

ASCEND WELLNESS HOLDINGS, INC.

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON WEDNESDAY, APRIL 30, 2025

TO OUR STOCKHOLDERS:

Notice is hereby given that an annual meeting (the "Meeting") of the holders of shares of Class A common stock and Class B common stock (together, the "shares of common stock") of Ascend Wellness Holdings, Inc. (the "Company") will be held by way of a live audio webcast at https://web.lumiconnect.com/295193841, on Wednesday, April 30, 2025 at 11:00 a.m. (Eastern Time) for the following purposes:

- 1. to elect the six nominees for director to serve on the board of directors of the Company;
- 2. to ratify the appointment of WithumSmith+Brown, PC as the independent registered public accounting firm of the Company; and
- 3. to transact such other business as may properly be brought before the Meeting or any adjournment(s) or postponement(s) thereof.

The accompanying proxy statement (the "proxy statement") provides additional information relating to the matters to be dealt with at the Meeting, including detailed instructions for the Meeting, and forms a part of this Notice of Meeting.

The board of directors of the Company has fixed March 10, 2025 as the record date for the Meeting. Stockholders of record at the close of business on this date are entitled to notice of the Meeting and to vote thereat or at any adjournment or postponement thereof.

Meeting Format

The Company will be hosting an *entirely virtual* annual meeting of stockholders in 2025. Stockholders will not be able to attend the Meeting in person. We are excited to continue to provide expanded access, improved communication, and cost savings for our stockholders and the Company. We believe hosting a virtual meeting helps enable greater stockholder attendance at the annual meeting by allowing stockholders that might not otherwise be able to travel to a physical meeting to attend online and participate from any location around the world.

The Meeting will be conducted as a virtual-only meeting of stockholders by way of a live audio webcast through the Lumi/AST Virtual AGM platform (the "Virtual Platform"). If you are a registered stockholder, you can attend the Meeting online at https://web.lumiconnect.com/295193841 by clicking "I have a control number" and then entering your unique 12-digit control number located on your form of proxy and the password "ascend2025" (case sensitive). You will have the ability to submit questions during the Meeting via the Virtual Platform. Beneficial stockholders (being stockholders who hold their shares of common stock through a broker, investment dealer, bank, trust company, custodian, nominee or other intermediary) who have not duly appointed themselves as proxyholder will be able to attend as a guest and view the webcast but not be able to participate or vote at the Meeting.

If you are a registered stockholder and choose to vote at the Meeting rather than through the use of the provided form of proxy and below instructions, or should you desire to vote at the Meeting after completing and submitting the form of proxy, thereby overriding your selections contained therein, you are able to do so through the Virtual Platform by voting on the left-hand side of the screen or as otherwise directed during the Meeting, which will become available to you when the voting portion of the Meeting opens. Your results will be instantaneously tabulated and included in the final Scrutineer's Report, which will become available to the Company once the voting portion of the Meeting has closed. See "*Instructions for the Meeting*" on page 5 of the proxy statement for detailed instructions on how to vote at the Meeting.

If a stockholders receives more than one form of proxy because such holder owns shares of common stock of different classes or registered in different names or addresses, each form of proxy should be completed and returned. If you are a registered stockholder and receive these materials through your broker or through another intermediary, please complete and return the form of proxy or voting instruction form in accordance with the instructions provided to you by your broker or by the other intermediary

Notice and Access

The Company has elected to use the notice-and-access provisions under National Instrument 54-101 – *Communication with Beneficial Owners of Securities of a Reporting Issuer* (the "Notice-and-Access Provisions"). The Notice-and-Access Provisions are a set of rules developed by the Canadian Securities Administrators that reduce the volume of materials that must be physically mailed to stockholders by allowing the Company to post the proxy statement and any additional materials online. The notice you received regarding the Internet availability of our proxy materials (the "Notice") provides instructions on how to access our proxy materials and cast your vote via the Internet, by telephone, or by mail.

