



the sunday break

TASTE TEST: CHICKEN WINGS

Ahead of Super Bowl 50 — between the Carolina Panthers and the Denver Broncos — an important local contest: Which Hampton Roads restaurant is king of the wing?

business

You might be rich

Well, rich might be overstating it, but if you have \$3,210 or more in net assets, you're doing better than half the world. **BUSINESS, PAGE 4**

The Virginian-Pilot

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BILL TIERNAN | THE VIRGINIAN-PILOT

Ted Henifin, general manager of the Hampton Roads Sanitation District, was tired of watching treated water flow uselessly into rivers and the bay. Then the idea hit him.

Can your sinks and toilets fight sea-level rise?

Virginia GOP asks state to cancel "loyalty oath"

Republican party cites "bad publicity" as cause for reversal

By Bill Bartel
The Virginian-Pilot

State Republican Party leaders voted in Richmond on Saturday to ask the state to cancel a required party loyalty pledge in the March 1 GOP presidential primary.

Roger Miles, a GOP state central committee member, said shortly after the unanimous voice vote that the party leaders are halting their plans because of "bad publicity."

At the party's request, the State Board of Elections had been requiring all voters in the GOP primary to sign and print their name on a statement affirming "I am a Republican" before being allowed to cast a ballot.

A statement from the Republican Party of Virginia on Saturday afternoon criticized edits made to the pledge

See OATH, PAGE 13

recycling water

A Hampton Roads Sanitation District plan to pump treated wastewater more than a thousand feet below into the region's aquifer could slow the sinking of land — known as subsidence — and help meet a federal mandate to clean up the Chesapeake Bay.

obstacles

Besides convincing residents that water going into the ground is clean enough to drink, there's the cost. Including design and construction, it is projected to be \$1 billion over 15 years.

SINKING LAND is part of the problem, as society guzzles groundwater. One solution is to pump treated wastewater back in.

By Dave Mayfield
The Virginian-Pilot

ON A clear December morning, a roaring stream rushed from the Hampton Roads Sanitation District's Suffolk treatment plant. Hundreds of thousands of sinks, showers and toilets had fed the torrent, now headed for the James River.

Looking down at the cascade, Ted Henifin tried to recall when he got the idea that maybe, just maybe, all that water needn't go to waste.

"I remember sending an email to our planning guy,

saying, 'Can we figure out how to do this?'" said Henifin, HRSD's general manager.

That message a couple of years ago marked the humble beginning of what's shaping up as one of the boldest public works proposals in recent Virginia history.

What Henifin has in mind is turning the treated wastewater into something useful. He wants to make it so clean that you and I could safely drink it, and then he wants to inject it more than a thousand feet underground into

See WASTEWATER, PAGE 12



STEVE EARLEY | VIRGINIAN-PILOT FILE PHOTO

Norfolk Treasurer Anthony Burfoot, who served on the City Council for more than a decade, has a trial set for May 3.

On the field and in Norfolk council chambers, Burfoot came ready to strike hard

City treasurer accused of corruption gathered help from mentors to rise to political prominence

By Tim Eberly
The Virginian-Pilot

NORFOLK

Anthony Burfoot played with a fire in his belly on the football field at Norfolk's Lake Taylor High School. He laid stinging hits on opponents and didn't back down from a fight — even with his coach.

Burfoot traded his football pads for bow ties and snappy suits when he landed on the City Council in 2002, but he never lost that pugnacity — whether he was dealing with fellow council

members, the city administration or community members.

"He came in guns-a-blasting," Councilman Barclay Winn said. "He was not a wallflower."

News of Burfoot's indictment on political corruption charges this month saddened some who worked with the man who grew up in the poverty-stricken Berkley neighborhood, played football for Virginia State University and later linked up with political mentors who helped him pull off an upset to seize a

See BURFOOT, PAGE 14



Marketing agency RocketBike takes off in Portsmouth

Business

ODU women's hoops heroes return to celebrate the school's 1,000th victory.

Sports

Relative speaks at candlelight vigil for the six relatives who died in Chesapeake murder-suicide.

Page 3



mild with plenty of sun

High: upper 60s. Low: mid-40s.

Details on the back page of Sports



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BILL TIERNAN PHOTOS | THE VIRGINIAN-PILOT

Tim Scott, the Nansemond Treatment Plant's lead operator, gives a tour of the facility on Armstead Road in Suffolk, where the first injection well would probably be drilled.

