

20 East Bayard Street Seneca Falls, New York 13148 (315) 568-5855

May 23, 2025

Dear Stockholder:

Enclosed you will find the proxy materials for the 2025 Annual Meeting of Stockholders of Generations Bancorp NY, Inc. scheduled to be held at our Corporate Headquarters located at 20 East Bayard Street, Seneca Falls, New York at 1:00 p.m., Eastern time, on Thursday, June 26, 2025.

The Annual Meeting is being held for the purpose of (1) electing three Directors and (2) ratifying the appointment of Bonadio & Co., LLP ("Bonadio") as our independent registered public accounting firm for the year ending December 31, 2025.

Our Board of Directors has determined that the election of the nominees for Director and the ratification of Bonadio as our independent registered public accounting firm for the year ending December 31, 2025 are in the best interests of the Company and our stockholders. For the reasons set forth in the Proxy Statement, the Board of Directors unanimously recommends a vote "FOR" the election of each of the nominees for Director and "FOR" the ratification of Bonadio as our independent registered public accounting firm for the year ending December 31, 2025.

On behalf of the Board of Directors, we are asking that you complete the enclosed proxy card and mail it back to us in the envelope provided. Your vote is important, regardless of the number of shares owned. Our Proxy Statement and the 2024 Annual Report are available at: www.generationsbancorpny.com/annual-meeting.

Sincerely,

Angela M. Krezmer

President and Chief Executive Officer

GENERATIONS BANCORP NY, INC. 20 East Bayard Street Seneca Falls, New York 13148 (315) 568-5855

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS To Be Held on June 26, 2025

Notice is hereby given that the 2025 Annual Meeting of Stockholders of Generations Bancorp NY, Inc. ("Generations Bancorp") will be held at our Corporate Headquarters located at 20 East Bayard Street, Seneca Falls, New York at 1:00 p.m., Eastern time, on Thursday, June 26, 2025.

A Proxy Card and Proxy Statement for the annual meeting are enclosed. The annual meeting is for the purpose of considering and acting upon:

- 1. the election of three Directors;
- 2. the ratification of the appointment of Bonadio & Co., LLP as independent registered public accounting firm for the year ending December 31, 2025; and

such other matters as may *properly* come before the annual meeting, or any adjournments thereof. The Board of Directors is not aware of any other business to come before the annual meeting.

Any action may be taken on the foregoing proposals at the annual meeting on the date specified above, or on the date or dates to which the annual meeting may be adjourned. Stockholders of record at the close of business on April 30, 2025 are the stockholders entitled to vote at the annual meeting, and any adjournments thereof.

EACH STOCKHOLDER, WHETHER HE OR SHE PLANS TO ATTEND THE ANNUAL MEETING, IS REQUESTED TO SIGN, DATE AND RETURN THE ENCLOSED PROXY CARD WITHOUT DELAY IN THE ENCLOSED POSTAGE-PAID ENVELOPE. ANY PROXY GIVEN BY THE STOCKHOLDER MAY BE REVOKED AT ANY TIME BEFORE IT IS VOTED. A PROXY MAY BE REVOKED BY FILING WITH THE CORPORATE SECRETARY OF GENERATIONS BANCORP A WRITTEN REVOCATION OR A DULY EXECUTED PROXY CARD BEARING A LATER DATE. ANY STOCKHOLDER PRESENT AT THE ANNUAL MEETING MAY REVOKE HIS OR HER PROXY AND VOTE PERSONALLY ON EACH MATTER BROUGHT BEFORE THE ANNUAL MEETING. HOWEVER, IF YOU ARE A STOCKHOLDER WHOSE SHARES ARE NOT REGISTERED IN YOUR OWN NAME, YOU WILL NEED ADDITIONAL DOCUMENTATION FROM YOUR RECORD HOLDER IN ORDER TO VOTE IN PERSON AT THE ANNUAL MEETING. ATTENDANCE AT THE ANNUAL MEETING WILL NOT IN ITSELF CONSTITUTE REVOCATION OF YOUR PROXY.

By Order of the Board of Directors.

Lori M. Parish Corporate Secretary

Seneca Falls, New York May 23, 2025 IMPORTANT: THE PROMPT RETURN OF PROXIES WILL SAVE THE EXPENSE OF FURTHER REQUESTS FOR PROXIES. A SELF-ADDRESSED ENVELOPE IS ENCLOSED FOR YOUR CONVENIENCE. NO POSTAGE IS REQUIRED IF MAILED WITHIN THE UNITED STATES.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS: THE PROXY STATEMENT, INCLUDING THE NOTICE OF THE ANNUAL MEETING OF STOCKHOLDERS, ARE EACH AVAILABLE ON THE INTERNET AT WWW.GENERATIONSBANCORPNY.COM/ANNUAL-MEETING.

PROXY STATEMENT Generations Bancorp NY, Inc. 20 East Bayard Street Seneca Falls, New York 13148 (315) 568-5855

ANNUAL MEETING OF STOCKHOLDERS

To Be Held on Thursday, June 26, 2025

This Proxy Statement is furnished in connection with the solicitation of proxies on behalf of the Board of Directors of Generations Bancorp NY, Inc. ("Generations Bancorp") to be used at the Annual Meeting of Stockholders, which will be held at our Corporate Headquarters located at 20 East Bayard Street, Seneca Falls, New York on Thursday, June 26, 2025 at 1:00 p.m., Eastern time, and all adjournments of the annual meeting. The accompanying Notice of Annual Meeting of Stockholders and this Proxy Statement are first being mailed to stockholders on or about May 23, 2025.

