Mail Voting Can Decrease Ballot Roll-Off

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Abstract

Throughout the United States, an increasing number of states are adopting laws that make it easier for voters to cast their ballots by mail. While research has addressed the potential effects of these changes on turnout, little attention has been paid to other aspects of voter behavior. I argue that mail voting decreases ballot roll-off — the tendency of voters to leave some options on the ballot blank. Roll-off is a key feature of American elections: it is common for more than 10% of voters to roll off. Mail voting affords voters more time to complete the ballot and to seek out information about races on the ballot, which may decrease roll-off rates. I test this theory using a dataset of Washington State election results from 1996 to 2012, during which time the state staggered the implementation of mandatory mail voting county-by-county. I find that implementation of mandatory vote-by-mail increased ballot completion across a wide variety of down-ballot races. The results endure even after several mail elections. These findings shed light on another behavioral consequence of a new trend in election administration.

Keywords: roll-off; vote-by-mail; convenience voting; election administration; voter knowledge

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People like voting by mail. Most importantly, a voter spreads the ballot out across the kitchen table and really studies the issues and candidates.

— Sam Reed, former Washington Secretary of State

1 Introduction

A "quiet revolution" of election reforms is supplanting traditional Election Day voting (Gronke 2013). In many states, voters no longer need to go to their local polling place on Election Day to cast a ballot, and in a small but growing number of states, that option is gone completely. Three states — Oregon, Washington, and Colorado — have done away with traditional voting in favor of elections conducted entirely by mail. In other states, a majority of voters choose to submit their ballots by mail. These so-called "convenience voting" reforms are likely to continue: A recent report released by the bipartisan Presidential Commission on Election Administration recommended expanding nontraditional modes of voting (Bauer & Ginsburg 2014). Advocates herald these changes as a potential solution to America's chronically low levels of electoral participation. Nearly all of the research into such programs has focused on how they impact turnout (Gronke, Galanes-Rosenbaum, Miller & Toffey 2008), but significantly less attention has been paid to other participatory consequences of these reforms.

In this paper, I argue that mail voting can increase political participation through another mechanism: by decreasing ballot roll-off, or the "tendency of the electorate to vote for 'prestige' offices but not for lower offices on the same ballot" (Burnham 1965, p. 9). Roll-off is widespread in American elections. I show that it is not uncommon for more than 10% of voters to abstain in some down-ballot races, shrinking the effective size of the electorate substantially. Furthermore, the high rate of roll-off has important practical and normative

implications for democratic study. While voters are usually best informed about races for president, governor, and senate, much governing in the United States is done by lower-level state and local officials. When voters roll-off, government is less representative of the electorate as a whole. And systematic differences in roll-off patterns among demographic groups also skew the electorate beyond differential turnout. For example, a substantial body of research shows that black voters are more likely to exhibit roll-off than white voters (Herron & Sekhon 2005, Vanderleeuw & Engstrom 1987, Tomz & Van Houweling 2003). Taking roll-off into account is thus crucial for fully understanding the representativeness of the electorate.

Roll-off is attributed in large part to a lack of knowledge about particular races — voters tend to skip races they do not know much about. Mail voting could ameliorate a lack of voter information by prompting voters to become informed about the candidates and issues for which they are asked to vote.[1] An increase in voter knowledge should manifest as a decrease in roll-off.

To test the argument, I employ data from Washington State — which implemented a mandatory mail voting system county-by-county over the course of two decades. I exploit this spatial and temporal variation using a difference-in-differences design to estimate the causal impact of switching to an all-mail voting regime. By analyzing county-level election results spanning from 1996 to 2012, I estimate that mail voting decreases roll-off in a wide variety of down-ballot statewide races. The point estimate of the effect spans from 0.5 to 1.2 percentage point decreases in roll-off, depending on the office considered. This effect is substantively significant. In statewide races, that difference translates to over 20,000 votes.

[1] Advocates of mail voting have argued that it leads to a better-informed electorate. For example, the Washington Secretary of State Office claims that mail voting "increases turnout, simplifies the elections process, and promotes an informed citizenry" (Washington Secretary of State 2007).

In Washington, which recently had a governor's race decided by fewer than 200 votes, that small increase in participation could prove decisive.[2]

While I focus my analysis on Washington, the implications extend to other states. This analysis is directly applicable to the other vote-by-mail states — Oregon and Colorado — but it also brings fresh evidence to bear on understanding the growing use of mail voting in other states. In 27 states and Washington, D.C., voters do not need an excuse to cast an absentee ballot (National Conference of State Legislatures 2014). In California, for example, 51% of ballots in 2012 and 60% of ballots in 2014 were cast by mail. While voters in no-excuse absentee states choose to opt-in to mail voting, the differences between mail and polling-place voting that I report here are likely to exist in other states as well because the psychological underpinning of the effect does not depend on being forced to vote by mail.

Substantively, my findings bolster the robust literature arguing that election administration can have an impact on voting behavior and suggest a mechanism for increased participation in state and local government. Moreover, they provide another example of the burgeoning literature showing that convenience voting reforms can impact elections.[3] Finally, they establish that studies of turnout do not fully capture the participatory consequences of election administration.

[2]The winner in the 2004 gubernatorial election, Christina Gregoire, edged out opponent Dino Rossi by a margin of 1,373,361 votes to 1,373,228. Results reported at `http://www.sos.wa.gov/elections/2004gov_race.aspx`. Last accessed December 1, 2014.

[3]For example, Meredith & Malhotra (2011) show that mail voters may vote differently from polling place voters because they are not exposed to information revealed in the final run-up to Election Day.

2 Voting Costs, Roll-Off, and Convenience Reforms

Traditionally, only voters who had a documented justification could cast an absentee ballot. However, no-excuse absentee voting has become increasingly common, with 27 states and the District of Columbia now allowing anyone to request an absentee ballot for any reason. Additionally, seven states and D.C. allow voters to register for permanent absentee status. As of 2014, an additional three states — Colorado, Oregon, and Washington — conduct their elections solely by mail, without the option of voting at a traditional polling place (National Conference of State Legislatures 2014). Permanent absentee voters and voters in all-mail jurisdictions are automatically sent a ballot for each election, which they can fill out at home at their convenience.

Proponents of mail voting argue that mailing ballots reduces the cost of voting, and thus increases the likelihood of voting. This prediction follows a rational choice model of voting, in which citizens decide whether to vote by weighing the personal costs against the benefits that would accrue from voting (Riker & Ordeshook 1968, Downs 1957). Making voting less costly, therefore, should tip the balance in favor of voting for citizens whose costs just outweigh the benefits of voting. For absentee voters or voters in all-mail jurisdictions, the ballot is mailed to their homes, which not only provides a reminder to vote, but also saves them the cost of traveling to their polling place. The theoretical prediction, therefore, is that liberalized absentee and mail voting laws should increase turnout.

Empirical investigations have found mixed results regarding turnout. Southwell & Buchett (2000) examine several all-mail elections in Oregon, and report a 10% increase in turnout over traditional elections, after controlling for election type. However, subsequent studies have found a less modest or even negative effect on turnout. Gronke & Miller (2012) attempted to replicate Southwell and Burchett's findings, but instead found only a small

turnout increase from all-mail elections. They also found evidence of a "novelty effect": the increase in turnout decayed in subsequent elections as the novelty wore off. Other estimates of the impact of all-mail elections on overall turnout have varied, ranging from a decrease in participation (Bergman, Yates & Ginnold 2009, Kousser & Mullin 2007) to a substantial increase (Richey 2008). Other researchers have argued that convenience reforms' turnout increases may be concentrated among already over-represented groups, cutting against the conventional wisdom that lowering voting barriers improves representation (Berinsky 2005, Berinsky, Burns & Traugott 2001). Importantly for the current study, Gerber, Huber & Hill (2013) examine how turnout varied in Washington State after counties implemented all-mail elections. They find an increase in turnout of 2 to 4 percentage points, and find that the all-mail elections encourage participation by periodic voters.

Despite the research on aggregate turnout, the question of roll-off is relatively untouched in studies of mail voting. Why would a citizen who has already invested time in voting skip some races? Even if voting is a costly activity, by the time a voter starts filling out her ballot, she has already borne the majority of the cost.

A primary explanation is that voters are uncomfortable making decisions in elections that they know little about, so instead of choosing randomly, they selectively abstain. Theoretical work predicts that political information is a key determinant of both turnout and roll-off. Feddersen & Pesendorfer (1996) demonstrate that poorly informed voters without strong preferences over their options are strictly better off abstaining than voting, and that this result can lead to high levels of abstention in the population. Wattenberg, McAllister & Salvanto (2000) advance a theory of roll-off whereby voters only vote when they feel they can make an informed choice (much like a high school student will only answer an SAT question about which she feels reasonably confident). Using survey data, they argue that several measures of political information predict roll-off. The information

theory is also consistent with the observation that roll-off rates are high in relatively obscure races, such as judicial retention elections (Hall & Aspin 1987), and very low in high-profile elections. In presidential elections and other high-profile races, information acquisition is low-cost due to the prominence of the race in news media. On the other hand, in smaller races, such as U.S. House races, obscure statewide races, and local races, many voters simply do not have the incentive to seek out political information.

Another line of research has pointed to institutional features of voting that could affect roll-off. In general, voting technology can have a substantial impact on the translation of preferences to votes (Ansolabehere & Stewart 2005). The introduction of new voting technology has been associated with higher rates of invalid votes, suggesting that voters who are accustomed to a particular method of voting become confused with new procedures (Nichols & Strizek 1995, Asher, Shussler & Rosenfield 1982). Other researchers have argued that ballot layout can affect the roll-off level as well. In particular, ballots designed with party columns, as opposed to office blocks, encourage straight-ticket voting because it is easier for voters to locate candidates of their own party using this format (Walker 1966, Campbell, Converse, Miller & Stokes 1960). This may translate into lower roll-off because voters do not have to undertake the cost of voting in each race separately. Finally, a race's placement on the ballot may impact the roll-off rate. Voters can exhibit a high roll-off rate even in a high-profile election if the race is placed low on the ballot, an effect that appears to disproportionately impacts black voters (Darcy & Schneider 1989).