WASTEWATER

ICK FACTOR IS A CHALLENGE, BUT THIS WORKED ELSEWHERE

Continued from Page 1

an aquifer that's being rapidly depleted.

In doing so, he hopes to address a bunch of problems vexing coastal Virginia.

Geologists say that recharging the aquifer would help slow the sinking of our land—a problem known as subsidence. That would help make the region less vulnerable to rising seas.

The replenishment could allow Virginia to ease growing pressure on large groundwater users to reduce their withdrawals from the aquifer. And it could help development officials more aggressively market the region, whose economy has been struggling, to manufacturers or other employers with big water needs.

With HRSD's discharges into the Elizabeth, James and York rivers cut dramatically, Hampton Roads also would leap ahead in its progress toward a federal mandate to clean up the Chesapeake Bay. That could spare localities from having to invest hundreds of millions of dollars in stormwater management projects.

The HRSD project won't be cheap, easy or without controversy.

Its design and construction cost is estimated at \$1 billion over 15 years.

The agency will have to prove during extensive tests that the project is ready to go full-scale at the seven treatment plants being considered for it.

HRSD may run into push-back against its idea of charge groundwater users for aquifer withdrawals. In Virginia, that water is now free.

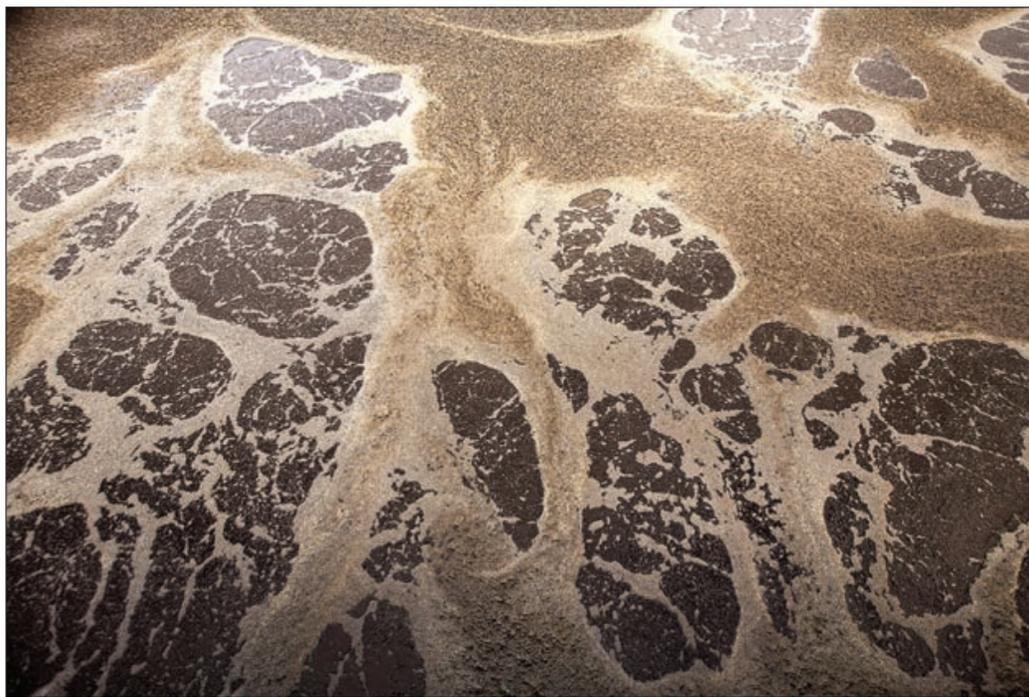
And then there's the "ick" factor.

"The thing that they're going to have to overcome and that's going to be the most difficult is public perception," said Robert Burnley, a former director of Virginia's Department of Environmental Quality.

Tens of thousands of homeowners in rural parts of coastal Virginia draw their drinking water directly from wells drilled into the aquifer that HRSD proposes to inject. Some towns, like Smithfield, depend on wells, too. Even some cities, like Portsmouth and Newport News, rely in part on groundwater.

"It's going to take a little selling to get people to accept that they'll essentially be drinking treated wastewater," Burnley said. "People don't want to think about drinking what they had been flushing."

He's sold, however: "That water is a very valuable resource, and a lot of money already goes



This is what the water looks like in the treatment process at one of the Suffolk plant's seven aeration tanks.

into treating it. It just seems terrible to throw it all away."

One of the first things that Henifin stresses when he talks about HRSD's proposal, known officially as the "sustainable water recycling initiative," is that his agency isn't exactly going out on a limb.