REVOCATION OF PROXIES

Stockholders who execute proxies in the form solicited hereby retain the right to revoke them in the manner described below. Unless so revoked, the shares represented by such proxies will be voted at the annual meeting and all adjournments thereof. Proxies solicited on behalf of the Board of Directors of Generations Bancorp will be voted in accordance with the directions given thereon. Please sign and return your proxy card in the postage paid envelope provided. Where no instructions are indicated on the proxy card, signed proxies will be voted "FOR" the election of the nominees for Directors named herein, and "FOR" the ratification of the appointment of Bonadio as our independent registered public accounting firm for the year ending December 31, 2025.

Proxies may be revoked by sending written notice of revocation to the Corporate Secretary of Generations Bancorp at the address shown above, by filing a duly executed proxy bearing a later date on the enclosed proxy card or by voting in person at the annual meeting. The presence at the annual meeting of any stockholder who had given a proxy shall not revoke such proxy unless the stockholder delivers his or her ballot in person at the annual meeting or delivers a written revocation to our Corporate Secretary prior to the voting of such proxy.

If you are a stockholder whose shares are not registered in your name, you will need appropriate documentation from your record holder to vote in person at the annual meeting.

VOTING SECURITIES AND PRINCIPAL HOLDERS

Except as otherwise noted below, holders of record of the Company's shares of common stock, par value \$0.01 per share, as of the close of business on April 30, 2025 are entitled to one vote for each share then held. As of April 30, 2025, there were 2,278,740 shares of common stock issued and outstanding.

In accordance with the provisions of the Company's Articles of Incorporation, record holders of common stock who beneficially own in excess of 10% of the outstanding shares of common stock (the "Limit") are not entitled to any vote with respect to the shares held in excess of the Limit. The Company's Articles of Incorporation authorize the Board of Directors (i) to make all determinations necessary to implement and apply the Limit, including determining whether persons or entities are acting in concert, and (ii) to demand that any person who is reasonably believed to beneficially own stock in excess of the Limit supply information to the Company to enable the Board of Directors to implement and apply the Limit.

Quorum

The presence in person or by proxy of holders of a majority of the total number of outstanding shares of common stock entitled to vote is necessary to constitute a quorum at the annual meeting. Abstentions and broker non-votes will be counted for purposes of determining that a quorum is present. In the event there are not sufficient votes for a quorum, or to approve or ratify any matter being presented at the time of the annual meeting, the annual meeting may be adjourned in order to permit the further solicitation of proxies.

As to the election of Directors, the proxy card being provided by the Board of Directors enables a stockholder: (i) to vote FOR ALL nominees; (ii) to WITHHOLD for ALL nominees; or (iii) to vote FOR ALL EXCEPT one or more of the nominees. Directors are elected by a plurality of votes cast, without regard to either broker non-votes or proxies as to which the authority to vote for the nominees being proposed is withheld. Plurality means that individuals who receive the highest number of votes cast are elected, up to the maximum number of Directors to be elected at the annual meeting.

As to the ratification of the appointment of Bonadio as our independent registered public accounting firm for the year ending December 31, 2025, by checking the appropriate box, a stockholder may: (i) vote FOR the ratification; (ii) vote AGAINST the ratification; or (iii) ABSTAIN from voting on such ratification. The ratification of this matter shall be determined by a majority of the votes represented at the annual meeting and entitled to vote on the matter. Broker nonvotes will not affect the outcome of the vote, and abstentions will have the same effect as votes against.

Participants in the Generations Bank Employee Stock Ownership Plan and 401(k) Plan

If you are a participant in the Generations Bank Employee Stock Ownership Plan (the "ESOP") or a participant in the Generations Bank 401(k) Plan (the "401(k) Plan") that holds shares of common stock in the 401(k) Plan, you will receive a vote authorization form that reflects all shares you may direct the trustee to vote on your behalf under the ESOP and/or 401(k) Plan. Under the terms of the ESOP and the 401(k) Plan, the ESOP trustee and the 401(k) Plan trustee votes all shares held by the ESOP and the 401(k) Plan, but each ESOP and 401(k) Plan participant may direct the trustee how to vote the shares of common stock allocated to his or her account. The ESOP trustee will vote all unallocated shares of Generations Bancorp common stock held by the ESOP and all allocated shares for which no voting instructions are received in the same proportion as shares for which it has received timely voting instructions and the 401(k) Plan trustee will vote all shares for which no voting instructions are received in the same proportion as shares for which it has received timely voting instructions. The deadline for returning your voting instruction cards for the ESOP and the 401(k) Plan is June 17, 2025.

PROPOSAL I—ELECTION OF DIRECTORS

Our Board of Directors is comprised of nine members. Our bylaws provide that Directors are divided into three classes as nearly equal in number as possible, with one class of Directors elected annually. Three Directors have been nominated for election at the annual meeting. The Board of Directors has nominated Dr. Jose A. Acevedo, Cynthia S. Aikman and Angela M. Krezmer, each to serve as a Director for a three-year term ending in 2028 and in each case until their respective successors shall have been elected and qualified. All nominees have agreed to serve as a Director if elected.

The Board of Directors recommends a vote "FOR" each of the nominees listed in this Proxy Statement.