Under either explanation — voter information and ballot design — mail voting could decrease roll-off. The information theory would predict that giving voters access to greater information while making their decisions would decrease roll-off. Advocates of mail voting have made the assertion that the extra time afforded to voters when they have an absentee

ballot at home prompts them to learn about issues and candidates.[4] Mail voters have the luxury of using the ballot as a prompt to seek out new information before making their decisions. In Washington, for instance, an Internet search for the candidates would likely turn up the online voter's guide, which has short biographies of each of the candidates.

On the other hand, polling-place voters have a significant time and resource constraint compared to votes filling out an absentee ballot at home. Once voters enter a voting booth, there is no opportunity to update their knowledge about candidates or issues. If voting is like taking a test, then absentee voting is like taking an open-book test.[5] In fact, there is empirical evidence that Google searches for election information are correlated with lower roll-off (Reilly, Richey & Taylor 2012), supporting the idea that voters who seek out information participate at a higher rate.

If the cause of roll-off is confusion about ballot design, giving voters more time to examine and fill out the ballot may encourage them to vote in races that they otherwise would ignore. Even if the mental effort required to navigate the ballot does not change, voters can spread that effort out over a long period of time if they vote by mail.

In either case, this reasoning implies that voters who cast absentee ballots will have a lower roll-off rate than polling-place voters. But the extant literature is not conclusive on whether vote-by-mail has an effect on roll-off, and there are significant limitations to the studies examining this question. Kousser & Mullin (2007) examine a natural experiment in

[4]Sam Reed, the Secretary of State in Washington who oversaw much of the state's transition to vote by mail, has been quoted arguing this point. The quote at the beginning of this paper comes from a report released by his office that described the history of vote-by-mail in Washington up until 2007 and advocated for its continue expansion (Washington Secretary of State 2007).

[5]This argument uses the same logic that justifies mailing sample ballots to voters before Election Day. Not only does the sample ballot serve as a reminder to vote that increases turnout (Wolfinger, Highton & Mullin 2005), it also allows voters to preview the decisions they will have to make in the voting booth.

California that forced voters in small precincts to vote by mail. Using matching methods, they find that in 2000, mail-only precincts actually had a 1.0 to 1.5% lower probability of casting a vote for down-ballot propositions than in-person precincts, counter to expectations, but they fail to find a similar effect in 2002. However, this study's small scope — two election years and small precincts — may limit the generalizability of its findings. A second study examines individual ballot images from Los Angeles County in the 1992 general election, and finds that roll-off in several ballot propositions was indistinguishable between in-person voters and voluntary absentee voters (Dubin & Kaslow 1996). But the observational nature of the study makes it difficult to identify causal effects. The decision to vote by absentee ballot in the election they examined was voluntary, and it is likely that people who opted to vote absentee differ systematically from polling-place voters in ways that are correlated with their down-ballot participation.

Hanmer & Traugott (2004) analyze Oregon's switch to vote-by-mail between the 1996 and 2000 presidential elections by examining ballots from the largest county in Oregon. The authors expected to observe higher roll-off in the 1996 election, in which vote-by-mail was voluntary, than in the 2000 elections, in which the entire election was conducted by mail. However, they find little evidence that vote-by-mail decreases the already-low level of roll-off in Oregon. This study rules out time-invariant effects that could affect roll-off, but the before-after design is sensitive to differences between the elections they examine. In particular, the 2000 election was more competitive than the 1996 election, so it is likely that more low-information "peripheral" voters participated in 2000. These peripheral voters probably have lower levels of political knowledge, which means they are more likely to roll-off.

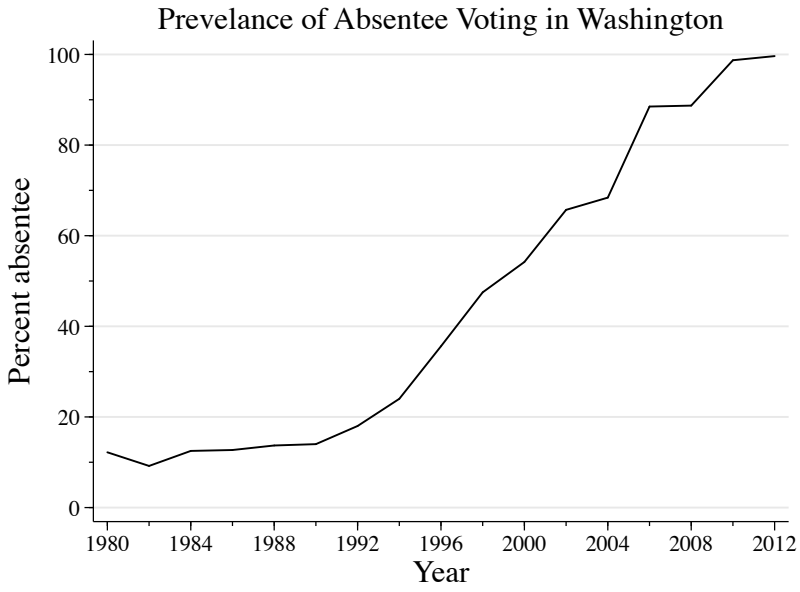

Figure 1: Percentage of votes cast by absentee ballot in Washington. Source: Washington Secretary of State Office.

2.1 Mail Voting in Washington State

Washington State provides a fertile testing ground for theories about the electoral impact of voting by mail. Washington has a long history of liberal use of mail and absentee voting. In 1974, the state legislature authorized no-excuse absentee voting — where anyone could choose to vote by mail, for any reason — and in 1993 Washington authorized permanent absentee voting. Vote-by-mail was voluntarily adopted by voters throughout the state rapidly: in 1980, just 12.5% of votes were cast by absentee ballot; by 2000, over half of ballots cast were absentee. Figure 1 shows the growth of absentee voting in Washington from 1980 through 2012.

Until relatively recently, voters chose whether to vote by mail or to vote in person.

Over the past two decades, though, Washington has converted to an all-mail election state, making it the second (after Oregon) to do away with in-person polling places. Unlike Oregon, which adopted all-mail elections all at once in 1998, Washington staggered its implementation of all-mail elections over several decades. In 1967, county-level election administrators were given the authority to hold all-mail elections in precincts with fewer than 100 voters, and the cutoff was later increased to 200 voters per precinct. By 2002, five rural counties were holding all-mail elections by drawing all of the precincts below the threshold. That number increased dramatically after 2005, when the legislature passed a law allowing county election administrators to adopt all-mail elections regardless of precinct size. In the 2006 midterm election, there were only five counties that did not hold their elections completely by mail, and by the 2012 presidential election all but one county had switched to all-mail elections (Washington Secretary of State 2007, Gerber, Huber & Hill 2013). Sample ballots for several counties and years are included in Appendix C as an example of what Washington voters experience when they vote by mail. Notably, Washington voters are presented with a large number of races — on the order of two to three dozen — on each ballot. This observation gives further credence to the idea that vote-by-mail may decrease roll-off, first because voters have a wide variety of races on which to educate themselves, and second because the text on the ballots is cramped, meaning there may be a high mental cost associated with navigating the entire ballot. Voters filling out the ballot at home can take the time to figure the ballot out and seek out new information.

3 Data and Methods

3.1 Election Results Data

I collected county-level vote return data from the Washington Secretary of State's election results website for each even-year election from 1996 through 2010[6] and from the Harvard Election Data Archive for 2012 (Ansolabehere, Palmer & Lee 2014). I analyze vote data in races for governor, lieutenant governor, secretary of state, state auditor, commissioner of public lands, and the U.S. House of Representatives. These races vary significantly in the attention paid to them — from governor, which generally receives a high level of media coverage, to commissioner of public lands, a relatively obscure position. Other statewide races, such as attorney general, were excluded because they were not contested in each year in the dataset. House races were held every two years and all other races were held on presidential election years. The source data report the number of total ballots cast in each county as well as the total number of votes cast in each race on the ballot. This allows me to identify the roll-off rate for each county and in each race.[7]

Using aggregate-level election return data is possibly the only feasible way to study roll-off. Survey data — asking voters which races they cast votes in — is likely to be unreliable. If a voter knows so little about a race that she chooses to abstain, she is unlikely to remember whether or not she voted in that race when asked in a survey. Moreover, responses are prone to social desirability bias (Holbrook & Krosnick 2010). Thus, surveys

[6]Available online at `https://wei.sos.wa.gov/agency/osos/en/press_and_research/PreviousElections/Pages/default.aspx`. Last accessed on July 17, 2014.

[7]This feature of the data means I do not have to assume that the number of votes cast for the top-of-the-ballot race (e.g., president) represents the total number of ballots cast. This allows me to use president as something of a placebo test, since there is a high level of knowledge about the presidential race with or without mail voting.

will likely underestimate the true level of roll-off. Examining individual ballot images — as opposed to aggregate counts — could be preferable in theory, but it would be difficult to obtain and analyze a large number of ballot images over a significant time span. Moreover, conclusions based on ballot images could be threatened by selection effects if voters opt into absentee voting.

I define my dependent variable — roll-off in a given race R — as the proportion of voters who cast a ballot in the election, but do not cast a valid vote in R. For example, if 100 voters cast a ballot, but only 90 valid votes are cast for secretary of state, there is a 10% roll-off rate for that race. In counties that contain multiple congressional districts, I sum the total number of votes for all congressional districts in that county.[8]

In reality, this operationalization measures both types of invalid, or "residual" votes: undervotes, or roll-off, where voters do not vote for enough candidates in a given race, and overvotes, where they cast votes for too many candidates. In either case, the ballot would be counted in the number of total ballots cast, but the vote in the race with a residual vote would not be counted — and would thus contribute to my measure of roll-off. However, nearly all of the residual vote measured in my data set is attributable to roll-off, not overvoting. In 2012, 25 Washington counties explicitly reported the number of

[8]In 2012, U.S. Representative Jay Inslee of Washington's First District resigned to run for governor. By Washington law, voters were required to elect a replacement to serve in the interim period between Election Day and when the next Congress would be sworn in, even though this representative would only serve for a month. Additionally complicating matters is the fact that redistricting drastically changed the First District's boundaries, starting with the Congress inaugurated in 2013. Thus, voters who live within in the pre-2013 boundaries of the First District were asked to vote in both the special election to replace Inslee as well as in the general election for their representative (going by the redistricted boundaries). I ignore this special election in computing the roll-off rate in King County in 2012. The same candidates ran for both the general election and the special election in the First District, so it is unlikely that this anomalous situation would have impacted roll-off.

undervotes and overvotes. Of nearly 1,000,000 total residual votes, only about 6,700 were overvotes. Further, the vast majority of those overvotes — more than 5,000 — were cast in the presidential race, an office that is not expected to experience a significant roll-off rate in any event. Thus, in the following analysis I refer to roll-off instead of residual votes in general.[9]

The primary explanatory variable is a dummy variable indicating whether an election in a given county was conducted entirely by mail. I include a control for the turnout rate in each election, by county, defined as the portion of registered voters who cast a ballot in a given election. This variable captures the fact that roll-off is related to voter information. On average, elections with higher turnout are likely to have more marginal voters who are less politically aware. Because the level of information is negatively correlated with roll-off, I expect more roll-off when turnout is higher.