Stockholders will still receive the Notice and a form of proxy and may choose to receive a paper copy of (i) the proxy statement; (ii) the Company's Annual Report on Form 10-K, together with any document, or the pertinent pages of any document, incorporated therein by reference, and/or (iii) the Company's audited financial statements for the most recently completed financial year, together with the report of the auditor thereon, and any interim financial statements of the Company subsequent to the financial statements for the Company's most recently completed financial year.

The Company will not use the procedure known as "stratification" in relation to the use of Notice-and-Access Provisions. Stratification occurs when a reporting issuer using the Notice-and-Access Provisions provides a paper copy of the proxy statement to some stockholders with this notice package. In relation to the Meeting, all stockholders will receive the required documentation under the Notice-and-Access Provisions, which will not include a paper copy of the proxy statement.

Please review the proxy statement carefully and in full prior to voting, as the proxy statement has been prepared to help you make an informed decision on the matters to be acted upon. The proxy statement and other meeting materials are available on the website of the Company's transfer agent, Odyssey Trust Company at https://odysseytrust.com/client/ascend-wellness-holdings-inc/, and under the Company's profile on SEDAR+ at www.sedarplus.ca and on the SEC's website at www.sec.gov. Any stockholder who wishes to receive a paper copy of the proxy statement should contact Odyssey Trust Company (Canada) at (888) 290-1175 (within North America) or (587) 885-0960 (outside of North America) or shareholders@odysseytrust.com. Any requests for material received before the meeting date should be fulfilled within five business days. Stockholders may also use the toll-free number noted above to obtain additional information about the Notice-and-Access Provisions.

Stockholders who cannot attend the Meeting may vote by proxy. Instructions on how to complete and return the proxy are provided with the form of proxy and are described in the proxy statement. To be valid, proxies must be received by Odyssey Trust Company by mail at 702 - 67 Yonge Street, Toronto, ON M5E 1J8, by fax to (800) 517-4553 (toll-free), by email to shareholders@odysseytrust.com, or by internet voting through https://login.odysseytrust.com/pxlogin, no later than 11:00 a.m. (Eastern Time) on April 28, 2025, or if the Meeting is adjourned, no later than 11:00 a.m. on the second business day preceding the day to which the Meeting is adjourned.

We encourage you to log into the Meeting at least 15 minutes prior to the commencement of the Meeting. You may begin to log into the Virtual Platform beginning at 10:00 a.m. (Eastern Time) on April 30, 2025. The Meeting will begin promptly at 11:00 a.m. (Eastern Time) on April 30, 2025. If you encounter any difficulties with the Virtual Platform on the day of the Meeting, please go to https://www.lumiglobal.com/faq for frequently asked questions and click on the support button for assistance or please call Odyssey at (888) 290-1175 (within North America) or (587) 885-0960 (outside of North America). Support will be available starting at 7:00 a.m. (Eastern Time) on April 30, 2025 and will remain available until the Meeting has finished.

The proxy statement provides additional detailed information relating to the matters to be dealt with at the Meeting and is supplemental to, and expressly made a part of, this Notice of Meeting. Additional information about the Company and its financial statements are also available under the Company's profile on SEDAR+ at www.sedarplus.ca and on the SEC's website at www.sec.gov.

Dated at New York, NY this 21st day of March, 2025.

BY ORDER OF THE BOARD OF DIRECTORS

Abner Kurtin Executive Chairman

YOUR VOTE IS VERY IMPORTANT. PLEASE CAREFULLY READ THE ATTACHED PROXY STATEMENT. WHETHER OR NOT YOU PLAN TO ATTEND THE MEETING, WE URGE YOU TO VOTE AND SUBMIT YOUR PROXY OVER THE INTERNET, BY TELEPHONE, OR MAIL.

PROXY STATEMENT OF ASCEND WELLNESS HOLDINGS, INC.

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PROXY STATEMENT

The information contained in this proxy statement ("proxy statement") is furnished in connection with the solicitation of proxies to be used at the annual meeting of holders ("stockholders") of Class A common stock and Class B common stock (together, "shares of common stock") of Ascend Wellness Holdings, Inc. (the "Company") to be held by way of a live audio webcast through the Lumi/Odyssey Virtual AGM platform (the "Virtual Platform") at https://web.lumiconnect.com/295193841, password "ascend2025" (case-sensitive), on Wednesday, April 30, 2025 at 11:00 a.m. (Eastern Time) (the "Meeting"), and at all adjournments thereof, for the purposes set forth in the accompanying Notice of Meeting.

