terminated early executed at a price that was better than the NBBO at the time the auction began, and that a significant percentage of contracts in auctions that terminated early received price improvement.

With respect to the requirement that an unrelated market or marketable limit order (against the PBBO) on the opposite side of the market from the PIXL Order received during the Auction will not cause the Auction to end early and will execute against interest outside of the Auction, and the corresponding provision for Complex Orders, the Exchange does not believe that these provisions have had a significant impact on either the unrelated order or the PIXL auction process for either simple or Complex PIXL Orders. The Exchange also believes that allowing the PIXL Auction to continue in this scenario, both for simple and Complex PIXL Orders, will allow the auction to run its full course and, in so doing, will provide a full opportunity for price improvement to the PIXL Order, in addition to affording the unrelated order the opportunity to participate in the PIXL order allocation.

**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 not necessary or appropriate in furtherance of the purposes of the Act. The proposal will apply to all Exchange members, and participation in the PIXL Auction process is completely voluntary. Based on the data collected by the Exchange during the Pilot, the Exchange believes that there is meaningful competition in PIXL auctions for all size orders, there are opportunities for significant price improvement for orders executed through PIXL, and that there is an active and liquid market functioning on the Exchange outside of PIXL. The Exchange believes that requiring increased price improvement for PIXL Orders may encourage competition by

attracting additional orders to participate in PIXL. The Exchange believes that approving the Pilot on a permanent basis for both simple and Complex PIXL Orders will not significantly impact competition, as the Exchange is proposing no other change to the Pilot beyond implementing it on a permanent basis.

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

No written comments were either solicited or received.

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

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period (i) as the Commission may designate up to 90 days of such date if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission shall: (a) by order approve or disapprove such proposed rule change, or (b) institute proceedings to determine whether the proposed rule change should be 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, as modified by Amendment No. 1, 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](mailto:rule-comments@sec.gov). Please include File Number SR-Phlx-2016-119 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-2016-119. 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; 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-Phlx-2016-119 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.<sup>27</sup>

Eduardo A. Aleman  
Assistant Secretary

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<sup>27</sup> 17 CFR 200.30-3(a)(12).

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