My dataset contains competitive elections in all 39 counties in Washington and a total of 9 election years for House races and 5 election years for all other races, with each observation representing a county-year. There are, however, several gaps in the data. Observations for Douglas County in 2000 and 2004 were excluded from analysis due to apparent inaccuracies in the source data. Specifically, the reported total number of ballots cast was less than the total number of votes for several races. Therefore, either the total number of ballots cast is under-reported or the number of votes for those offices is over-reported, but there is no way to verify which set of numbers is accurate. An additional two observations, representing King County (Seattle) in 1998 and 2000, are excluded from analyses involving U.S. House

[9]While the 2012 data come from an election in which all counties voted by mail, it is hard to imagine that vote-by-mail would have decreased overvotes so much as to significantly contribute to the estimates I report below. But even if it were the case that a lower rate of overvotes were driving my results, this would be taken as a reason in favor of vote-by-mail elections. Roll-off is more common than overvotes, but the normative concerns about roll-off apply equally to overvotes.

Mean Roll-off, by All-Mail Status

Office	Not All-Mail	All-Mail	Difference
President	1.655%	1.814%	0.159%
Governor	2.700	3.024	0.324
Lt. Governor	7.846	7.47	−0.376
Secretary of State	8.154	8.015	−0.139
State Auditor	10.022	9.471	−0.551
Comm. of Public Lands	8.283	8.229	−0.054
U.S. House	4.487	3.987	−0.500

Table 1: Average roll-off in each type of race across all county-year observations.

races because there was an uncompetitive race in those years. It makes little sense to analyze voters' decisions on whether to participate if they do not have a meaningful choice in the first place. In all, there are 347 observations for House races and 193 observations for presidential-year races.

Figure 2 shows the roll-off pattern in each type of race across all observations in the dataset. As expected, the roll-off rate tends to be lower in races for president and governor and greater in lower-salience elections. For example, the median roll-off rate in gubernatorial races is 2.7%, while it is 9.6% in state auditor races. Additionally, Table 1 shows the average roll-off for each office in the dataset, by all-mail status. For all offices but president and governor, average roll-off is lower in all-mail counties than in counties with polling places. In the next section, I refine my analysis to show that a county conducting elections entirely by mail causes roll-off to decrease.

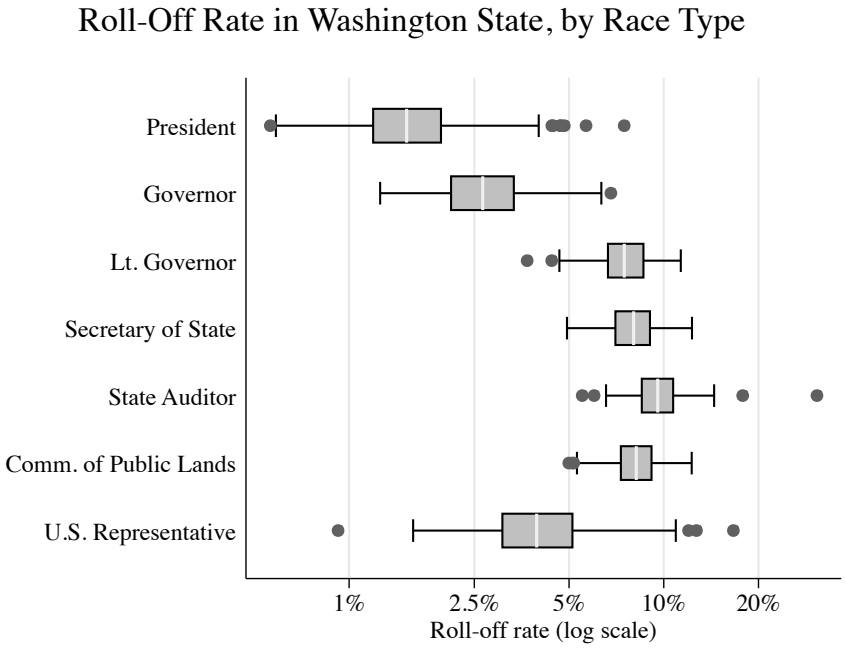

Figure 2: Roll-off rate in each type of race from 1996-2012. Each observation represents the roll-off rate in a given county-year pair. The white vertical line represents the median, the edges of the box extend to 25th and 75th percentiles, the whiskers extend to the greatest value within 1.5 times the interquartile range from nearest quartile, and points beyond the whiskers are outliers.

3.2 Identification Strategy

The staggered implementation of vote-by-mail allows me to estimate models that rule out spurious correlations caused either by time-invariant county-specific effects or by historical shocks that affect all counties equally. For example, suppose there were factors in a particular county that caused a low roll-off rate in every election, or suppose that voters across the state in 2004 were simply less interested than voters in 2000. By controlling for county-specific and year-specific effects, I can rule out those factors as threats to the internal validity of my conclusions. This difference-in-differences model thus compares the year-by-year change in roll-off in counties that switch to all-mail elections to the year-by-

year change in those that do not.

In the basic specification, I model county-level roll-off as a linear function of the county's vote-by-mail status and turnout. I also include fixed effects for counties and for election year. Formally, let $i = [1, N]$ index counties and $t = [1, T]$ index year. The model is specified as:

$$\mathrm{Y}_{it} = \alpha_t + \beta_1 \ \mathrm{VBM}_{it} + \beta_2 \mathrm{Turnout}_{it} + c_i + \epsilon_{it} \tag{1}$$

where Y_{it} denotes the roll-off rate, α_t is a year-specific intercept, and VBM_{it} is a dummy variable that equals one if an election in year t was all-mail in county i. c_i is an unobserved time-invariant county-specific effect and ϵ_{it} is the (white noise) county-year error term. In this specification, c_i represents an omitted variable that affects the roll-off rate in county i equally in all time periods. The coefficient β_1 is the average treatment effect on the treated (ATT) — that is, the change in roll-off caused by a county switching to all-mail elections, measured in percentage points. I expect to observe a negative value for β_1, consistent with vote-by-mail being associated with a lower roll-off rate. β_1 is identified if ϵ_{it} is uncorrelated with VBM_{it}.

I also estimate a second, slightly modified model that takes into account the prevalence of absentee voting before a county switched to vote-by-mail. As illustrated in Figure 1, absentee voting was common in many counties even before the switch to all-mail elections. The implementation of all-mail elections may have little effect on those voters who already voted absentee. Additionally, it is possible that the portion of voters in a county who vote by mail may have influenced county election administrators' decisions to switch to all-mail elections. To account for these possibilities, I follow the specification set out in Gerber, Huber & Hill (2013) by including an interaction term between VBM_{it} and the

county's average percentage of absentee voters in the previous two elections of the same type. This specification allows the treatment effect to vary with respect to the level of absentee voting. I expect the coefficient on the all-mail indicator variable to be less than zero and the coefficient on the interaction term to be positive. Those results would reflect the lower impact that switching to vote-by-mail is expected to have on the roll-off rate in counties with already-high levels of absentee voting.

A third specification investigates the persistence of the effects. It could be the case, for example, that a switch to vote-by-mail is accompanied by an ambitious voter education project that decreases roll-off, but this effect decays as voting by mail becomes commonplace and the voter education project declines. Without accounting for this "novelty effect" (Gronke & Miller 2012), the impact of vote-by-mail would be biased upward. To account for this possibility, I break up the vote-by-mail variable into three indicator variables: one for the first vote-by-mail election in that county; one for the second vote-by-mail election in that county; and one for the third or greater vote-by-mail election in that county. If there is a decaying effect of vote-by-mail, the magnitude of the coefficient on the variable representing the first vote-by-mail election would be greater than the magnitude of the coefficients on the indicators for the second and third vote-by-mail election. I conduct joint F-tests on the vote-by-mail coefficients to analyze whether the effect changes in subsequent elections after the introduction of vote-by-mail.

I estimate all models using fixed-effects regression.[10] I also weight the regressions by the average number of votes cast in each county over the time period in my data. This weighting scheme allows counties with more data (and thus less variance in the variables) to have a larger impact than counties with less data.[11] To account for heteroskedasticity

[10] I implement all models in Stata using `xtreg`.

[11] I implement the weights using the `aweight` option in Stata, which is specified formally as followed: let county-specific weight $w_i = \frac{1}{T}\sum_1^T TotalVotes_{it}$ and suppose the (unweighted) model

in the error terms, I report 95% confidence intervals derived from robust standard errors clustered by county.

3.3 Results: Mail Voting Decreases Roll-Off

The results of the basic specification are given in Table 2. As expected, the coefficient on the vote-by-mail dummy variable (i.e., the ATT) is negative and statistically significant in all the statewide races except for president. In statewide races, the magnitude of the effect is smallest in gubernatorial elections, where roll-off decreases by about 0.5 percentage points on average, and greatest in elections for secretary of state, where roll-off decreases by about 1.2 percentage points. This finding is consistent with the hypothesis that roll-off occurs more in low-salience elections that voters typically know little about. Examining Figure 3, which plots the coefficients and confidence intervals on mail voting, the pattern is clear: the races we would expect citizens to be less informed about have coefficients with larger magnitudes.

This aggregate effect could be substantively important in close races. A 1.2 percentage point higher participation rate in races for secretary of state translates to over 32,000 more votes, on average. Even in races for governor, a 0.6 percent increase in participation translates to over 17,000 votes, on average. The fact that the coefficient on all-mail voting is not significant in presidential elections is important, because there is less reason to expect a priori that there will be roll-off in these high-salience races.