The table below sets forth certain information regarding the nominees, the other continuing members of our Board of Directors, and our executive officers who are not Directors, including the terms of office of board members. It is intended that the proxies solicited on behalf of the Board of Directors (other than proxies in which the vote is withheld as to any nominee) will be voted at the annual meeting for the election of the proposed nominees. If a nominee is unable to serve, the shares represented by all such proxies will be voted for the election of such substitute as the Board of Directors may determine. At this time, the Board of Directors knows of no reason why any of the nominees might be unable to serve, if elected. Each of the nominees is a current Board member. There are no arrangements or understandings between any nominee or continuing Directors and any other person pursuant to which such nominee or continuing Directors was selected. Age information is as of April 30, 2025, and an individual's service as a Director includes service with Generations Bank.

Name	Positions(s) Held With Generations Bancorp	Age ⁽¹⁾	Director Since ⁽²⁾	Term To Expire In	Shares Beneficially Owned ⁽³⁾	Percent of Class
	NOM	INEES				
Dr. Jose A. Acevedo	Vice Chairman of the Board	61	2017	2025 (4)	4,870	*
Cynthia S. Aikman	Director President, Chief Executive Officer, Chief Financial	62	2018	2025 (5)	7,928	**
Angela M. Krezmer	Officer, and Director	39	2023	2025 (6)	36,852	1.6 %
	CONTINUING B	OARD I	MEMBERS			
Dr. Frank J. Nicchi	Director	73	2006	2026 (7)	11,396	*
Alicia H. Pender	Director	67	2023	2026	1,000	*
Vincent P. Sinicropi	Director	70	1999	2026 (8)	12,750	*
James E. Gardner	Director	60	2018	2027 (9)	5,768	*
Bradford M. Jones	Chairman of the Board	74	1996	2027 (10)	35,048	1.5 %
Gerald Macaluso	Director	73	2004	2027 (11)	3,768	*
	EXECUTIVE OFFICERS W	HO AR	RE NOT DIRECT	ORS		
Anthony G. Cutrona	EVP, Chief Banking Officer	63	N/A	N/A (12)	39,012	1.7 %
Derek M. Dyson	SVP, Chief Information Officer	35	N/A	N/A (13)	22,204	1.0 %
All Directors and executiv	e officers as a group (11 persons)					7.9 %

^{*} Less than 1%.

⁽¹⁾ As of April 30, 2025.

⁽²⁾ Includes service with Generations Bank and Generations Bancorp.

⁽³⁾ In accordance with Rule 13d-3 under the Securities Exchange Act of 1934, as amended, a person is deemed to be the beneficial owner, for purposes of this table, of any shares of Generations Bancorp common stock if he or she has or shares voting or investment power with respect to such common stock or has a right to acquire beneficial ownership at any time within 60 days from April 30, 2025. As used herein, "voting power" is the power to vote or direct the voting of shares and "investment power" is the power to dispose or direct the disposition of shares. Except as otherwise

- noted, ownership is direct and the named individuals and group exercise sole voting and investment power over the shares of Generations Bancorp common stock.
- (4) Includes 665 shares of unvested restricted stock and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- Includes 2,658 shares held in the Directors Retirement Plan, 665 shares of unvested restricted stock, and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- ⁽⁶⁾ Includes 7,093 shares of unvested restricted stock, 2,630 shares in Ms. Krezmer's 401(k) account, 1,014 shares in Ms. Krezmer's employee stock ownership plan account, and 20,687 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- (7) Includes 6,630 shares held in the Directors Retirement Plan, 665 shares of unvested restricted stock, and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- ⁽⁸⁾ Includes 9,980 shares held in Mr. Sinicropi's individual retirement account, 665 shares of unvested restricted stock, and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- (9) Includes 665 shares of unvested restricted stock and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- (10) Includes 24,515 shares held in the Directors Retirement Plan, 665 shares of unvested restricted stock, and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- (11) Includes 665 shares of unvested restricted stock and 1,662 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- Includes 7,093 shares of unvested restricted stock, 7,721 shares in Mr. Cutrona's 401(k) account, 1,739 shares in Mr. Cutrona's employee stock ownership plan account, and 17,731 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.
- (13) Includes 3,546 shares of unvested restricted stock, 1,878 shares held in Mr. Dyson's supplemental executive retirement plan, 4,084 shares in Mr. Dyson's 401(k) account, 1,465 shares in Mr. Dyson's employee stock ownership plan account, and 8,866 shares that can be acquired pursuant to stock options within 60 days of April 30, 2025.

The business experience for the past five years of each of our Directors, nominees, and executive officers is set forth below. With respect to Directors and nominees, the biographies contain information regarding the person's business experience and the experiences, qualifications, attributes or skills that caused the Board of Directors to determine that the person should serve as a Director.

Nominees

Dr. Jose A. Acevedo is the President and Chief Executive Officer of Finger Lakes Health in Geneva and Finger Lakes Health College of Nursing & Health Sciences, positions he has held since 2010. Dr. Acevedo joined Finger Lakes Health in 2004 as VP of Medical Affairs and Chief Medical Officer. Dr. Acevedo is active in civic and community affairs through his participation in Geneva 2020 and is the immediate past Chair for the New York State Healthcare Association. Additionally, past service includes the Independent Judicial Election Qualification Commission, Boys & Girls Club of Geneva Community Center Advisory Council and the Salvation Army Advisory Board, as well as service on the board of Keuka College in Keuka Park, New York.

Cynthia S. Aikman, MPA is self-employed as a Consulting Business Development Specialist. She has served as a Legislator for Cayuga County, New York from 2009 to 2013, an instructor at Onondaga Community College, and currently serves as the Vice Chair of the Cayuga Economic Development Agency. Ms. Aikman is also the Founder and Trustee of the Cayuga Women's Business Trust Fund.

