



**Wheeler Real Estate Investment Trust, Inc.**

This is Prospectus Supplement No. 28 (this "Prospectus Supplement") to our Prospectus, dated March 20, 2026 (the "Prospectus"), relating to the offer and sale of up to 673,971 shares of common stock, par value \$0.01 per shares ("Common Stock"), of Wheeler Real Estate Investment Trust, Inc. issuable upon exercise of the warrants described therein by the selling stockholders identified in the Prospectus. Terms used but not defined in this Prospectus Supplement have the meanings ascribed to them in the Prospectus.

We have attached to this Prospectus Supplement our Current Report on Form 8-K filed on September 8, 2026. The attached information updates and supplements, and should be read together with, the Prospectus, as supplemented from time to time.

**Investing in our Common Stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "*Risk Factors*" beginning on page 6 of the Prospectus, and under similar headings in any amendments or supplements to the Prospectus.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the Prospectus. Any representation to the contrary is a criminal offense.**

The date of this Prospectus Supplement is September 8, 2026.

---

---

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

**FORM 8-K**

**CURRENT REPORT  
PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

Date of report (date of earliest event reported): **September 2, 2026**

**WHEELER REAL ESTATE INVESTMENT TRUST, INC.**  
(Exact name of registrant as specified in its charter)

|                                                                                                     |                                                 |                                                           |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------|
| <b>Maryland</b><br>(State or other jurisdiction<br>of incorporation or organization)                | <b>001-35713</b><br>(Commission<br>File Number) | <b>45-2681082</b><br>(IRS Employer<br>Identification No.) |
| <b>2529 Virginia Beach Blvd.<br/>Virginia Beach, VA</b><br>(Address of principal executive offices) |                                                 | <b>23452</b><br>(Zip code)                                |

Registrant's telephone number, including area code: **(757) 627-9088**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the following provisions:

- ☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- ☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- ☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Securities registered pursuant to Section 12(b) of the Act:

| <b>Title of each class</b>                      | <b>Trading Symbol(s)</b> | <b>Name of each exchange on which<br/>registered</b> |
|-------------------------------------------------|--------------------------|------------------------------------------------------|
| Common Stock, \$0.01 par value per share        | WHLR                     | Nasdaq Capital Market                                |
| Series B Preferred Stock                        | WHLRP                    | Nasdaq Capital Market                                |
| Series D Cumulative Convertible Preferred Stock | WHLRD                    | Nasdaq Capital Market                                |
| 7.00% Subordinated Convertible Notes due 2031   | WHLRL                    | Nasdaq Capital Market                                |

### Item 3.02 Unregistered Sales of Equity Securities

On September 2, 2026, Wheeler Real Estate Investment Trust, Inc. (the “Company”) agreed to issue an aggregate amount of 581,328 shares of its common stock, \$0.01 par value per share (the “Common Stock”), to two unaffiliated holders of the Company’s securities (together, the “September 2 Investors”) in separate exchanges for an aggregate amount of 23,664 shares of the Company’s Series B Preferred Stock (the “Series B Preferred Stock”) and 3,537 shares of the Company’s Series D Cumulative Convertible Preferred Stock (the “Series D Preferred Stock” and, together with the Series B Preferred Stock, the “Preferred Stock”). One transaction involved the issuance of one hundred twenty-four shares of Common Stock in exchange for four shares of Series B Preferred Stock and one share of Series D Preferred Stock. The other transaction involved the issuance of fifteen shares of Common Stock in exchange for one share of Series B Preferred Stock. The transactions settled in accordance with customary settlement cycles.

On September 3, 2026, the Company agreed to issue 260,300 shares of Common Stock to an unaffiliated holder of the Company’s securities (the “September 3 Investor”) in exchange for 7,600 shares of the Series B Preferred Stock and 1,900 shares of the Series D Preferred Stock. The transaction involved the issuance of one hundred thirty-seven shares of Common Stock in exchange for four shares of Series B Preferred Stock and one share of Series D Preferred Stock. The transaction settled in accordance with customary settlement cycles.

The Company did not receive any cash proceeds in these transactions, and the shares of the Preferred Stock exchanged have been retired and cancelled.

The Company issued the Common Stock to the September 2 Investors and the September 3 Investor (together, the "Investors") in reliance upon the exemption from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), contained in Section 3(a)(9) of the Securities Act on the basis that the issuance of Common Stock to the Investors constituted an exchange with existing holders of the Company’s securities, and no commission or other remuneration was paid or given directly or indirectly for soliciting such transactions.

This Current Report on Form 8-K does not constitute an offer to exchange any securities of the Company for the Common Stock, the Series D Preferred Stock, the Series B Preferred Stock or other securities of the Company.

---

## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

WHEELER REAL ESTATE INVESTMENT TRUST, INC.

By: /s/ M. Andrew Franklin  
Name: M. Andrew Franklin  
Title: Chief Executive Officer and President

Dated: September 8, 2026