The one outlier in these results is U.S. House, for which vote-by-mail appears to actually increase roll-off. To examine whether this finding is driven by off-year elections that do not

to be estimated is given by $Y_{it} = \beta X_{it} + \epsilon_{it}$. The weighted model is then given by $\sqrt{w_i}Y_{it} = \beta\sqrt{w_i}X_{it} + \sqrt{w_i}\epsilon_{it}$. (For presidential-year races, $T = 5$; for U.S. House races, $T = 9$.) This weighting scheme is appropriate when data contain averages, as is the case with my data (Gould 1999).

Effect of All-Mail Elections on Roll-Off

Office:	(1) President	(2) Governor	(3) Lt. Gov.	(4) Secretary of State	(5) State Auditor	(6) Comm. of Public Lands	(7) U.S. Rep.
All-Mail Election	-0.219	-0.505	-0.841	-1.203	-0.995	-0.980	1.270
	[-0.699 0.260]	[-0.897 -0.113]	[-1.335 -0.346]	[-1.643 -0.763]	[-1.463 -0.528]	[-1.999 0.039]	[0.236 2.303]
Turnout	0.104	0.062	0.018	-0.0371	-0.077	0.056	-0.019
	[-0.018 0.227]	[0.021 0.103]	[-0.090 0.126]	[-0.121 0.047]	[-0.191 0.037]	[-0.002 0.114]	[-0.109 0.071]
Observations	193	193	193	193	193	193	347
R-squared	0.456	0.641	0.426	0.631	0.331	0.498	0.345
Number of counties	39	39	39	39	39	39	39
Number of years	5	5	5	5	5	5	9
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 2: Dependent variable is roll-off rate, expressed as a percentage. Weighted fixed-effects regression estimates reported. Robust 95% confidence intervals, clustered by county, reported in brackets.

Effect of All-Mail Elections on Roll-Off, Controlling for Average Percentage of Votes Cast Absentee Before Switch to All-Mail

Office:	(1) President	(2) Governor	(3) Lt. Gov.	(4) Secretary of State	(5) State Auditor	(6) Comm. of Public Lands	(7) U.S. Rep.
All-Mail Election	-1.630	-0.688	-1.856	-2.994	-2.934	-4.843	-1.060
	[-3.192 -0.069]	[-1.965 0.589]	[-3.647 -0.065]	[-4.214 -1.774]	[-6.284 0.416]	[-7.011 -2.675]	[-4.016 1.895]
All-Mail × Average	0.022	0.003	0.016	0.028	0.031	0.061	0.033
Prior % Absentee	[-0.004 0.049]	[-0.014 0.020]	[-0.013 0.045]	[0.010 0.046]	[-0.019 0.080]	[0.026 0.096]	[-0.014 0.081]
Turnout	0.114	0.063	0.025	-0.025	-0.063	0.083	-0.005
	[-0.010 0.239]	[0.023 0.103]	[-0.081 0.131]	[-0.115 0.066]	[-0.161 0.034]	[0.019 0.147]	[-0.088 0.077]
Observations	193	193	193	193	193	193	347
R-squared	0.475	0.642	0.435	0.649	0.349	0.586	0.352
Number of counties	39	39	39	39	39	39	39
Number of years	5	5	5	5	5	5	9
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3: Dependent variable is roll-off rate, expressed as a percentage. Weighted fixed-effects regression estimates reported. Robust 95% confidence intervals, clustered by county, reported in brackets.

Persistence of Roll-Off Effects

Office:	(1) President	(2) Governor	(3) Lt. Gov.	(4) Secretary of State	(5) State Auditor	(6) Comm. of Public Lands	(7) U.S. Rep.
First All-Mail Election	-0.554 [-1.042 -0.067]	-0.532 [-0.993 -0.071]	-0.834 [-1.296 -0.371]	-1.337 [-1.798 -0.876]	-1.183 [-1.798 -0.568]	-1.273 [-2.046 -0.500]	1.847 [0.879 2.815]
Second All-Mail Election	-2.285 [-3.241 -1.329]	-0.527 [-1.402 0.348]	-0.528 [-1.765 0.708]	-1.664 [-2.615 -0.714]	-1.780 [-3.764 0.204]	-2.479 [-3.374 -1.585]	-0.811 [-1.861 0.239]
Third or More All-Mail Election	-3.068 [-4.321 -1.814]	-1.366 [-2.593 -0.139]	-1.941 [-3.625 -0.256]	-3.913 [-5.139 -2.687]	-4.200 [-6.952 -1.449]	-4.796 [-5.927 -3.665]	-2.296 [-4.082 -0.510]
Turnout	0.078 [-0.013 0.169]	0.062 [0.020 0.104]	0.022 [-0.087 0.132]	-0.042 [-0.129 0.045]	-0.086 [-0.203 0.032]	0.037 [-0.022 0.097]	-0.007 [-0.090 0.076]
Observations	193	193	193	193	193	193	347
R-squared	0.635	0.648	0.441	0.651	0.359	0.571	0.563
Number of Counties	39	39	39	39	39	39	39
Number of years	5	5	5	5	5	5	5
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
p-stat on F-test that effect of VBM does not change	0.001	0.010	0.001	< 0.001	0.003	< 0.001	0.001

Table 4: Dependent variable is roll-off rate, expressed as a percentage. Weighted fixed-effects regression estimates reported. Robust 95% confidence intervals, clustered by county, reported in brackets.

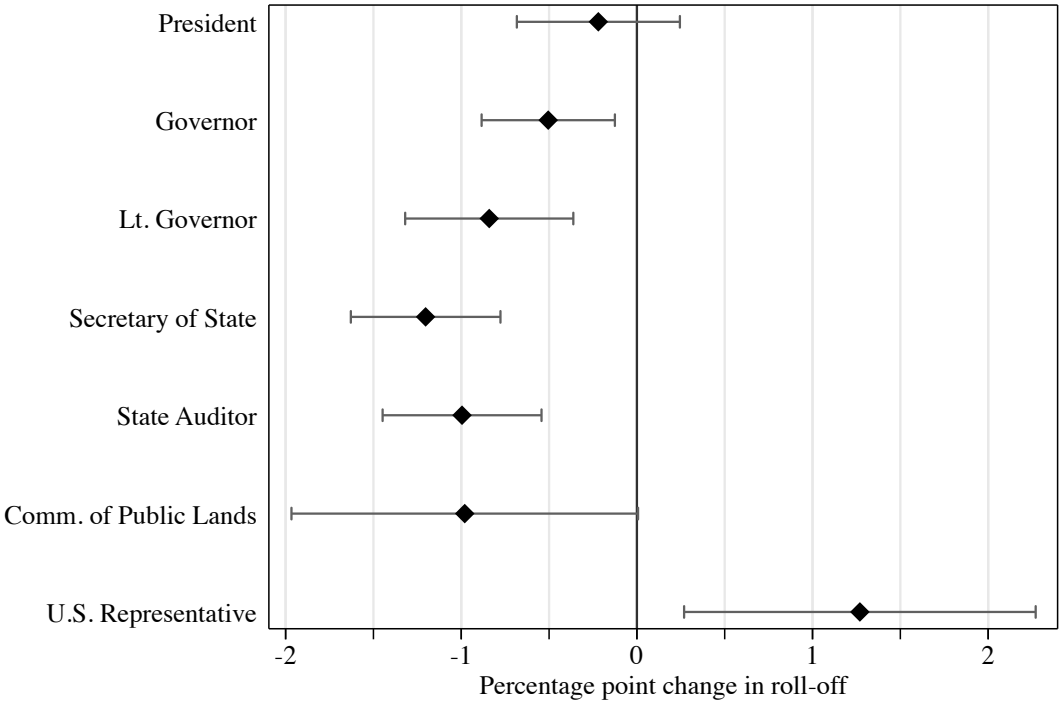

Figure 3: The estimated ATT of all-mail voting on roll-off. The lines correspond to 95% confidence intervals. Full results are reported in Table 2.

include the other races, I omitted off-year elections and re-estimated the model, including only presidential-year elections. Dropping off-year elections introduces greater uncertainty such that the coefficient is not statistically significant at conventional levels, but the sign is still positive ($\beta = 0.494$, S.E. $= 0.315$). This result runs counter to expectations, but House races likely have a weak link to the theory motivating the analysis. House elections are not as prominent as presidential, gubernatorial, and senate elections, but they are still federal elections and demand more attention than elections for other statewide offices.

Turn now to the second set of models, which account for the percentage of voters that cast absentee ballots prior to their counties switching to all-mail elections. In these specifications, I expect the magnitude of the coefficient on the all-mail indicator variable to

be greater than in the basic specification, because it more directly measures the voters who are affected by the switch to all-mail elections, while controlling for those who voted by mail even before being required to do so. I expect the coefficient on the interaction term to be positive, as a higher level of absentee voting prior to the switch to all-mail elections would attenuate the effect. In these models, the coefficient on the all-mail indicator variable represents the expected change in roll-off if the county had no absentee voting before switching to all-mail elections. Equivalently, the coefficient gives the expected change in roll-off for a county that switched from having 0% absentee voting to 100% absentee voting.[12]

This model also hints at an individual-level effect, given some further assumptions. The coefficient on the indicator variable could represent the change in probability of a polling place voter rolling off when she votes by mail. This interpretation holds under the assumption that the switch to all-mail elections does not impact the behavior of voters who voted absentee prior to the change. This assumption may be reasonable, since absentee voters likely have a routine that would be relatively unaffected by whether or not others vote in person or by mail. However, the assumption could be violated if, for instance, a significant voter education campaign went along with a county's switch to all-mail elections, and this campaign affected both polling-place and absentee voters' roll-off rates. It is not possible to test this assumption using my data, so I focus on the aggregate-level interpretation of this model.

Table 3 gives the results. In all races, including House, the coefficients have the expected signs. The coefficients on the all-mail indicator variable are negative and increase in magnitude relative to the baseline model, and the coefficients on the interaction term

[12]An alternative method of estimating this quantity using an instrumental variables model is presented in Appendix A.

are positive. This reflects the fact that switching to all-mail elections decreases roll-off, but less so for counties that had high levels of absentee voting prior to switching because those counties have fewer voters that are affected by the switch.[13] In these specifications, a switch to all-mail voting appears to have the biggest effect on races for commissioner of public lands, for which $\beta = -4.843$. Therefore, in a county with no absentee voting that switched to 100% absentee voting, we would expect a decrease in roll-off for that race of about 4.9 percentage points.