Angela M. Krezmer is our President, Chief Executive Officer, and Chief Financial Officer. She was appointed President and Chief Executive Officer in November 2023 and has served as Chief Financial Officer since June 2021. Prior to this appointment, from June 2020 until June 2021, Ms. Krezmer served as Chief Financial Officer of Prosper Bank, Coatesville, Pennsylvania. Prior to that role, Ms. Krezmer served for more than a decade at Fairport Savings Bank, Fairport, New York where she held various positions including Chief Financial Officer. Ms. Krezmer holds a Bachelor of Science in Accounting from Rochester Institute of Technology and is a graduate of the American Bankers Association Stonier Graduate School of Banking program. Ms. Krezmer currently serves as Treasurer for Habitat for Humanity of Seneca County.

Continuing Directors

Dr. Frank J. Nicchi is retired. Prior to his retirement in August 2017, Dr. Nicchi was President of the former New York Chiropractic College (now Northeast College of Health Sciences) in Seneca Falls, New York, a position he held from 2000 until his retirement. Dr. Nicchi also served on the Board of the Association of Chiropractic Colleges ("ACC"), a consortium of 19 chiropractic colleges located in the United States, Canada, and New Zealand during his term as president of the College.

Alicia H. Pender is the Director of Finance at Sisters of St. Joseph of Rochester, a position she has held since 1991. Ms. Pender has over 40 years of experience in accounting and finance. Prior to her position at Sisters of St. Joseph she served as a Senior Manager at KPMG as well as a Controller of a Mortgage Banking company. Additionally, she has served on another publicly traded bank Board as the chair of the Audit Committee. She is an inactive certified public accountant.

Vincent P. Sinicropi is retired. Prior to his retirement in 2023, Mr. Sinicropi operated his own CPA practice in Seneca Falls, New York. He is a former partner in the CPA firm of EFP Rotenberg LLP, based in Rochester, New York. Prior to that he was a partner in the CPA firm of Sinicropi & Healy, LLP and its predecessors for over 20 years before the merger of the firm with EFP Rotenberg LLP in 2011. He is a member of the AICPA and the New York State Society of CPAs. Throughout his career, Mr. Sinicropi served on the boards and committees of various not-for-profit organizations.

James E. Gardner is the Vice President/Commercial Operations for The Barden & Robeson Corporation in Middleport, New York, where he has been employed since 1992. Mr. Gardner was appointed to the board in 2018 in connection with our merger with Medina Savings and Loan Association. He currently serves as a board member for the Medina Knights of Columbus and is a member of the Medina Lion's Club. He frequently represents Barden Building Systems at Buffalo Niagara Builders Association and Structural Building Components Association events.

Bradford M. Jones is retired. He has served as Chairman of the Board of Directors since 2018. Prior to his retirement in 2012, from 2008 until 2012, Mr. Jones was General Manager of Thruway Fasteners, Liverpool, New York, and from 1975 until 2007 served in positions of increasing importance at ITT - Goulds Pumps, Auburn Operations (New York). Mr. Jones also served as Mayor for the Village of Seneca Falls, New York from 1996 to 2000. Mr. Jones' past Board affiliations include Seneca County United Way, Seneca County IDA (Chairman), Finger Lakes Health, Seneca Falls Country Club, and St. Patrick's Parish Finance Committee.

Gerald Macaluso is retired. Prior to his retirement in 2012, Mr. Macaluso was Principal at DeSales High School in Geneva, New York and, from 1998 until 2008, was Superintendent for Seneca Falls Central School District, New York. Mr. Macaluso is active in civic and cultural matters in the community. He serves as treasurer for the Seneca Falls Education Foundation, is a member of the Seneca Falls Rotary Club, serves as an Ombudsman for LifeSpan/Rochester and is a driver for Meals on Wheels/Seneca County. Additionally, Mr. Macaluso volunteers on the Finance Committee for St. Francis/St. Clare Catholic Parish and is Vice President and serves on the Board of Directors for Catholic Charities of the Finger Lakes.

Executive Officers Who are Not Directors

Anthony G. Cutrona is our Chief Banking Officer, a position he has held since December 2016. Prior to this appointment he served as a Retail Sales Executive with Five Star Bank beginning in April 2011. Prior to that role, he was a Senior Business Banking Relationship Manager and Manager of the Business & Professional Banking Center for M&T Bank. Mr. Cutrona holds a Bachelor of Arts in Communication/Management with concentrations in Marketing & Sales and is a graduate of the American Bankers Association Stonier Graduate School of Banking program.

Derek M. Dyson is our Chief Information Officer, a position he has held since March 2022. Prior to this appointment, from June 2012 until March 2022, Mr. Dyson served in various roles internally. Mr. Dyson holds a Bachelor of Science in Financial Market Regulation, with concentrations in both General Informatics as well as Economics from The University at Albany.

References to our Website Address

References to our website address throughout this proxy statement and the accompanying materials are for informational purposes only. These references are not intended to, and do not, incorporate the contents of our website by reference into this proxy statement or the accompanying materials.