Other U.S. communities already are reusing wastewater.

In Northern Virginia, the Upper Occoquan Service Authority has for 38 years been discharging water from its treatment plant into a reservoir. That same reservoir is tapped by another authority that further treats the water and sends it to Fairfax County residents.

Orange County, Calif., cleans wastewater to even higher standards and mixes it in underground basins with water imported from rivers. The blend is then piped to customers' homes.

At the far extreme is what's known as direct, or "pipe-to-pipe," reuse—with no reservoir or aquifer in between. What comes in as sewage goes back treated to drinking-water standards. Two drought-plagued Texas communities—Big Spring and Wichita Falls—use that method now.

The water needs are not so desperate to warrant that approach in coastal Virginia, Henifin said. A pipeline from Lake Gaston provides South Hampton Roads' municipal systems with an abundance of fresh water. Reservoirs collect a lot as well.

AQUIFER SYSTEM COMPACTION

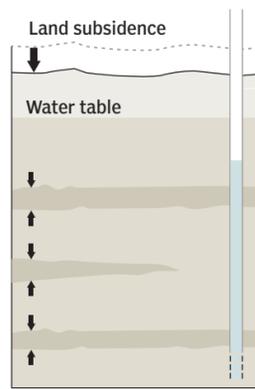
The clay layers in an aquifer system are the most susceptible to groundwater withdrawals. Their compaction is a major factor in land subsidence, or sinking.

Before pumping



SOURCE: U.S. Geological Survey

After pumping



THE VIRGINIAN-PILOT

Plus, pipe-to-pipe reuse "doesn't achieve all of the other environmental benefits" that aquifer replenishment would, he said.

When HRSD consultants produced computer models that showed recharging would pump up groundwater levels across a wide swath of coastal Virginia, he and others thought, "We're on to something here," Henifin said.

Geologists have for decades noted that the main reason the land in Hampton Roads is sinking faster than in many

other coastal areas is aquifer withdrawals.

To understand the theory, it first helps to know a little about aquifers. Basically, they're layers of rock, sand or other sediment that are saturated with water. From countless rains and snowfalls, trillions and trillions of gallons have trickled into the sand beds of the Potomac aquifer, the deepest of several under coastal Virginia and the one into which HRSD proposes to inject. Water samples from deep in the aquifer have been estimated as old as 40,000 years.

State officials have calculated that roughly 150 million gallons a day are being drawn in Virginia from the aquifer, which stretches from New Jersey to the North Carolina-South Carolina line.

The heaviest withdrawals in Virginia are in West Point and Franklin, where paper mills have long operated. Combined, the plants take roughly 30 million gallons a day, and on U.S. Geological Survey maps of groundwater decreases, they stand out as red centers in a sea of blue.

Though most of the water is pulled from porous layers of sand and shell fragments, the aquifer system's more dense clay layers are affected most because they compress much more easily as water pressure drops. That compaction is the biggest factor in subsidence across the southern Chesapeake Bay region, according to a Geological Survey report in 2013. It showed the land sinking at rates ranging from 1.1 to 4.8 millimeters a year over a seven-decade stretch ending in 2011.

When the subsidence is combined with rising ocean waters, the region's relative sea-level rise has been adding up to an average of about 4 millimeters a year, the report said. Extended over a century, that works out to nearly 16 inches. Global warming could accelerate the pace, some scientists have warned.

All this puts Hampton Roads behind only one other U.S. coastal community, New Orleans, when it comes to waterfront investments at risk. No wonder the Navy and other big landowners in the region have been raising concerns.

How much HRSD's proposal can help with the subsidence piece of the problem is unclear. For one thing, it's planning to inject between 100 million and 120 million gallons a day into the aquifer—less than the current rate of withdrawals in Virginia.

While some surface water makes its way naturally into the aquifer, it may not be enough to close the gap. Plus, studies indicate that subsidence has a momentum that can continue long after the withdrawals that caused it end. And part of this region's subsidence is attributed to the last ice age, which ended more than 10,000 years ago. The effects of those glacial movements likely will linger for millennia.

The best-case scenario for HRSD's proposal may be to slow the sinking of the land, said Jack Eggleston, the lead author of the Geological Sur-

“The thing that they're going to have to overcome and that's going to be the most difficult is public perception.”