Figure 4 plots the implied treatment effect as a function of prior absentee for commissioner of public lands. In this plot, the y-axis shows the expected percentage-point change in roll-off across levels of prior absentee usage. The plot clearly shows that switching to all-mail voting causes the largest effects when the level of prior absentee voting was low; the effect is smaller (and possibly insignificant) when absentee voting is already common in a county. Analogous plots for other races are in Appendix B.

Finally, Table 4 shows the results of the regressions testing the persistence of the effects I find. If there is a novelty effect, the magnitude of the effect of all-mail elections should decrease as time goes on. But the results run counter to a novelty effect hypothesis: roll-off actually further decreases in subsequent elections after the introduction of mandatory vote-by-mail. The last row of Table 4 shows the results of an F-test that the effect of the first all-mail election is equal to the effect of the second and the effect of the third or more. These tests show that for all race types, the difference in the effect from the first all-mail election and the second, third or more all-mail elections is statistically significant. This indicates that as the novelty of all-mail elections wears off, the roll-off rate actually

[13] I also test for non-monotonicity in prior absentee percentage, following Gerber, Huber & Hill (2013), by estimating models with indicator variables representing which tercile of prior absentee voting a county is in. The results show that the effect of prior absentee rate is monotonic.

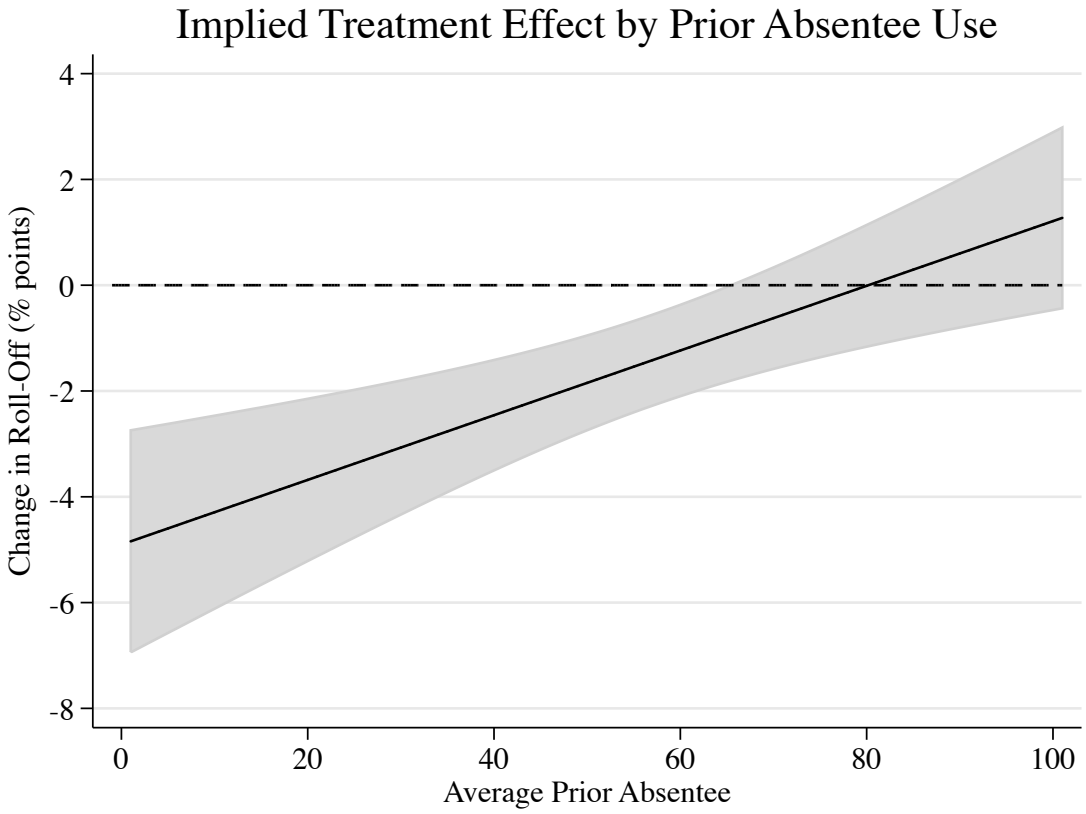

Figure 4: The marginal change in roll-off as a function of average prior absentee voting for commissioner of public lands. The shaded regions correspond to 95% confidence intervals. Full results are reported in Table 3 and analogous plots for other races are available in Appendix B.

continues to decrease. Even in House races, the effect of all-mail elections on the roll-off rate is negative after the first all-mail election. This finding is consistent with previous research showing that roll-off is lower if voters are more accustomed to the method of voting they are using (Nichols & Strizek 1995, Asher, Shussler & Rosenfield 1982).

Overall, all-mail voting does decrease the roll-off rate by a significant amount in low-salience statewide races. These estimates have considerable internal validity because of the long timespan that my dataset covers and the staggered nature of Washington's reforms. There were 6 elections in my dataset that were the first all-mail election for at least one county. In conjunction with county and year fixed effects, this high level of variation in the implementation of vote-by-mail produces reliable estimates of its effect. Moreover, the consistency across races is further evidence that the effect I find is real and wide-reaching.

To bolster the credibility of these findings, I report the results of several robustness tests in Appendix A. In particular, I run placebo tests simulating the distribution of the ATT under the null hypothesis; an instrumental variable specification using VBM_{it} as an instrument for percentage of the electorate that uses absentee voting; and pooled cross-sectional regressions that include county-level demographic covariates. All of these tests confirm my main findings.

If anything, it is possible that my results are conservative estimates of the true effect of switching to mail voting on roll-off. In this study design, it is not possible to distinguish the pure "mode" effect of vote-by-mail on roll-off rates, as opposed to "compositional" effects — the possibility that an institutional change in election administration affects who votes. If a vote-by-mail regime increases turnout by lowering the cost, it would tend to affect the marginal voters — people for whom the costs and benefits of voting are nearly equal. Indeed, there is evidence that switching to all-mail elections induces traditionally low-participation voters to turnout out at a higher rate (Gerber, Huber & Hill 2013).

This type of voter is unlikely to be extremely well-informed, as there is little incentive for someone to educate herself about candidates and issues if she does not plan to vote in the first place. So an increase in marginal voter participation should manifest itself in higher aggregate roll-off, counteracting any roll-off decrease that habitual voters might experience. The coefficients I report, therefore, may be conservative estimates of the true "mode" effect of voting by mail.

4 Discussion

Overall, my findings suggest that beyond simply affecting turnout, vote-by-mail can induce citizens to vote in down-ballot races that they might ignore with traditional polling-place voting. The magnitude of this decrease in roll-off is politically meaningful — it translates into tens of thousands of votes in a typical statewide election. These results have important implications for representation in state government: Roll-off is more common among already-underrepresented groups, so finding ways to decrease roll-off plays an important part in increasing representation.

Moreover, the offices I examine are substantively important in state government. While several are undoubtedly low-profile, they serve crucial roles. The secretary of state's office supervises elections, and is responsible for registering and licensing corporations. The state auditor's office serves as a watchdog to ensure proper use of public resources. As part of this job, it conducts regular audits and investigations of state, county, and local governments. The commissioner of public lands heads the Department of Natural Resources, which is responsible for managing millions of acres state-owned lands. Collectively, these offices oversee a large portion of the state government's responsibilities. Participation in these elections is therefore politically meaningful.

Further, given an information theory of roll-off, where voters roll-off when they lack the knowledge to make an informed choice, these results provide suggestive evidence that certain voting modes may encourage an informed electorate. My findings suggest that prompting voters to educate themselves on the races on the ballot — before they make a decision — may lead to a more informed electorate. Mail voting also affords a convenient opportunity for election administrators to take steps proactively to educate the electorate by sending a voter guide or pamphlet along with the ballot.[14] This opportunity is likely to be more effective than polling-place voter pamphlets, since voters have more time to read and digest the information if they do not have to make a choice immediately.

A better-informed electorate is desirable for reasons beyond a decrease in roll-off. A minimum level of political knowledge is assumed for citizens to participate meaningfully in democracy (Delli Carpini & Keter 1996, Lupia & McCubbins 1998).[15] While the information increase caused by mail voting is likely to affect disproportionately low-salience races due to the diminishing marginal benefit of extra information, there is no reason to expect that mail voting increases knowledge only in those races. If voters take more time educating themselves on down-ballot races, it is also possible that they receive some increase in information regarding prominent races as well.

The results in this paper also have implications for the normative literature on convenience voting. Critics of convenience voting argue that it may erode civic engagement (Thompson 2004, Thompson 2008). According to the argument, when a voter receives her ballot in the mail at home, fills it out at home, and returns it in solitude, she foregoes the

[14]Indeed, the roll-off rate in Washington primaries decreased after voter pamphlets were introduced, further bolstering the argument that there is much election administrators can do to increase participation (Brien 2002).

[15]For a view that increased information may not increase voter welfare, see Ashworth & Bueno de Mesquita (2014).

civic experience of coming together in public with her fellow citizens to elect the leaders of their society. Such public forums are desirable in a democratic society, and so their loss is detrimental to civic life.

Thompson notes, however, that this critique might be mitigated if convenience voting is shown to have a substantial impact on participation rates. As reviewed above, the debate over whether vote-by-mail increases turnout is yet to be settled, but the current study presents evidence that mail voting improves another facet of participation.

5 Conclusion

In this article, I show that mail voting tends to decrease ballot roll-off in statewide races. When voters can take their time filling out a ballot at home, they can look up information about the candidates on the ballot, as opposed those in the polling booth, who have little ability to seek out new information before they must cast their votes. The difference-in-differences design I employ to evaluate the effects of Washington State's adoption of all-mail voting gives substantial internal validity to this causal story.

Future research should investigate how voting mode may interact with individual voters' characteristics. Several studies have shown that roll-off does not affect all demographic groups equally, so one might expect that the marginal benefit of mail voting may accrue disproportionately to some groups. For several reasons, I am unable to identify heterogenous effects across groups in this study. First, I examine aggregate data, making it difficult to reliably estimate any interaction that might exist. Even if I could overcome the ecological inference problem, however, Washington is simply not a very diverse state — only 4% of residents are black. Still, while African Americans are known to be disproportionately affected by roll-off, there is evidence that it is partially attributable to "discretionary" de-

cisions on voters' part (Herron & Sekhon 2005). Designing institutions to promote political knowledge may help to close the residual vote gap between blacks and whites.