The Company will be hosting an entirely virtual annual meeting of stockholders in 2025. We are excited to continue to provide expanded access, improved communication, and cost savings for our stockholders and the Company. We believe hosting a virtual meeting helps enable greater stockholder attendance at the annual meeting by allowing stockholders that might not otherwise be able to travel to a physical meeting to attend online and participate from any location around the world.

The Meeting will be conducted solely as a virtual-only meeting of stockholders via a live audio webcast through the Virtual Platform. Registered stockholders or duly appointed proxyholders can attend the Meeting online at https://web.lumiconnect.com/295193841 by clicking "I have a control number" and entering your unique 12-digit control number located on your form of proxy, followed by the password "ascend2025" (case-sensitive). You will have the ability to submit questions during the Meeting via the Virtual Platform. See "Instructions for the Meeting," below. It is expected that the solicitation will be made primarily by mail on or about March 21, 2025, but proxies may also be solicited personally by directors, officers or regular employees of the Company. The solicitation of proxies by this proxy statement is being made by or on behalf of management of the Company. The total cost of the solicitation will be borne by the Company.

Except as otherwise indicated, information in this proxy statement is given as of March 19, 2025.

NOTICE-AND-ACCESS

The Company has elected to use the notice-and-access provisions under National Instrument 54-101 – *Communication with Beneficial Owners of Securities of a Reporting Issuer* (the "Notice-and-Access Provisions"). The Notice-and-Access Provisions are a set of rules developed by the Canadian Securities Administrators that reduce the volume of materials that must be physically mailed to stockholders by allowing the Company to post the proxy statement and any additional materials online. The notice you received regarding the Internet availability of our proxy materials (the "Notice") provides instructions on how to access our proxy materials and cast your vote via the Internet, by telephone or by mail.

Stockholders' access to our proxy materials via the Internet is more environmentally friendly as it will help reduce paper use and will also reduce the cost of printing and mailing the proxy materials to stockholders. Stockholders will still receive the Notice and a form of proxy and may choose to receive a paper copy of (i) the proxy statement; (ii) the Company's Annual Report on Form 10-K, together with any document, or the pertinent pages of any document, incorporated therein by reference, and/or (iii) the Company's audited financial statements for the most recently completed financial year, together with the report of the auditor thereon, and any interim financial statements of the Company subsequent to the financial statements for the Company's most recently completed financial year.

Please review the proxy statement carefully and in full prior to voting, as the proxy statement has been prepared to help you make an informed decision on the matters to be acted upon. The proxy statement and other meeting materials are available on the website of the Company's transfer agent, Odyssey Trust Company at https://odysseytrust.com/client/ascend-wellness-holdings-inc/, and under the Company's profile on SEDAR+ at www.sedarplus.ca and on the SEC's website at www.sec.gov. Any stockholder who wishes to receive a paper copy of the proxy statement should contact Odyssey Trust Company (Canada) at (888) 290-1175 (within North America) or (587) 885-0960 (outside of North America) or shareholders@odysseytrust.com. Any requests for material

received before the meeting date should be fulfilled within three business days. Stockholders may also use the toll-free number noted above to obtain additional information about the Notice-and-Access Provisions.

The Company will not use the procedure known as "stratification" in relation to the use of Notice-and-Access Provisions. Stratification occurs when a reporting issuer using the Notice-and-Access Provisions provides a paper copy of the proxy statement to some stockholders with this notice package. In relation to the Meeting, all stockholders will receive the required documentation under the Notice-and-Access Provisions, which will not include a paper copy of the proxy statement.

The holders of a majority of the voting power of the stock issued and outstanding shall constitute a quorum for the transaction of business at all meetings of stockholders. In the event that a quorum is not present at the time fixed for holding the Meeting, the Meeting shall stand adjourned to such date and to the same day in the next week at the same time and place.

Registered stockholders and beneficial stockholders who have previously provided standing instructions to receive a physical copies of the proxy materials will receive by mail the Notice and Access Package, the proxy statement and the Notice of Meeting.