Communications with the Board of Directors

Any stockholder who wishes to contact our Board of Directors or an individual Director may do so by writing to: Generations Bancorp 20 East Bayard Street, Seneca Falls, New York 13148, Attention: Board of Directors. The letter should indicate that the sender is a stockholder and, if shares are not held of record, should include appropriate evidence of stock ownership. Communications are reviewed by the Corporate Secretary and are then distributed to the Board of Directors or the individual Directors, as appropriate, depending on the facts and circumstances outlined in the communications received. The Corporate Secretary may attempt to handle an inquiry directly (for example, where it is a request for information about Generations Bancorp or it is a stock-related matter). The Corporate Secretary has the authority not to forward a communication if it is primarily commercial in nature, relates to an improper or irrelevant topic, or is unduly hostile, threatening, illegal, or otherwise inappropriate. At each Board of Directors meeting, the Corporate Secretary shall present a summary of all communications received since the last meeting that were not forwarded and make those communications available to the Directors on request.

Meetings and Committees of the Board of Directors

The business of Generations Bancorp is conducted at regular and special meetings of the Board of Directors and its committees. In addition, the "independent" members of the Board of Directors (as defined in the listing standards of the Nasdaq Stock Market) meet in executive sessions. The standing committees of the Board of Directors of Generations Bancorp are the Audit Committee, the Nominating and Corporate Governance Committee, and the Compensation Committee.

During 2024, the Board of Directors of Generations Bancorp and Generations Bank held 12 regular meetings and one special meeting. No member of the Board of Directors or any committee thereof attended fewer than 75% of the aggregate of: (i) the total number of meetings of the Board of Directors (held during the period for which the Director has been a Director); and (ii) the total number of meetings held by all committees on which the Director served (during the periods that the Director served).

Audit Committee. The Audit Committee is comprised of Directors Aikman, Gardner, Jones, Pender, and Sinicropi. Mr. Sinicropi serves as chair of the Audit Committee.

Our Board of Directors has adopted a written charter for the Audit Committee, which is available on our website at www.generationsbancorpny.com. As more fully described in the Audit Committee Charter, the Audit Committee reviews the financial records and affairs of Generations Bancorp and monitors adherence in accounting and financial reporting to accounting principles generally accepted in the United States of America. The Audit Committee met 6 times during the year ended December 31, 2024.

Compensation Committee. The Compensation Committee is comprised of Directors Aikman, Jones, Macaluso, and Nicchi. Director Jones serves as chair of the Compensation Committee. The Compensation Committee met 5 times during the year ended December 31, 2024.

With regard to compensation matters, the Compensation Committee's primary purposes are to discharge the Board's responsibilities relating to the compensation of the Chief Executive Officer and other executive officers, to oversee Generations Bancorp's compensation and incentive plans, policies and programs, and to oversee Generations Bancorp's management development and succession plans for executive officers. The Chief Executive Officer will not be present during any committee deliberations or voting with respect to her compensation. The Compensation Committee may form and delegate authority and duties to subcommittees as it deems appropriate.

The Compensation Committee operates under a written charter which is available on our website at www.generationsbancorpny.com. This charter sets forth the responsibilities of the Compensation Committee and reflects the Compensation Committee's commitment to create a compensation structure that encourages the achievement of long-range objectives and builds long-term value for our stockholders.

The Compensation Committee considers a number of factors in their decisions regarding executive compensation, including, but not limited to, the level of responsibility and performance of the individual executive officers, the overall performance of Generations Bancorp, and a peer group analysis of compensation paid at institutions of comparable size and complexity. The Compensation Committee also considers the recommendations of the President and Chief Executive Officer with respect to the compensation of executive officers other than the President and Chief Executive Officer.

The Corporate Governance and Nominating Committee

The Corporate Governance and Nominating Committee consists of Directors Aikman, Jones, Macaluso, and Nicchi. Director Jones serves as the chairman of the Committee. The Board of Directors has adopted a written charter for the Committee. The Corporate Governance and Nominating Committee charter is posted on the Company website: www.generationsbancorpny.com. The Corporate Governance and Nominating Committee met 5 times during the year ended December 31, 2024.

The functions of the Corporate Governance and Nominating Committee include the following:

- to lead the search for individuals qualified to become members of the Board and to select Director nominees to be presented for stockholder approval;
- to review and monitor compliance with the requirements for board independence;
- to review the committee structure and make recommendations to the Board regarding committee membership; and

• to develop and recommend corporate governance guidelines to the Board of Directors for its approval.

The Corporate Governance and Nominating Committee identifies nominees by first evaluating the current members of the Board of Directors willing to continue in service. Current members of the Board with skills and experience that are relevant to the Company's business and who are willing to continue in service are first considered for renomination, balancing the value of continuity of service by existing members of the Board with that of obtaining a new perspective. If any member of the Board does not wish to continue in service, or if the Committee or the Board decides not to re-nominate a member for re-election, or if the size of the Board is increased, the Committee would solicit suggestions for Director candidates from all Board members. In addition, the Committee is authorized by its charter to engage a third-party to assist in the identification of Director nominees. The Corporate Governance and Nominating Committee would seek to identify a candidate who at a minimum satisfies the following criteria:

- has personal and professional ethics and integrity;
- has had experiences and achievements that have given him or her the ability to exercise and develop good business judgment;
- is willing to devote the necessary time to the work of the Board and its committees, which includes being available for Board and committee meetings;
- is familiar with the communities in which the Company operates and/or is actively engaged in community activities;
- satisfies the Director qualifications set forth in the Company's bylaws;
- is involved in other activities or interests that do not create a conflict with his or her responsibilities to us and the Company's stockholders; and
- has the capacity and desire to represent the balanced, best interests of the Company's stockholders as a group, and not primarily a special interest group or constituency.

Nominating Procedures.