Ballot roll-off is an essential feature of American elections and increasingly, so is mail voting. I show that mail voting can significantly reduce roll-off, likely because of an increase in political awareness. These results are important addressing low levels of political participation — especially at the state and local levels — and understanding how convenience voting reforms are shaping American democracy.

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Appendices

A Robustness Tests

A.1 Placebo Laws

To further substantiate the robustness of my results, I performed a simulation-based placebo test to evaluate the probability of obtaining the main results by chance. The idea is to randomly generate the year each county switches to all-mail elections, estimate the model, and then repeat. Because I randomly assign the treatment date, I can be confident that it is uncorrelated with roll-off, the dependent variable. The procedure I employ is as follows:

1. For each county, randomly generate a placebo "VBM adoption year" between 1996 and 2012, inclusive (the years in my sample).
2. Set $\text{VBM}_{it} = 1$ if Year_{it} is after the placebo VBM adoption year.
3. Using the placebo data, estimate the main equation given in Section 3.2 and store the coefficient on VBM_{it} (i.e., the average treatment effect on the treated).
4. Repeat steps 1-3 a suitably large number of times (I performed 10,000 simulations).
5. Derive an empirical sampling distribution of the ATT under the null using a density estimator on the stored coefficients.

Because VBM_{it} is randomly assigned, the estimated ATT should have mean 0 by construction. I can then compare the estimate derived from the actual data to the placebo estimates. Figure 5 plots the distribution of the estimated average treatment effect on the

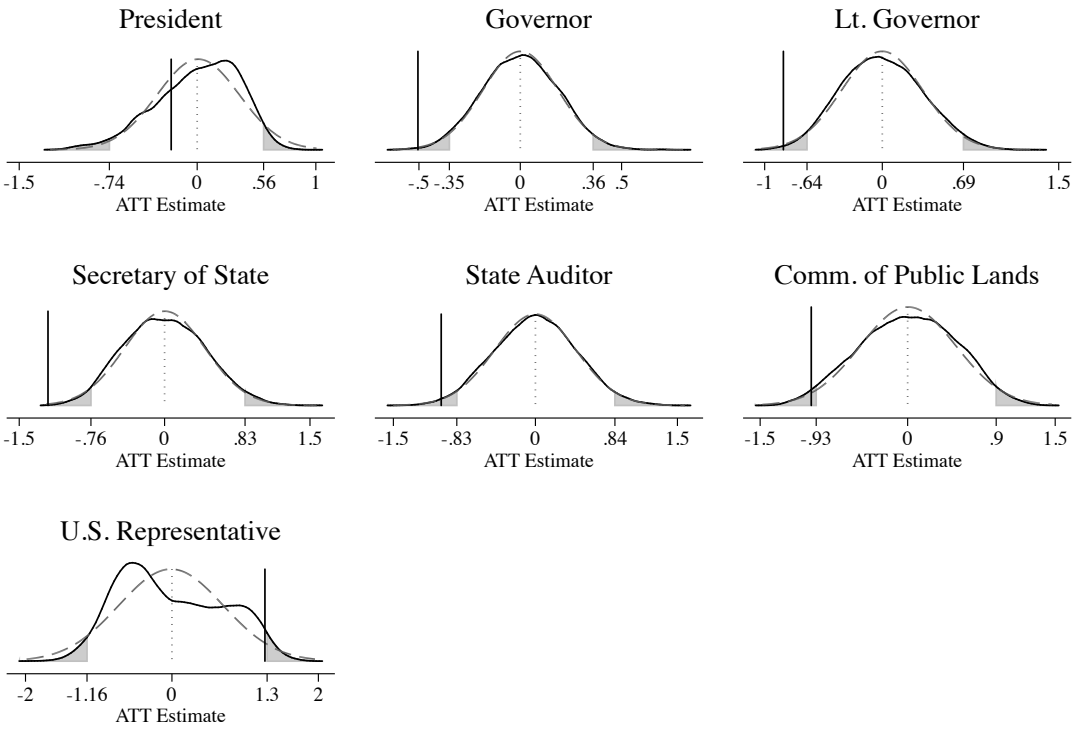


Figure 5: The empirical sampling distribution of the effect of all-mail voting on roll-off rates under the null. The kernel density estimates are generated from 10,000 iterations of a placebo process whereby the year each county switched to all-mail elections was generated randomly. The shaded regions show the 2.5 and 97.5 percentiles. The dotted line shows the normal distribution with the same mean and standard deviation as the ATT distribution. The black line shows the actual estimates from the main text, reported in Table 2.

treated (ATT) using the primary specification reported in the text, along with the actual results from Table 2. In each race except for president and House, the actual estimate is more extreme than at least 95% of the values obtained in the placebo simulations.[16] This test confirms that it is unlikely that I would have obtained similarly extreme estimates under the null hypothesis of no effect.

A.2 Instrumental Variable Regressions

An alternate method of estimating the marginal effect of absentee voting on roll-off is to use all-mail voting as an instrument for absentee voting in an instrumental variables regression.[17] These results can be interpreted as the effect of absentee voting, standardized by the amount of variance in absentee voting due to all-mail elections. The results are shown Table 5 and the coefficients on percent absentee are plotted in Figure 6. The coefficient can be interpreted in the same way as those in the second set of models reported in the main text; that is, they represent the expected change in roll-off for a county that had no absentee voting that switched to 100% absentee voting.

The point estimates are similar in direction and magnitude as those reported in Table 3. These results further confirm the robustness of my findings: voting by mail is negatively correlated with roll-off across a wide variety of races.

[16]The actual ATT for House is nearly significant — the actual estimate is 1.270, while the 97.5 percentile in the placebo simulation is 1.3.

[17]I implement these models using the `xtivreg2` Stata module (Schaffer 2010). I report the first-stage Kleibergen-Paap weak identification statistic (Kleibergen & Paap N.d., Kleibergen & Schaffer 2007).

IV Estimates: Effect of Absentee Voting on Roll-Off

Office:	(1) President	(2) Governor	(3) Lt. Gov.	(4) Secretary of State	(5) State Auditor	(6) Comm. of Public Lands	(7) U.S. Rep.
Percent absentee	-0.868	-1.997	-3.325	-4.758	-3.937	-3.877	4.787
	[-2.627 0.892]	[-3.508 -0.485]	[-5.136 -1.514]	[-6.146 -3.369]	[-5.860 -2.014]	[-7.747 -0.007]	[1.158 8.417]
Turnout	0.114	0.084	0.054	0.015	-0.034	0.098	-0.062
	[-0.008 0.236]	[0.039 0.128]	[-0.055 0.164]	[-0.072 0.102]	[-0.134 0.067]	[0.033 0.163]	[-0.159 0.035]
Observations	193	193	193	193	193	193	347
R-squared	0.456	0.641	0.426	0.631	0.331	0.498	0.345
Number of counties	39	39	39	39	39	39	39
Number of years	5	5	5	5	5	5	9
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KP weak identification statistic	168.7	168.7	168.7	168.7	168.7	168.7	326.1

Table 5: The second-stage results of a fixed-effects instrumental variable regression, using the vote-by-mail indicator variable as an instrument for absentee voting. Absentee voting is measured 0 to 1. Thus, the coefficient represents the percentage-point change in roll-off for a county with no absentee voting switching to 100% absentee voting. I report Kleiberg-Paap weak identification statistic; the first-stage regression is identical for all models but U.S. Representative, which also includes off-year elections. Regressions weighted as described in the main text.

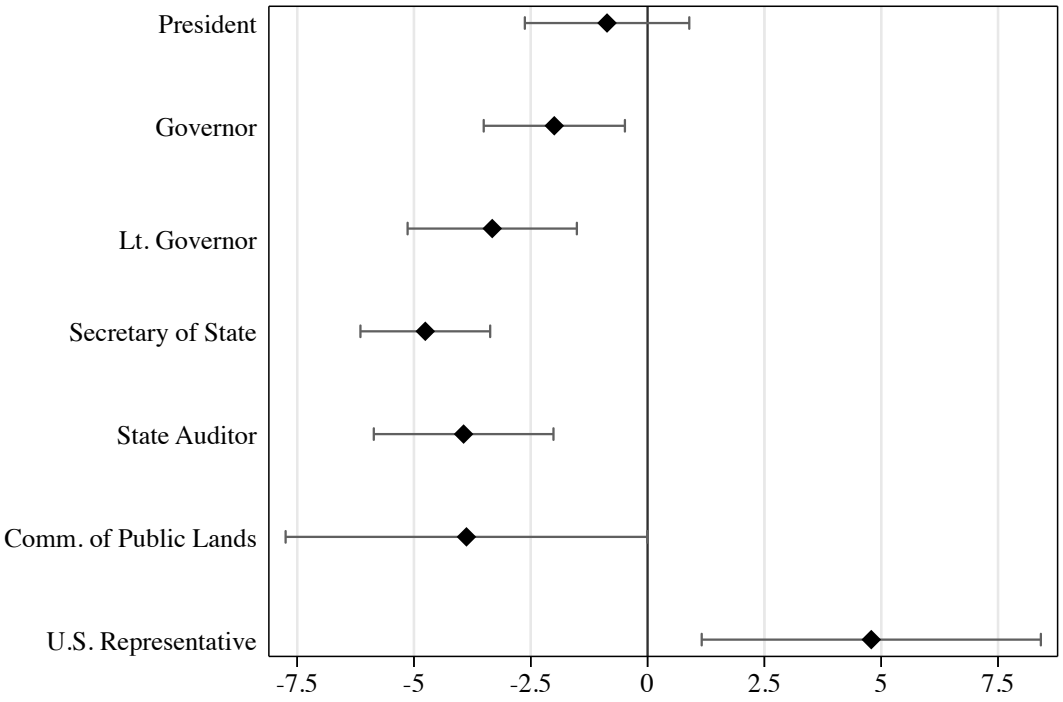


Figure 6: Point estimates and confidence intervals for the instrumental variables estimates of the effect of absentee voting on roll-off, with all-mail voting as the excluded instrument.