Robert Burnley, a former director of Virginia's Department of Environmental Quality

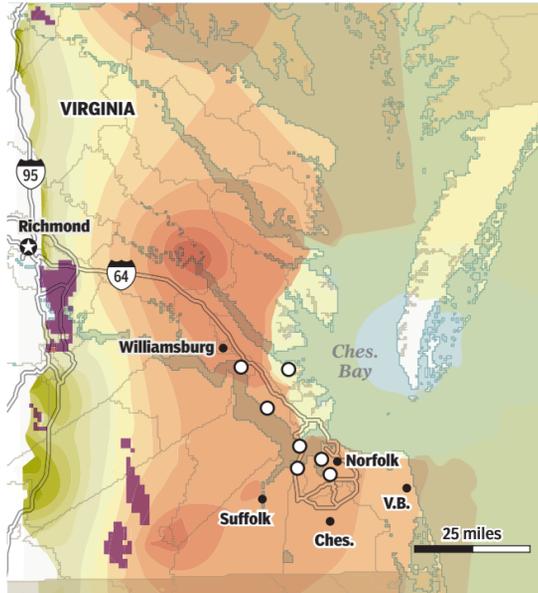
AN AQUIFER REFRESHED?

The Hampton Roads Sanitation District has proposed treating wastewater to drinking-water standards at as many as seven of its plants and then injecting it into the region's deepest groundwater source, the Potomac aquifer. HRSD says the proposal would reduce the rapid depletion of the aquifer and, by doing so, help slow land subsidence.

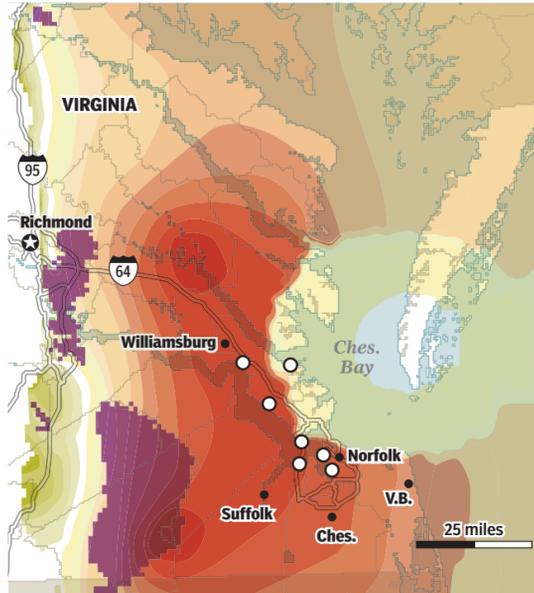
The agency says a computer model shows a dramatic effect on water pressures and levels within the aquifer. Here's how that change would play out across the region.



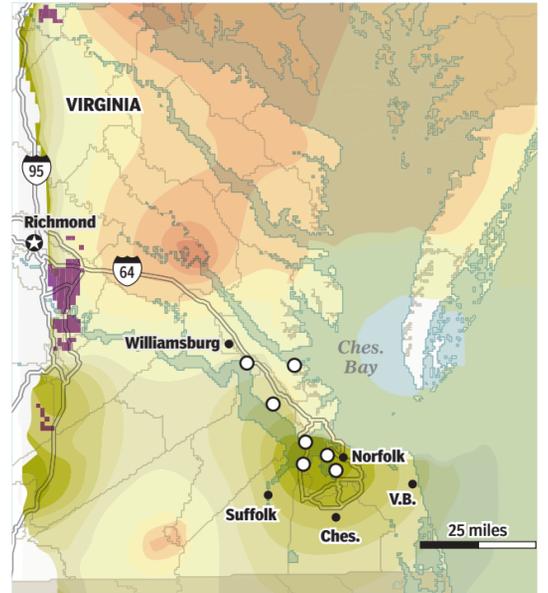
Water pressures/levels within the Potomac aquifer, 2014



Projected water pressures/levels in 50 years without aquifer replenishment*



Projected water pressures/levels in 50 years with aquifer replenishment*



* Scenario assumes current withdrawals will continue unchanged.

SOURCES: Aquaveo LLC, Virginia Department of Environmental Quality, Hampton Roads Sanitation District

LISA MERKLIN | THE VIRGINIAN-PILOT

vey report. Still, he said, with subsidence accounting for more than half of the region's relative sea-level rise, that could be a significant benefit.

Other benefits would be easier to measure.

If they can accept where the treated water came from, current groundwater users would see plenty of gains.

Many of them, including rural homeowners, face the prospects of having to deepen wells or drill new ones if groundwater levels continue to drop.