The Board of Directors may consider qualified candidates for Directors suggested by our stockholders. Stockholders can suggest qualified candidates for Directors by writing to our Corporate Secretary at 20 East Bayard Street, Seneca Falls, New York 13148. The Board of Directors has adopted a procedure by which stockholders may recommend nominees to the Board of Directors. Stockholders who wish to recommend a nominee must write to Generations Bancorp's Corporate Secretary and such communication must include:

- A statement that the writer is a stockholder and is proposing a candidate for consideration by the Board of Directors;
- The name and address of the stockholder as they appear on Generations Bancorp's books, and of the beneficial owner, if any, on whose behalf the nomination is made;
- The class or series and number of shares of Generations Bancorp's capital stock that are owned beneficially or of record by such stockholder and such beneficial owner;
- A description of all arrangements or understandings between such stockholder and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are to be made by such stockholder;
- A representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the nominee named in the stockholder's notice;

- The name, age, personal and business address of the candidate, and the principal occupation or employment of the candidate;
- The candidate's written consent to serve as a Director;
- A statement of the candidate's business and educational experience and all other information relating to such person that would indicate such person's qualification to serve on Generations Bancorp's Board of Directors; and
- Such other information regarding the candidate or the stockholder as would be required to be included in Generations Bancorp's proxy statement pursuant to Securities and Exchange Commission Regulation 14A.

To be timely, the submission of a candidate for Director by a stockholder must be received by the Corporate Secretary at least 120 days prior to the anniversary date of the proxy statement relating to the preceding year's annual meeting of stockholders. If (i) less than 90 days' prior to public disclosure of the date of the meeting is given to stockholders and (ii) the date of the annual meeting is advanced more than 30 days prior to or delayed more than 30 days after the anniversary of the preceding year's annual meeting, a stockholder's submission of a candidate shall be timely if delivered or mailed to and received by the Corporate Secretary of Generations Bancorp no later than the 10th day following the day on which public disclosure (by press release issued through a nationally recognized news service, a document filed with the Securities and Exchange Commission, or on a website maintained by Generations Bancorp) of the date of the annual meeting is first made.

Submissions that are received and that satisfy the above requirements are forwarded to the Board of Directors for further review and consideration, using the same criteria to evaluate the candidate as it uses for evaluating other candidates that it considers.

There is a difference between the recommendations of nominees by stockholders pursuant to this policy and a formal nomination (whether by proxy solicitation or in person at a meeting) by a stockholder. Stockholders have certain rights under applicable law with respect to nominations, and any such nominations must comply with applicable law and provisions of the bylaws of Generations Bancorp. See "Stockholder Proposals and Nominations."

Transactions with Certain Related Persons

Federal law generally prohibits publicly traded companies from making loans to their executive officers and Directors, but it contains a specific exemption from the prohibition for loans made by federally insured financial institutions, such as Generations Bank, to their executive officers and Directors in compliance with federal banking regulations. At December 31, 2024, all of our loans to Directors and executive officers were made in the ordinary course of business, were made on substantially the same terms, including interest rates and collateral, as those prevailing at the time for comparable loans with persons not related to Generations Bank, and did not involve more than the normal risk of collectability or present other unfavorable features. These loans were performing according to their original repayment terms at December 31, 2024, and were made in compliance with federal banking regulations.

Benefit Plans and Agreements

Amended and Restated Employment Agreement with Angela M. Krezmer. In connection with Angela M. Krezmer's promotion to President, Chief Executive Officer, and Chief Financial Officer, Generations Bank entered into an amended and restated employment agreement with Angela M. Krezmer effective December 18, 2023. Commencing on the first anniversary of the agreement and on each subsequent anniversary thereafter, the agreement will be renewed for an additional year so that the remaining term will be three years for the agreement, unless a notice is provided to the executive that the agreement will not renew.

The Bank may terminate the Executive's employment for "cause" (as defined in the Agreement) at any time, in which event the Executive would have no right to receive compensation or other benefits for any period after termination of employment. Certain events resulting in the Executive's termination or resignation entitle the Executive to payments of severance benefits following termination of employment. In the event of the Executive's involuntary termination for reasons other than for cause, disability or retirement, or in the event the Executive resigns for "good reason" (as defined in the Agreement), then the Executive would be entitled to a severance payment in the form of a cash lump sum equal to one and one-half times the sum of (i) the highest annual base salary paid to Executive at any time under the Agreement, and (ii) the greater of (x) the average annual cash bonus paid to Executive with respect to the three (3) completed fiscal years prior to the event of termination, or (y) the cash bonus paid to the Executive with respect to the fiscal year ended prior to the event of termination. In addition, the Executive will receive, at no expense to the Executive, continued life insurance coverage and non-taxable medical and dental insurance coverage for 18 months, or if the coverage is not permitted by applicable law or if providing the benefits would subject the Bank to penalties, the Executive will receive a cash lump sum payment equal to the value of the benefits.

In the event of a change in control of the Bank or the Company, followed by Executive's involuntary termination other than for cause, disability or retirement, or resignation for one of the reasons set forth above, the Executive would be entitled to a severance payment in the form of a cash lump sum equal to three times the sum of (i) the highest rate of base salary paid to the Executive at any time under the Agreement, and (ii) the highest cash bonus paid to the Executive with respect to the three (3) completed fiscal years prior to the change of control. In addition, the Executive would become entitled, at no expense to the Executive, to the continuation of life insurance and non-taxable medical and dental coverage for thirty-six (36) months following her termination of employment, or if the coverage is not permitted by applicable law or if providing the benefits would subject the Bank to penalties, the Executive will receive a cash lump sum payment equal to the value of the benefits.