A.3 Cross-Sectional Regressions

The main text used fixed-effects models to investigate the impact of all-mail voting on roll-off. This method is preferable for analyzing panel data because it leverages within-unit variation to rule out some types of spurious correlations. Even though some demographic characteristics are known to be associated with roll-off, they are not suitable for inclusion in the fixed effect model because demographics are relatively stable across all years in my data set.

As a robustness test, I estimated cross-section regressions that include county-level demographic covariates and omit county fixed effects. In contrast to the fixed effects models, cross-section regression exploits variation in demographics across counties. Table 6 shows the results of these models. The cross-section model exploits variation in demographics across counties, giving a more sensible meaning to the estimated coefficients. The models I estimate are given by:

$$\mathrm{Y}_i = \alpha + \delta_1\ \mathrm{VBM}_i + \beta_1 \mathrm{Turnout}_i + \theta \mathrm{Covariates}_i + \gamma \mathrm{Year}_i + \epsilon_i \tag{2}$$

$$\mathrm{Y}_i = \alpha + \delta_1\ \mathrm{VBM}_i + \delta_2 \mathrm{VBM\ x\ Prior\ Abs}_i + \beta_1 \mathrm{Turnout}_i + \theta \mathrm{Covariates}_i + \gamma \mathrm{Year}_i + \epsilon_i \tag{3}$$

In these models, θ represents a vector of coefficients corresponding to the demographic covariates. The demographic variables include percentage of the voting age population (VAP) that is white, percentage of VAP that is black, percentage of VAP that is Hispanic, and percentage of VAP that is 65 or old. I obtained these estimates from the Census

Bureau.[18]

If the effect I report in the main text is robust to demographic covariates, the coefficients on the all-mail election indicator should have the same sign as the fixed-effects models reported in Tables 2 and 3. Indeed, the coefficients run in the same direction, and on inspection, have relatively similar magnitudes to their fixed-effects counterparts. These results boost my confidence in the conclusions I draw from my preferred fixed-effects specifications.

A note of caution in directly interpreting the coefficients on the demographic variables. First, a full battery of controls, such as urban/rural, education levels, and mobility, are not included. Because these and other factors may be correlated with the observed roll-off rate and with the included covariates, the coefficients on the demographic variables may be confounded. Second, Washington is a relatively homogenous state, meaning that there is not a large amount of variation in these variables. But, overall, these models show that my main results are robust to alternate specifications.

B Interaction Plots

Figure 7 shows the marginal effect of switching to all-mail voting as a function of average prior absentee usage. See Section 3.3 for the analogous plot for commissioner of public lands and a full discussion interpreting these plots.

[18] Available online at `http://www.census.gov/popest/data/historical/`. Last accessed on July 11, 2014. I employ a noisy measure of voting age population; age categories available in Census-produced estimates include 15 to 19 years old and 20 to 24 years old. Thus, 18- and 19-year olds are excluded from counts of VAP.

Cross Section Regressions Including Demographic Covariates

Office:	(1) President	(2) Governor	(3) Lt. Gov.	(4) Secretary of State	(5) State Auditor	(6) Comm. of Public Lands	(7) U.S. Rep.
All-Mail Election	0.205	−0.346	−1.085	−1.409	−1.336	−1.135	1.165
	[−0.173 0.584]	[−0.688 − 0.003]	[−1.543 − 0.626]	[−1.941 − 0.878]	[−2.169 − 0.502]	[−1.957 − 0.313]	[−0.041 2.370]
Turnout	0.015	0.006	0.022	−0.021	−0.022	0.057	−0.002
	[−0.043 0.072]	[−0.035 0.046]	[−0.077 0.121]	[−0.097 0.055]	[−0.172 0.128]	[−0.055 0.168]	[−0.071 0.067]
% white	−8.355	−0.153	−14.644	−14.127	−28.410	−15.994	−14.929
	[−15.843 − 0.867]	[−4.609 4.303]	[−30.044 0.756]	[−27.681 − 0.573]	[−51.143 − 5.678]	[−33.511 1.522]	[−24.610 − 5.247]
% black	−18.523	−7.813	−13.321	−14.739	−58.295	−25.139	−0.021
	[−38.824 1.778]	[−20.040 4.413]	[−71.271 44.628]	[−61.781 32.302]	[−145.487 28.897]	[−85.641 35.363]	[−24.697 24.654]
% Hispanic	4.162	−0.499	−2.856	−3.783	−5.544	−3.213	−2.569
	[2.123 6.202]	[−2.750 1.752]	[−7.132 1.420]	[−8.205 0.640]	[−10.794 − 0.294]	[−6.116 − 0.310]	[−6.444 1.307]
% age 65+	5.796	1.311	2.388	6.746	7.966	1.880	6.652
	[1.468 10.125]	[−8.139 10.761]	[−9.529 14.306]	[−4.739 18.231]	[−8.534 24.465]	[−13.642 17.401]	[−0.271 13.574]
Constant	7.301	2.219	18.268	20.172	35.964	18.339	17.311
	[1.148 13.453]	[−2.026 6.464]	[2.826 33.709]	[6.671 33.673]	[12.381 59.548]	[3.072 33.606]	[5.960 28.662]
Observations	193	193	193	193	193	193	347
R-squared	0.502	0.433	0.422	0.511	0.363	0.443	0.416
Number of years	5	5	5	5	5	5	9
County fixed effects	No	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Weighted least squares regression estimates reported. 95% confidence intervals, clustered by county, reported in brackets.

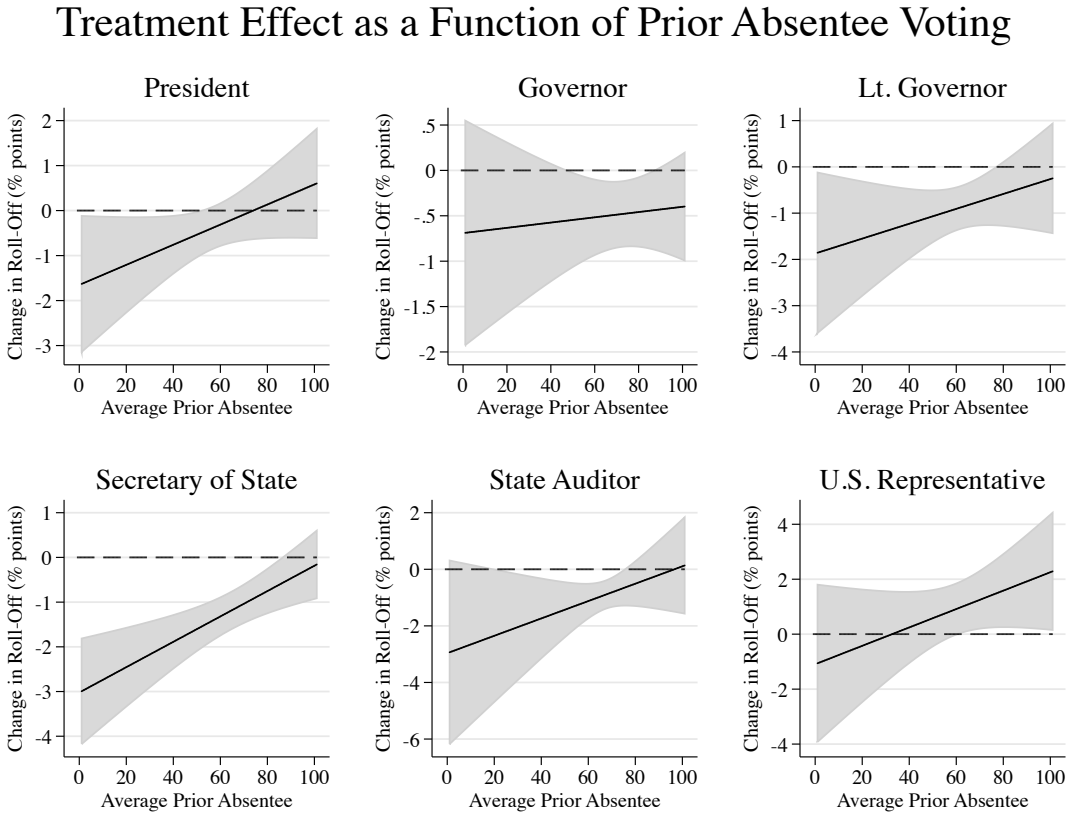


Figure 7: The marginal change in roll-off as a function of average prior absentee voting. The shaded regions correspond to 95% confidence intervals. Full results are reported in Table 3.

C Washington State Sample Ballots

The following pages show sample ballots for three Washington counties in three different elections. The first is the sample ballot provided by Clallam County in 2008, the second is from King County (Seattle) in 2010, and the third is from Spokane County in 2012.[19] Each of those counties had all-mail elections in those years. Note the complexity of the ballots: even in 2010, an off-year election, voters in King County had 38 votes to cast, from proposed amendments of Washington's constitution to a United States Senate race. While by no means rigorous, this qualitative observation is in line with the idea that voters may be overwhelmed and may benefit from extra time to fill out their ballot. Not only are voters not likely to be substantially informed about each race in which they are asked to cast a vote, they may become fatigued as they move down the ballot, making over three dozen choices.

[19]These sample ballots were downloaded from the Washington Secretary of State's website, last accessed on July 21, 2014. The Clallam County ballot is available at `https://wei.sos.wa.gov/county/clallam/en/elections/archivedelections/2000-2009/documents/2008/general/2008%20general%20sample%20ballot.pdf`, the King County ballot at `http://your.kingcounty.gov/elections/elections/201011/seattle_ballot.pdf`, and the Spokane County ballot at `https://wei.sos.wa.gov/county/spokane/en/archives/Documents/Sample%20Ballots/2012%20Sample%20Ballots/Sample%20BallotP812.pdf`.

C.1 Clallam County, 2008

VOTER PLEASE REMOVE STUB # 1

Vote Both Sides

OFFICIAL BALLOT — **2008 General Election**
Clallam County, WA
November 04, 2008 — **Precinct *SAMPLE***

Instructions:
VOTE FOR ONLY ONE CANDIDATE IN EACH RACE

Please use a black ball point pen to mark your choices on the ballot. To vote for your choice in each contest, completely fill in the box provided to the left of your choice.

To vote for a candidate whose name is not printed on the ballot, completely fill in the box provided to the left of the words "Write-In" and write the candidate's name on the line provided.

To Correct a Mistake:
Draw a line through the entire candidate's name like shown below. You then have the option of making another choice.

