WASHINGTON — Justice Anthony M. Kennedy announced on Thursday that he would retire from the Supreme Court after decades on the nation’s highest tribunal and just in time to let President Trump and the Republican-controlled Senate craft a replacement conservative seat on the American court. Kennedy’s retirement sets the stage for a historic fight over who will fill the final seat this October on the court, which has been closely divided for two decades. If Kennedy had announced his retirement earlier in the year, as he had intended, he might have paved the way for a less tumultuous process.

Justice Kennedy hand-delivered his formal resignation letter to Chief Justice John G. Roberts Jr., the court’s swing voter, on Thursday morning; it will become official when the court adjourns at 6 p.m. Friday. It leaves a lingering question of whether Mr. Trump and the Senate, which hold a single vote majority, will choose to fill the seat before the November elections. If not, the vacancy will carry over to the 2022 elections, when a Democrat may be in control of the Senate.

Justice Kennedy’s departure fulfills a promise of President Donald J. Trump, who has vowed to fill all future Supreme Court vacancies, as well as the retirement of Justice Anthony M. Kennedy, which he announced last month. Mr. Trump had hoped that Kennedy would retire, allowing him to name a reliably conservative associate justice, but Kennedy had intended to retire earlier in the year. Mr. Trump had strongly considered the idea of naming a successor before he named Justice Neil M. Gorsuch in 2017.

Mr. Trump and his Republican allies have an opportunity to create a new majority bloc on the court, which would replace Justice Kennedy’s no. Mr. Trump has vowed to choose a colleague who shares his conservative views. Republican leaders in the Senate are poised to quickly confirm whomever Mr. Trump nominates. It is unlikely that the Senate will hold a bitter debate over Kennedy’s successor, since it was willing to confirm President Barack Obama’s nominee, Merrick B. Garland, to the court in 2016.

Kennedy’s departure also appears to have come as a surprise to many Republican leaders. But if influence were the deciding factor, his departure would not have been nearly as surprising, since Mr. Trump and Mr. Kennedy had often voted together. Mr. Trump had publicly praised Mr. Kennedy, who had been revered on the court for his influence in deciding a host of historic cases, including those involving abortion, affirmative action, immigration and gun control.

Mr. Trump and Mr. Kennedy have often voted together on the court, with Mr. Kennedy’s retirement eliminating a fourth vote for Mr. Trump’s conservative vision. Mr. Trump has made clear that he will choose a colleague who shares his conservative views. Republican leaders in the Senate are poised to quickly confirm whomever Mr. Trump nominates. It is unlikely that the Senate will hold a bitter debate over Kennedy’s successor, since it was willing to confirm President Barack Obama’s nominee, Merrick B. Garland, to the court in 2016.