Home child-care worker Julia Perez opened her door in Grandview, Wash., earlier this year to a foot soldier in the latest front in the age-old fight over the future of public-sector unions.

A woman, sent by a conservative group called the Freedom Foundation, told Ms. Perez she could save money by leaving her union, the Service Employees International Union, which represents home child-care workers in the state. A few days later, Ms. Perez mailed in a simple form to cancel her union membership, saving about $10 per paycheck.

For the past year, the Freedom Foundation has been at the vanguard of an emerging effort to undercut public-sector unions by depriving them of dues-paying members one at a time. While some national conservative groups engage in broad lobbying fights in Washington, D.C., seeking to make it harder for labor unions to recruit new members or collect dues, the foundation's strategy involves engaging unions led by the mammoth SEIU in door-to-door combat for union members like Ms. Perez.

A few other antiunion groups across the country have begun efforts to persuade union members to leave or stop paying a portion of their dues. In Las Vegas, a group called the Nevada Policy Research Institute instructs union members on how to opt out of their union during a two-week period each July. The Association of American Educators, a nonunion teachers group, is seeking to expand that effort to dozens of other states.

The Freedom Foundation's campaign appears to be the biggest effort of its kind. In Washington and Oregon, its home territory, as many as 100 activists work to tell thousands of individuals in the home health-care and child-care businesses, who are considered public-sector workers because they are paid with Medicaid funds, that they can save as much as $600 a year by voluntarily leaving their labor unions. The group is also pressing teachers in smaller school districts to disband their unions.

In December, activists dressed as Santa Claus stood outside state office buildings in Olympia in Washington and Portland and Salem in Oregon with signs that read: “Give...
Yourself a Christmas Bonus.” They handed out information telling state workers how to opt out of paying the portion of their union dues used for political spending, which can account for $250 to $300 a year.

“Most of the conservative groups in Washington have never been engaged in hand to hand combat—and we are,” says Tom McCabe, the head of the Freedom Foundation.

Mr. McCabe took over running the group two years ago after a 20-year career as the head of a homebuilders association in Washington state, where he regularly battled with labor unions.

“Everything we tried to do was blocked by the unions,” he said, referring to legislation on taxes and regulations and measures the association advocated.

The foundation spent $3.4 million last year, up from $2.2 million in 2014. It is funded by about 5,000 individuals and conservative groups, and it isn’t required to disclose who its donors are.

The door-to-door effort was launched as the result of a 2014 Supreme Court decision permitting union workers in home health- or child-care to opt out of their labor union.

So far, Mr. McCabe’s team has knocked on the doors of about 15,000 home health-care and child-care workers out of about 50,000 overall in Washington state since July 2014. He is targeting about 35,000 workers in Oregon.

Mr. McCabe gets the names of individual union members by sending open-records requests to state governments. Precise union membership figures are difficult to tally, but Mr. McCabe says the number of unionized child-care workers has fallen by nearly 60% since he started the effort.

The group plans to launch similar efforts in California shortly and is weighing campaigns in Illinois and Pennsylvania.

David Rolf, the president of the SEIU in Washington state, said that Mr. McCabe “talks a big game, but they just aren’t having the impact they claim to be having.”

The SEIU has fought the Freedom Foundation by filing a lawsuit seeking to block the government from handing over the names of home health workers to Mr. McCabe’s outfit. Last month, a court ruled in Mr. McCabe’s favor, permitting him to reach out to home health-care workers.

Labor unions are also collecting signatures for a ballot initiative that would keep confidential the names of home health-care workers. And they have filed legal complaints arguing that the Freedom Foundation is violating its tax-exempt status.

The unions have also mounted a direct attack on Mr. McCabe, his group and his donors.

The SEIU and other unions launched a group called the Northwest Accountability Project, which has sent leaflets to Mr. McCabe’s neighbors in Olympia calling him a “far right-wing extremist” who is funded by “out of state billionaires who want to keep wages low, eliminate paid sick leave and slash crucial funding for quality education.”

The union group sent a similar message to his neighbors via phone calls to their homes.

“The bottom line is we are taking their money,” Mr. McCabe said. “That’s very threatening to them.”

Write to Brody Mullins at Brody.Mullins@wsj.com
OLYMPICS
Top Olympian Can’t outrun Gender Questions

OLYMPICS
Did the Olympic Pool Give Some Swimmers an Advantage?

OLYMPICS
When Money Matters in Olympic Gymnastics

WORK & FAMILY
Why You Should Never Tell Someone to Relax
REVIEW & OUTLOOK (U.S.)

Oregon's Regressive Tax Referendum

ELECTION 2016

How the Trump Shake-Up Went Down