

Lightbridge Corporation Up to \$12,595,000 Common Stock

This prospectus supplement amends and supplements the information in our prospectus dated April 19, 2024 (the "Base Prospectus"), as supplemented by our prospectus supplements dated May 10, 2024 and July 19, 2024 (the "Prospectus Supplements" and together with the Base Prospectus, the "Prospectus"), filed pursuant to our registration statement on Form S-3 (File No. 333-278388) (the "Registration Statement"), covering the offering, issuance and sale by us of our common stock that may be issued and sold under the At-the-Market Equity Offering Sales Agreement, or the sales agreement, with Stifel, Nicolaus & Company, Incorporated (the "Agent"), dated May 28, 2019, and as amended on April 9, 2021 and May 8, 2024. This prospectus supplement should be read in conjunction with the Prospectus, and is qualified by reference thereto, except to the extent that the information herein amends or supersedes the information contained in the Prospectus. This prospectus supplement is not complete without, and may only be delivered or utilized in connection with, the Prospectus, and any future amendments or supplements thereto.

In accordance with the terms of the sales agreement, under this prospectus supplement and accompanying Prospectus we may offer and sell shares of our common stock, \$0.001 par value per share, from time to time through the Agent, acting as agent.

We are filing this prospectus supplement to amend the Prospectus to update the amount of shares we are eligible to sell under our Registration Statement pursuant to General Instruction I.B.6 of Form S-3. Pursuant to General Instruction I.B.6, and in accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$12,595,000 from time to time through the Agent. In the event that we may sell additional amounts under the sales agreement in accordance with General Instruction I.B.6, we will file another prospectus supplement prior to making such additional sales.

Our common stock is listed on the Nasdaq Capital Market under the symbol "LTBR". As of August 1, 2024, the aggregate market value of our common stock held by non-affiliates, or the public float, pursuant to General Instruction I.B.6 of Form S-3 was \$56,852,461, which was calculated based on 13,866,454 shares of our common stock outstanding held by non-affiliates as of July 16, 2024 and at a price of \$4.10 per share, the last reported sale price for our common stock on August 1, 2024. We have sold \$6,355,408 of securities as calculated pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on and includes the date of this prospectus supplement. Pursuant to General Instruction I.B.6 of Form S-3, in no event may we offer securities pursuant to this prospectus supplement with an aggregate offering price of more than one-third of our public float in any twelve-month period for as long as our public float remains below \$75 million.

Investing in our common stock involves risks. See the risks described under "Risk Factors" in the Base Prospectus and the Prospectus Supplements, as well as the risks and uncertainties described in the documents we file with the Securities and Exchange Commission that are incorporated in this prospectus supplement and the Prospectus by reference for certain risks and uncertainties relating to an investment in our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement and the Prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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The date of this prospectus supplement is August 9, 2024.