APPOINTMENT AND REVOCATION OF PROXIES

The persons named in the form of proxy accompanying this proxy statement are officers and/or directors of the Company (the "Nominees"). A stockholder of the Company has the right to appoint a person other than the persons specified in such form of proxy and who need not be a stockholder of the Company to attend and act for the stockholder and on the stockholder's behalf at the Meeting. Such right may be exercised by striking out the names of the persons specified in the proxy, inserting the name of the person to be appointed in the blank space provided in the proxy, signing the proxy and returning it in the reply envelope by mail, or submitting it through the Internet, in the manner set forth in the accompanying Notice of Meeting.

Stockholders who wish to appoint a person other than the Nominees identified in the form of proxy or voting instruction form (including a non-registered stockholder who wishes to appoint themselves to attend the Meeting) must carefully follow the instructions in the attached proxy statement and on their form of proxy or voting instruction form. These instructions include the additional step of registering such proxyholder with our transfer agent, Odyssey Trust Company ("Odyssey"), after submitting the form of proxy or voting instruction form. Failure to register the proxyholder with Odyssey will result in the proxyholder not receiving a control number to participate in the Meeting and only being able to attend as a guest. Guests will be able to listen to the Meeting but will not be able to vote.

You must complete the additional step of registering the proxyholder by emailing Odyssey at shareholders@odysseytrust.com by no later than 11:00 a.m. (Eastern Time) on April 28, 2025.

A stockholder of the Company who has given a proxy may revoke it by an instrument in writing, including another completed form of proxy, executed by the stockholder or the stockholder's attorney authorized in writing, deposited at the registered office of the Company, or at the offices of Odyssey by mail to 702 - 67 Yonge Street, Toronto, ON M5E 1J8, by email to shareholders@odysseytrust.com, by fax to (800) 517-4553, or by internet voting through https://login.odysseytrust.com/pxlogin, up to 12:00 p.m. (Eastern Time) on the third business day preceding the date of the Meeting, or any adjournment thereof.

VOTING OF SHARES REPRESENTED BY MANAGEMENT PROXIES

The Nominees named in the enclosed form of proxy will vote the shares of common stock in respect of which they are appointed by proxy on any ballot that may be called for in accordance with the instructions thereon. If a stockholder of the Company specifies a choice with respect to any matter to be acted upon, the shares will be voted accordingly. In the absence of such instructions, such shares will be voted in favor of each of the matters referred to herein.

The enclosed form of proxy confers discretionary authority upon the Nominees named therein with respect to amendments to or variations of matters identified in the Notice of Meeting and with respect to other matters, if any, which may properly come before the Meeting. At the date of this proxy statement, the management of the Company knows of no such amendments, variations, or other matters to come before the Meeting. However, if any other matters which are not now known to management should properly come before the Meeting, the proxy will be voted on such matters in accordance with the best judgement of the named proxy holder.

VOTING BY NON-REGISTERED STOCKHOLDERS

Only registered stockholders or the persons they appoint as their proxies are permitted to vote at the Meeting. However, in many cases, the shares of common stock owned by a person (a "non-registered owner") are registered either (a) in the name of an intermediary (an "Intermediary") that the non-registered owner deals with in respect of the common stock (Intermediaries include, among others, banks, trust companies, securities dealers or brokers and trustees or administrators of self-administered registered savings plans, registered retirement income funds, registered education savings plans and similar plans); or (b) in the name of a clearing agency (such as The Canadian Depository for Securities Limited in Canada ("CDS") or The Depository Trust Company in the United States) of which the Intermediary is a participant.

In accordance with applicable laws, non-registered owners who have advised their Intermediary that they do not object to the Intermediary providing their ownership information to issuers whose securities they beneficially own ("Non-Objecting Beneficial Owners" or "NOBOs") will receive by mail: (i) a voting information form which is not signed by the Intermediary and which, when properly completed and signed by the non-registered holder and returned to the Intermediary or its service company, will constitute voting instructions (a "Voting Instruction Form"); (ii) a letter from the Company with respect to the notice and access procedure; and (iii) the request for financial statements form (collectively, the "Notice and Access Package"). The proxy statement and the Notice of Meeting may be found at and downloaded from https://odysseytrust.com/client/ascend-wellness-holdings-inc/.