The Agreement also provides certain death and disability benefits.

Upon termination of the Executive's employment (other than following a change in control), the Executive will be subject to certain restrictions on her ability to compete or to solicit business or employees of the Bank and the Company for a period of one year following termination of employment. The Agreement also includes provisions protecting the Company's and Bank's confidential business information.

Employment Agreement with Anthony G. Cutrona. Generations Bank entered into an employment agreement with Chief Banking Officer Anthony G. Cutrona effective January 31, 2022. Commencing on the first anniversary of the agreement and on each subsequent anniversary thereafter, the agreement will be renewed for an additional year so that the remaining term will be two years for the agreement, unless a notice is provided to the executive that the agreement will not renew.

The Bank may terminate the Executive's employment for "cause" (as defined in the Agreement) at any time, in which event the Executive would have no right to receive compensation or other benefits for any period after termination of employment. Certain events resulting in the Executive's termination or resignation entitle the Executive to payments of severance benefits following termination of employment. In the event of the Executive's involuntary termination for reasons other than for cause, disability or retirement, or in the event the Executive resigns for "good reason" (as defined in the Agreement), then the Executive would be entitled to a severance payment in the form of a cash lump sum equal to one and one-half times the sum of (i) the highest annual base salary paid to Executive at any time under the Agreement, and (ii) the greater of (x) the average annual cash bonus paid to Executive with respect to the three (3) completed fiscal years prior to the event of termination, or (y) the cash bonus paid to the Executive with respect to the fiscal year ended prior to the event of termination. In addition, the Executive will receive, at no expense to the Executive, continued life insurance coverage and non-taxable medical and dental insurance coverage for 18 months, or if the coverage is not permitted by applicable law or if providing the benefits would subject the Bank to penalties, the Executive will receive a cash lump sum payment equal to the value of the benefits.

In the event of a change in control of the Bank or the Company, followed by Executive's involuntary termination other than for cause, disability or retirement, or resignation for one of the reasons set forth above, the Executive would be entitled to a severance payment in the form of a cash lump sum equal to two times the sum of the highest rate of base salary paid to the Executive at any time under the Agreement.

The Agreement also provides certain death and disability benefits.

Upon termination of the Executive's employment (other than following a change in control), the Executive will be subject to certain restrictions on his ability to compete or to solicit business or employees of the Bank and the Company for a period of one year following termination of employment. The Agreement also includes provisions protecting the Company's and Bank's confidential business information.

Change in Control Agreement with Derek M. Dyson. Generations Bank entered into a change in control agreement with Derek M. Dyson on December 18, 2023. The agreement provides that in the event of a change in control of the Company or the Bank, the executive will receive a severance payment, paid in a lump sum, equal to: (i) one and one-quarter (1.25) times the executive's base salary as of the date of a change in control, and (ii) one and one-quarter (1.25) times the highest rate of cash bonus awarded to executive during the prior three years. In addition, the executive will be entitled to continued medical and dental coverage for fifteen (15) months, at no cost to the executive. The severance benefit may be reduced if the severance benefits result in "excess parachute payments" under Section 280G of the Internal Revenue Code.

Amended and Restated Directors Retirement Plan. Generations Bank sponsors a deferred compensation plan for Directors. Under the plan, eligible Directors may elect to defer receipt of all or a portion of their compensation by filing a written election with the plan administrator in the year prior to the year of deferral. Benefits under the plan commence upon the participant's separation from service as a Director, and may be paid in the form of a lump sum, or in quarterly or annual installments over a period of up to 10 years. Participants may elect separate distribution forms or schedules on a year by year basis with respect to compensation covered by deferral elections for such years. Additionally, Generations Bank will make an annual contribution to each participant's account each year (assuming the participant has not had a separation from service) ending the year in which the participant attains age 75. Such contribution is determined by the Board of Directors at the time the participant becomes eligible to participate in the plan. The plan is a nonqualified plan intended to comply with Section 409A of the Internal Revenue Code, and will be administered and construed in all respects in order to comply with such intent.

Supplemental Executive Retirement Plans. Generations Bank has entered into a supplemental executive retirement plan with Derek M. Dyson. Under the terms of the plan, Mr. Dyson is entitled to the value of his account balance upon termination of employment or death.

Frozen Defined Benefit Pension Plans. Generations Bank maintains two defined benefit pension plans for eligible employees, both of which are frozen. The Generations Bank Pension Plan accrued benefits for eligible employees of Generations Bank that were hired prior to October 1, 2016 and The Retirement Plan of Medina Savings & Loan Association Pension Plan covered former eligible employees hired prior to June 1, 2018 of Medina Savings & Loan Association, which merged with Generations Bank in October 2018.

Employee Stock Ownership Plan. Generations Bank maintains an employee stock ownership plan ("ESOP"), a tax-qualified defined contribution retirement plan, for all eligible employees. Employees (age 21 and above) of Generations Bank who have been credited with 1,000 hours of service during a continuous 12-month period are eligible to participate in the ESOP. In January 2021, the ESOP purchased 109,450 shares of Generations Bancorp common stock sold in the mutual to stock second step offering and funded its stock purchase with a loan from Generations Bancorp equal to the aggregate purchase price of the common stock. The loan will be repaid principally through Generations Bank's contribution to the ESOP and dividends payable on common stock held by the ESOP over the anticipated 25-year term of the loan. The interest rate for the ESOP loan is fixed at a rate of 3.25%.

