

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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): **January 3, 2006**

Bimini Mortgage Management, Inc.

(Exact Name of Registrant as Specified in Charter)

Maryland
(State or Other Jurisdiction
of Incorporation)

001-32171
(Commission
File Number)

72-1571637
(IRS Employer
Identification No.)

3305 Flamingo Drive, Vero Beach, Florida 32963
(Address of Principal Executive Offices) (Zip Code)

Registrant's telephone number, including area code **(772) 231-1400**

N/A

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation 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))

ITEM 8.01. Other Events

As of December 31, 2005, Bimini Mortgage Management, Inc. repurchased 539,300 shares of Class A Common Stock, or approximately 30% of the 1,800,000 shares of Class A Common Stock that it is authorized to repurchase pursuant to a share repurchase program that was announced on October 7, 2005.

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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.

Date: January 3, 2006

BIMINI MORTGAGE MANAGEMENT, INC.

By: /s/ Jeffrey J. Zimmer
Jeffrey J. Zimmer
Chairman, Chief Executive Officer and
President

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