

WHEELER REAL ESTATE INVESTMENT TRUST, INC.

OFFER TO EXCHANGE and CONSENT SOLICITATION

The Exchange Offer and related Consent Solicitation will expire at 11:59 p.m., New York City time, on January 6, 2023, unless extended or earlier terminated by the Company.

This is Prospectus Supplement No. 2 (this "Prospectus Supplement") to the Prospectus/Consent Solicitation dated November 22, 2022, as amended by Prospectus Supplement No. 1 dated December 15, 2022 (as it may be further supplemented and amended from time to time, the "Prospectus/Consent Solicitation"), of Wheeler Real Estate Investment Trust, Inc. (the "Company," "our," "we" or "us"), relating to our offer to exchange (the "Exchange Offer"), upon the terms and subject to the conditions set forth in the Prospectus/Consent Solicitation, any and all validly tendered, not validly withdrawn and validly accepted outstanding shares of our Series D Cumulative Convertible Preferred Stock for 6.00% Subordinated Notes due 2027, to be newly issued by the Company. We refer to our Series D Cumulative Convertible Preferred Stock as the "Series D Preferred Stock" and to our 6.00% Subordinated Notes due 2027 as the "Exchange Notes". Terms used but not defined in this Prospectus Supplement have the meanings ascribed to them in the Prospectus/Consent Solicitation. The information contained in this Prospectus Supplement updates and supplements, and should be read together with, the Prospectus/Consent Solicitation, as supplemented and amended from time to time.

Concurrently with and as an integral part of the Exchange Offer, we are also soliciting consents (the "Consent Solicitation") from the Series D Preferred Holders, upon the terms and conditions set forth in the Prospectus/Consent Solicitation, to certain amendments to our charter that will modify the terms of the Series D Preferred Stock (the "Proposed Amendments").

We have extended the Expiration Date and Time from 11:59 p.m., New York City time, on December 22, 2022 to 11:59 p.m., New York City time, on January 6, 2023 to allow additional time for the holders of Series D Preferred Stock to tender their shares of Series D Preferred Stock in the Exchange Offer.

The consummation of the Exchange Offer and Consent Solicitation is subject to, and is conditional upon, the satisfaction of the conditions listed under *The Exchange Offer* and *Consent Solicitation – Conditions of the Exchange Offer*, included in the Prospectus/Consent Solicitation, including the condition that the holders of at least 66 2/3% of the outstanding shares of Series D Preferred Stock (i) validly tender their Series D Preferred Stock into the Exchange Offer, and do not validly withdraw such Series D Preferred Stock, on or prior to the Expiration Date and Time, and (ii) consent to the Proposed Amendments. The valid tender of Series D Preferred Stock in the Exchange Offer will constitute an automatic consent to the Proposed Amendments.

You may validly withdraw tendered shares of Series D Preferred Stock and thereby validly revoke your consent to the Proposed Amendments at any time prior to the Expiration Date and Time, and after the expiration of 40 business days from the commencement of the Exchange Offer and Consent Solicitation if tendered shares of Series D Preferred Stock have not yet been accepted by the Company for exchange.

Participation in the Exchange Offer and Consent Solicitation involves risks. Prior to determining whether to participate in the Exchange Offer and Consent Solicitation, please see "Risk Factors" beginning on page 23 of the Prospectus/Consent Solicitation for a discussion of certain factors that you should consider in connection with the Exchange Offer and Consent Solicitation and with any investment in the Exchange Notes.

If you wish to tender shares of Series D Preferred Stock into the Exchange Offer, you should follow the instructions beginning on page 54 of the Prospectus/Consent Solicitation. If you wish to withdraw a previously provided tender of Series D Preferred Stock and related consent to the Proposed Amendments, you may do so by following the instructions beginning on page 55 of the Prospectus/Consent Solicitation. Please note Series D Preferred Holders should be aware that their broker, dealer, commercial bank, trust company or other nominee or custodian may establish their own earlier deadlines for participation in or withdrawal from the Exchange Offer and Consent Solicitation. Accordingly, Series D Preferred Holders wishing to participate in the Exchange Offer and Consent Solicitation should promptly contact their broker, dealer, commercial bank, trust company or other nominee or custodian as soon as possible in order to determine the times by which such Series D Preferred Holders must take action in order to participate in the Exchange Offer and Consent Solicitation.

We Are Not Asking You for a Proxy and You are Requested Not To Send Us a Proxy.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Exchange Offer and Consent Solicitation, including the Exchange Notes to be issued as part of the Exchange Offer or the Proposed Amendments to be adopted as part of the Consent Solicitation, or any other matter described herein, or determined if the Prospectus/Consent Solicitation is truthful or complete. Any representation to the contrary is a criminal offense.

The Dealer Manager for the Exchange Offer and the Solicitation Agent for the Consent Solicitation is:

Odeon Capital Group LLC 750 Lexington Ave New York, NY 10022 Attn: Andrew Feldschreiber, Managing Director Tel: (212) 257-6164 Email: Afeldschreiber@odeoncap.com

This Prospectus Supplement is dated December 23, 2022.