And the largest users – the roughly 175 that need state permits because they pull more than 300,000 gallons a month – have been told by state regulators in the past year to brace for reductions. Already, two of them – James City County and the WestRock Co. paper plant in West Point – face limits below the amounts they're now taking. Government officials

The sanitation agency wants to assess groundwater users fees to recover the \$20 million to \$40 million a year it would cost to operate and maintain the new equipment that would be required. There's no provision under state law for charging those users. And some are sure to object to changing that.

have said the limitations could thwart residential development in some areas and are making it harder for industries to expand or locate in the region.

There's also concern that as the aquifer is drawn down, it's becoming more vulnerable to saltwater wedging in from the sea. That's happened in other coastal areas where groundwater was heavily tapped, ruining wells and forcing communities to turn elsewhere for fresh water.

The HRSD proposal promises to help lift many of those clouds, and Henifin said the agency believes it's only fair that groundwater users chip in. He wants to assess them fees to recover the \$20 million to \$40 million a year it would cost to operate and maintain the new equipment that would be required.

There's no provision under state law for charging groundwater users. And some are sure to object to changing that.

Still, Andrea Wortzel, a Richmond lawyer who coordinates a group of large users called Mission H2O, said they'd welcome an invitation to discuss how to perpetuate the groundwater supply: "Our members are very interested in looking for solutions."

Environmental groups also see the potential.

The HRSD proposal could cause "quite a dramatic improvement" in the water quality of rivers, said Marjorie

Mayfield Jackson, executive director of the Elizabeth River Project. She said the cuts in surface discharges from HRSD treatment plants could strengthen the case for opening parts of the watershed, including sections of the Lafayette River in Norfolk, to oyster harvesting. Oyster populations have been rebounding, but the state Health Department bans their harvest throughout that watershed.

Taking away the river discharges would mean much less nitrogen and phosphorus going into the lower Chesapeake Bay. So localities facing expensive federal requirements to cut runoff of those pollutants might be able to gain a reprieve, said Whitney Katchmark, who oversees water resources issues for the Hampton Roads Planning District Commission.

With so much at stake, Henifin said, HRSD is going to great lengths to get things right.

Over the past several months, he and other staffers at the state-chartered agency have held briefings with scores of elected officials, regulators, planners, environmentalists and large water users. They've spent about \$400,000 on a study and computer modeling of the aquifer and gathered information on every wastewater-reuse and aquifer-injection system they could find.

They didn't have to go far, in some cases.

Chesapeake has put a net 2.8 billion gallons of fresh surface water into the Potomac aquifer since 1989. "We're essentially using it as a really large underground storage tank" that's tapped in times of extraordinary demand, said David Jurgens, the city's utilities director. This "aquifer storage and recovery" facility is the largest of its kind in the mid-Atlantic.

Jurgens said the only significant hiccups came early on, when the water that Chesapeake put in didn't closely enough match the water already in the aquifer at the injection site. That caused a chemical reaction that resulted in elevated levels of manganese in water being drawn back out. A pH adjustment in the injected water corrected that.

"Getting the chemistry right" in the water it injects will be crucial, Henifin said. Salt levels in the aquifer will vary, for example, depending upon how deep and where the injection wells are drilled. A mismatch between the water that goes in and the water already around the injection well could cause it to clog irreparably.

With as many as 10 injection wells per treatment plant, it could become an expensive problem to manage.

That's one of the reasons why HRSD is taking a "stair-step" approach, Henifin said.

The next significant step, beginning as early as May, will be "room-sized" pilot tests at its York County plant of the two processes the agency is considering adding to its treatment chain. One is known as reverse osmosis. The other relies on activated carbon. Both processes will employ ultraviolet light in their cleaning arsenals.

"We'll run parallel processes to prove that they can reliably and effectively exceed drink-



“We'll ... prove that they can reliably and effectively exceed drinking-water standards. I'll be drinking it.”

Ted Henifin, general manager of HRSD

ing-water standards," Henifin said.

"I'll be drinking it," he insisted.

Assuming those tests go well, the next step would be the drilling in 2017 or 2018 of a single injection well, likely at the plant in northern Suffolk. As many as 3 million gallons a day of wastewater would then be treated to drinking-water standards and pumped deep into the ground.

If that demonstration succeeds and it gets the necessary state and federal OKs, the agency then would phase in either six or seven plants over about a decade ending in 2030. The \$1 billion price tag that

HRSD estimates for the entire project has raised eyebrows, Henifin conceded. But the agency already had forecast that toughening environmental standards would require it to spend \$4.4 billion for capital improvements over the next 20 years. So "it just takes a little creative rearranging of things to absorb a billion dollars and figure out the right place to put it."