NOBOs who have standing instructions with the Intermediary for physical copies of the proxy statement will receive by mail the Notice and Access Package, the proxy statement and the Notice of Meeting.

Intermediaries are required to forward the Notice and Access Package to non-registered owners who have advised their Intermediary that they object to the Intermediary providing their ownership information ("Objecting Beneficial Owners," or "OBOs") unless an OBO has waived the right to receive them. Often, Intermediaries will use service companies to forward proxy-related materials to OBOs. Management of the Company intends to pay for Intermediaries to forward the Notice and Access Package to OBOs. Generally, OBOs who have not waived the right to receive proxy-related materials will either:

- (i) be given a form of proxy which has already been signed by the Intermediary (typically by a facsimile stamped signature), which is restricted as to the number and class of securities beneficially owned by the OBO but which is not otherwise completed. Because the Intermediary has already signed the form of proxy, this form of proxy is not required to be signed by the non-registered owner when submitting the proxy. In this case, the OBO who wishes to vote by proxy should otherwise properly complete the form of proxy and deliver it as specified; or
- (ii) be given a Voting Instruction Form which the Intermediary must follow. The OBO should properly complete and sign the Voting Instruction Form and submit it to the Intermediary or its service company in accordance with the instructions of the Intermediary or its service company.

In either case, the purpose of this procedure is to permit non-registered owners to direct the voting of the common stock they beneficially own. Should a non-registered owner who receives either form of proxy wish to vote at the Meeting if a ballot is called, the non-registered owner should strike out the persons named in the form of proxy and insert the non-registered owner's name in the blank space provided. Non-registered owners should carefully follow the instructions of their Intermediary including those regarding when and where the form of proxy or Voting Instruction Form is to be delivered.

BROKER NON-VOTES AND ABSTENTIONS

In the United States, brokers and other intermediaries holding shares in street name for their customers are generally required to vote the shares in the manner directed by their customers. If their customers do not give any direction, brokers may vote the securities at their discretion on routine matters, but not on non-routine matters. Other than the proposal for the ratification of the appointment of WithumSmith+Brown, PC ("Withum") as our auditors for the fiscal year ended December 31, 2025, all of the other matters to be voted on at the Meeting are non-routine matters and brokers may not vote the securities held in street name for their customers in relation to these items of business without direction from their customers.

The absence of a vote on a non-routine matter is referred to as a broker non-vote. Any broker non-votes will have no impact in the election of directors or any other matter to be voted on at the Meeting. For purposes of the Company's majority voting requirements set forth in its bylaws which apply to all matters to be voted on at the Meeting, except for the vote of directors, a broker non-vote is not considered to be a vote withheld.

An "ABSTAIN" vote, which is available for Proposal 2, will have the effect of a vote "AGAINST" that proposal.

The holders of a majority of the voting power of the stock issued and outstanding shall constitute a quorum for the transaction of business at all meetings of stockholders. Abstentions and broker non-votes are counted for purposes of determining the presence of a quorum.

VOTE REQUIRED

On Proposal 1, the election of directors, stockholders may vote "FOR" one or more of the nominees or "WITHHOLD" their vote for one or more nominees. Director candidates must be approved by a plurality of the shares present in person or by proxy at the Meeting and entitled to vote on the election of directors. A plurality means that if stockholders are electing six directors, the six director nominees receiving the highest number of votes will be elected. Stockholders do not have the right to cumulate their vote for directors.

On Proposal 2, stockholders may vote "FOR" or "AGAINST" such proposal or "ABSTAIN" from voting on such proposal. An "ABSTAIN" vote, which is available for Proposal 2, will have the effect of a vote "AGAINST" that proposal.

Except in respect of matters relating to the election of directors, or as otherwise provided in our certificate of incorporation or required by law, all matters to be voted on by our stockholders must be approved by a majority of the shares present in person or by proxy at the Meeting and entitled to vote on the subject matter.