2022 Equity Incentive Plan. On May 19, 2022, the stockholders of Generations Bancorp approved the 2022 Equity Incentive Plan (the "Equity Plan") which provides for the grant of stock based awards to its Directors and executive officers of Generations Bancorp and Generations Bank. The Equity Plan authorizes the issuance or delivery of up to 206,860 shares of Generations Bancorp common stock pursuant to grants of restricted stock awards, incentive stock options, and non-qualified stock options; provided, however, that the maximum number of shares of stock that may be delivered pursuant to the exercise of the options is 147,757 (all of which may be granted as incentive stock options).

The Equity Plan is administered by members of the Compensation Committee who are "Disinterested Board Members" as defined in the Plan. The Compensation Committee has the authority and discretion to select the persons who will receive the awards; establish the terms and conditions relating to each award; adopt rules and regulations relating to the Equity Plan; and interpret the Equity Plan. The Equity Plan also permits the Compensation Committee to delegate all or any portion of its responsibilities and powers.

Our executive officers and outside directors are eligible to receive awards under the Equity Plan. Awards may be granted in a combination of restricted stock awards, incentive stock options, and non-qualified stock options. The exercise price of the stock options granted under the Equity Plan may not be less than the fair market value on the date the stock option is granted. Stock options are subject to vesting conditions and restrictions as determined by the Compensation Committee. Stock awards under the Equity Plan will be granted only in whole shares of common stock. All restricted stock and stock option grants will be subject to conditions established by the Compensation Committee that are set forth in the award agreement.

PROPOSAL II—RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of Generations Bancorp has approved the engagement of Bonadio to be our independent registered public accounting firm for the year ending December 31, 2025, subject to the ratification of the engagement by our stockholders. At the annual meeting, stockholders will consider and vote on the ratification of the Audit Committee's engagement of Bonadio for the year ending December 31, 2025.

Even if the engagement of Bonadio is ratified, the Audit Committee, in its discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if it determines that such change would be in the best interests of Generations Bancorp and its stockholders.

The Audit Committee's current policy is to pre-approve all audit and non-audit services provided by the independent registered public accounting firm, either by approving an engagement prior to the engagement or pursuant to a pre-approval policy with respect to particular services, subject to the de minimis exceptions for non-audit services described in Section 10A(i)(1)(B) of the Securities Exchange Act of 1934, as amended. These services may include audit services, audit-related services, tax services, and other services. The independent registered public accounting firm and management are required to periodically report to the full Audit Committee regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval, and the fees for the services performed to date.

The Board of Directors recommends a vote "FOR" the ratification of Bonadio & Co., LLP as independent registered public accounting firm for the year ending December 31, 2025.

ADVANCE NOTICE OF BUSINESS TO BE CONDUCTED AT ANNUAL MEETING

The Company and the Bank have signed a Purchase and Assumption Agreement with ESL Federal Credit Union and we expect the P&A Transaction to be consummated in 2025. After the consummation of the P&A Transaction, we will begin the process of the voluntary dissolution of the Company. Accordingly, we do not expect to hold an annual meeting of stockholders in 2026.

The Company's bylaws generally provide that any stockholder desiring to make a proposal for new business at an annual meeting of stockholders or to nominate one or more candidates for election as Directors must provide a written notice delivered or mailed to and received by the Corporate Secretary of Generations Bancorp at our principal executive office not less than 90 days nor more than 100 days before the anniversary of the prior year's annual meeting of stockholders; provided, however, that if the date of the annual meeting is advanced more than thirty (30) days before the anniversary of the prior year's annual meeting of stockholders, such written notice shall be timely only if delivered or mailed to and received by the Corporate Secretary of Generations Bancorp at the principal executive office of the Company no earlier than the day on which public disclosure of the date of such annual meeting is first made and not later than the 10th day following the earlier of the day notice of the meeting was mailed to stockholders or such public disclosure was made. The notice must include the stockholder's name, record address, and number of shares owned, describe briefly the

proposed business, the reasons for bringing the business before the annual meeting, and any material interest of the stockholder in the proposed business. In the case of nominations to the Board of Directors, certain information regarding the nominee must be provided. Nothing in this paragraph shall be deemed to require the Company to include in the proxy statement and proxy relating to an annual meeting any stockholder proposal.

We do not expect to hold an annual meeting of stockholders in 2026.

OTHER MATTERS

The Board of Directors is not aware of any business to come before the annual meeting other than the matters described above in the Proxy Statement. However, if any matters should properly come before the annual meeting, it is intended that the Board of Directors, as holders of the proxies, will act as determined by a majority vote.

MISCELLANEOUS

A COPY OF GENERATION BANCORP'S ANNUAL REPORT FOR THE YEAR ENDED DECEMBER 31, 2024 WILL BE FURNISHED WITHOUT CHARGE TO STOCKHOLDERS AS OF THE RECORD DATE UPON WRITTEN REQUEST TO INVESTOR RELATIONS, 20 EAST BAYARD STREET, SENECA FALLS, NEW YORK 13148 OR BY CALLING (315) 568-1167.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS

Generations Bancorp's Proxy Statement, including the Notice of the Annual Meeting of Stockholders, and the 2024 meeting materials are available on the Internet at www.generationsbancorpny.com/annual-meeting.

By Order of the Board of Directors,

Lori M. Parish Corporate Secretary

Seneca Falls, New York May 23, 2025