Whether it goes forward with the project or not, Henifin said, HRSD's 460,000 ratepayers in 17 cities and counties will face higher bills. He predicts residential rates will go from an average of about \$30 a month to \$70 a month by 2030.

HRSD envisions the aquifer-replenishment project becoming its solution for the bay cleanup mandate, which requires it to sharply cut nitrogen and phosphorus discharges and which Henifin suspects could be toughened further. He said that if it moves forward with the proposal, HRSD likely will ask federal officials to push back deadlines for another expensive mandate – to eliminate occasional sewer overflows during periods of heavy rain. Correcting that problem will have a negligible environmental benefit, he said.

Persuading regulators to show some flexibility may be the easy part. Convincing everyday folks that the time has come for a radical solution to water problems could be much harder.

HRSD tentatively is planning meetings across the region in 2017 at which the public will be invited to comment on its proposal. Other comment periods likely will follow.

An outcry from groundwater users could get politicians' backs up and put HRSD's proposal in jeopardy.

Henifin is optimistic it won't come to that:

"The technology and the plan we've got is great. It would be just a shame to lose this opportunity to do the right thing."

Dave Mayfield, 757-446-2341, dave.mayfield@pilotonline.com

OATH | An "X" or a squiggle in place of a signature meets requirements, state election officials say

Continued from Page 1

originally written by the GOP.

Saturday's development comes after The Pilot learned late last week that there was a loophole.

The form must be filled out to get a GOP ballot – no exceptions. But scribbling something as simple as a jagged line or an "X" in place of the signature and printed name on the half-page form can be enough to meet the requirements, state election officials said.

Virginia does not register voters by party and allows anyone to participate in any primary election. Republican officials had previously said the oath was intended to prevent Democrats from crossing over and helping to select their preferred nominee.

Democrats have no such requirement.

The pledges have already been included in absentee ballots sent in advance of the primary. However, the statements are not part of the ballot itself and could be discarded.

Martin Mash, spokesman for the state Board of Election, said Saturday the agency has been alerted to the party's action and "we are in the process of determining the most appropriate way to do this."

Opponents of the oath, including supporters of GOP front-runner Donald Trump, unsuccessfully tried to block the pledge in federal court. They argued it would keep away black Trump supporters who traditionally vote Democratic and wouldn't want to risk being ostracized by publicly signing a statement declaring they're Republicans.

However, what is acceptable self-identification – considering that a voter's penmanship can range from clear to indecipherable – can't be judged by a person's ability to write legibly, officials said.

When asked last week if it's acceptable to draw a simple line for a signature and jot "XX" for a printed name, without protesting the oath form itself, both Mash and Virginia Department of Elections attorney Martha Brissette agreed it was.

"If you had an X and a squiggle,

Republican officials had previously said the oath was intended to prevent Democrats from crossing over and helping to select their preferred nominee.

there's no way you could determine the intent," Mash said.

"So you have to assume that the voter was being sincere in what they were doing. As opposed to if the voter wrote in there a profane message – you know what I mean? I think those are the instances that might call attention. But if you're a voter and you don't ask for assistance. And you put an X on there and a straight line ... and it appears it's the best you can do and there's no way to know either way, then that shouldn't be a barrier to counting

the ballot."

Mash said denying such a form at the polls would be a problem. "What's so difficult about this is a lot of this goes to intent," he said. "It's so hard to crawl in somebody's head and figure out whether they were doing the best they could by signing an 'X' or whether they were intentionally trying to obstruct the purpose of the document."

Brissette noted there's "accepted principle" in state law that an "X" is sufficient for a signature.

John Findlay, executive director of the state GOP, said Friday he had not known the election officials would accept an "X" or drawn line for the printed name.

The Rev. Stephen Parson, one of three black ministers who unsuccessfully sued the Election Board in an attempt to quash the party loyalty statement, said many people would be willing to participate in the primary if the looser identification is allowed.

"If people know about this, it would at least be a solution when they can go and vote," he said. "We need this can of worms opened up."

Several South Hampton Roads city voter registrars said last week they hadn't considered what standards would be required when checking signatures on the Republican oath.

Chesapeake registrar Mary Lynn Pinkerman said she would likely accept whatever a voter wrote. "We try to help people vote, not prevent them from voting," she said.

Bill Bartel, 757-446-2398, bill.bartel@pilotonline.com