Office
- Candidate #1
- ~~Candidate #2~~
- Write - In

Washington has a new election system. In each race for partisan office, the two candidates who receive the most votes in the August Primary advance to the November General Election. Each candidate for partisan office may state a political party that he or she prefers. A candidate's preference does not imply that the candidate is nominated or endorsed by the party, or that the party approves of or associates with that candidate. The election for President and Vice-President is different. Candidates for President and Vice-President are the official nominees of their political party.

STATE MEASURES

Proposed by Initiative Petition

INITIATIVE MEASURE NO. 985
Initiative Measure No. 985 concerns transportation.

This measure would open high-occupancy vehicle lanes to all traffic during specified hours, require traffic light synchronization, increase roadside assistance funding, and dedicate certain taxes, fines, tolls and other revenues to traffic-flow purposes.

Should this measure be enacted into law?
- ☐ Yes
- ☐ No

INITIATIVE MEASURE NO. 1000
Initiative Measure No. 1000 concerns allowing certain terminally ill competent adults to obtain lethal prescriptions.

This measure would permit terminally ill, competent, adult Washington residents, who are medically predicted to have six months or less to live, to request and self-administer lethal medication prescribed by a physician.

Should this measure be enacted into law?
- ☐ Yes
- ☐ No

INITIATIVE MEASURE NO. 1029
Initiative Measure No. 1029 concerns long-term care services for the elderly and persons with disabilities.

This measure would require long-term care workers to be certified as home care aides based on an examination, with exceptions; increase training and criminal background check requirements; and establish disciplinary standards and procedures.

Should this measure be enacted into law?
- ☐ Yes
- ☐ No

FEDERAL
Partisan Offices

President / Vice President
- ☐ Barack Obama / Joe Biden — Democratic Party Nominees
- ☐ John McCain / Sarah Palin — Republican Party Nominees
- ☐ Ralph Nader / Matt Gonzalez — Independent Candidates
- ☐ Gloria La Riva / Eugene Puryear — Socialism & Liberation Party Nominees
- ☐ James E. Harris / Alyson Kennedy — Socialist Workers Party Nominees
- ☐ Bob Barr / Wayne A. Root — Libertarian Party Nominees
- ☐ Chuck Baldwin / Darrell L. Castle — Constitution Party Nominees
- ☐ Cynthia McKinney / Rosa Clemente — Green Party Nominees
- ☐ Write-In

READ: Each candidate for President and Vice-President is the official nominee of a political party. For other partisan offices, each candidate may state a political party that he or she prefers. A candidate's preference does not imply that the candidate is nominated or endorsed by the party, or that the party approves of or associates with that candidate.

U.S. Congressional District 6
Representative
- ☐ Norm Dicks (Prefers Democratic Party)
- ☐ Doug Cloud (Prefers Republican Party)
- ☐ Write-In

STATE OF WASHINGTON
Partisan Offices

Governor
- ☐ Christine Gregoire (Prefers Democratic Party)
- ☐ Dino Rossi (Prefers G.O.P Party)
- ☐ Write-In

Lt. Governor
- ☐ Brad Owen (Prefers Democratic Party)
- ☐ Marcia McCraw (Prefers Republican Party)
- ☐ Write-In

Secretary of State
- ☐ Sam Reed (Prefers Republican Party)
- ☐ Jason Osgood (Prefers Democratic Party)
- ☐ Write-In

State Treasurer
- ☐ Allan Martin (Prefers Republican Party)
- ☐ Jim McIntire (Prefers Democratic Party)
- ☐ Write-In

State Auditor
- ☐ Brian Sonntag (Prefers Democratic Party)
- ☐ J. Richard (Dick) McEntee (Prefers Republican Party)
- ☐ Write-In

Attorney General
- ☐ Rob McKenna (Prefers Republican Party)
- ☐ John Ladenburg (Prefers Democratic Party)
- ☐ Write-In

Commissioner of Public Lands
- ☐ Doug Sutherland (Prefers Republican Party)
- ☐ Peter J. Goldmark (Prefers Democratic Party)
- ☐ Write-In

STATE OF WASHINGTON
Nonpartisan Office

Superintendent of Public Instruction
- ☐ Teresa (Terry) Bergeson
- ☐ Randy Dorn
- ☐ Write-In

1200104010040

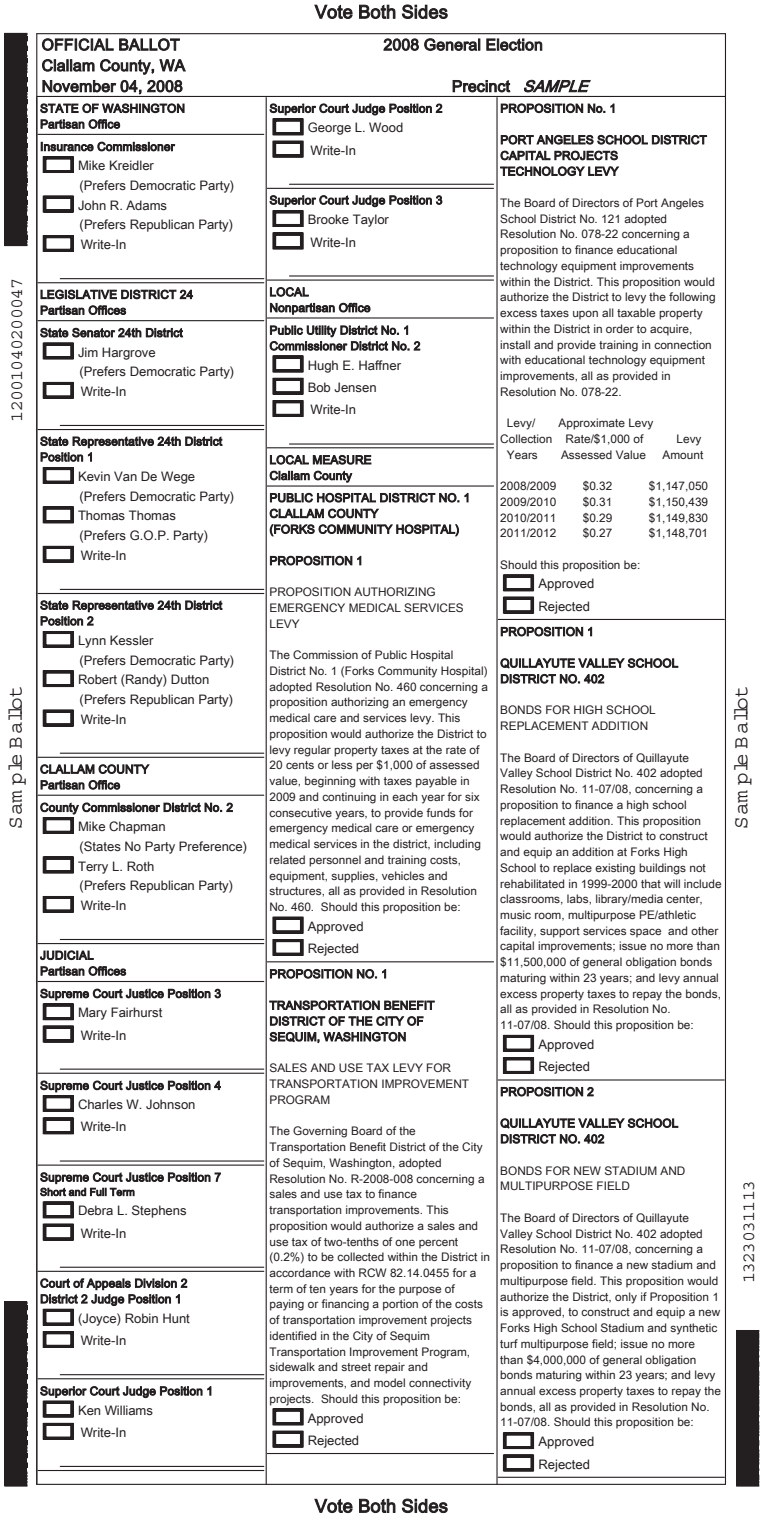
Sample Ballot

Sample Ballot

1323031113

Vote Both Sides

Clallam County, 2008 (cont'd)



Vote Both Sides

OFFICIAL BALLOT
Clallam County, WA
November 04, 2008

2008 General Election

Precinct *SAMPLE*

STATE OF WASHINGTON
Partisan Office

Insurance Commissioner
- ☐ Mike Kreidler (Prefers Democratic Party)
- ☐ John R. Adams (Prefers Republican Party)
- ☐ Write-In

LEGISLATIVE DISTRICT 24
Partisan Offices

State Senator 24th District
- ☐ Jim Hargrove (Prefers Democratic Party)
- ☐ Write-In

State Representative 24th District Position 1
- ☐ Kevin Van De Wege (Prefers Democratic Party)
- ☐ Thomas Thomas (Prefers G.O.P. Party)
- ☐ Write-In

State Representative 24th District Position 2
- ☐ Lynn Kessler (Prefers Democratic Party)
- ☐ Robert (Randy) Dutton (Prefers Republican Party)
- ☐ Write-In

CLALLAM COUNTY
Partisan Office

County Commissioner District No. 2
- ☐ Mike Chapman (States No Party Preference)
- ☐ Terry L. Roth (Prefers Republican Party)
- ☐ Write-In

JUDICIAL
Partisan Offices

Supreme Court Justice Position 3
- ☐ Mary Fairhurst
- ☐ Write-In

Supreme Court Justice Position 4
- ☐ Charles W. Johnson
- ☐ Write-In

Supreme Court Justice Position 7
Short and Full Term
- ☐ Debra L. Stephens
- ☐ Write-In

Court of Appeals Division 2
District 2 Judge Position 1
- ☐ (Joyce) Robin Hunt
- ☐ Write-In

Superior Court Judge Position 1
- ☐ Ken Williams
- ☐ Write-In

Superior Court Judge Position 2
- ☐ George L. Wood
- ☐ Write-In

Superior Court Judge Position 3
- ☐ Brooke Taylor
- ☐ Write-In

LOCAL
Nonpartisan Office

Public Utility District No. 1
Commissioner District No. 2
- ☐ Hugh E. Haffner
- ☐ Bob Jensen
- ☐ Write-In

LOCAL MEASURE
Clallam County

PUBLIC HOSPITAL DISTRICT NO. 1
CLALLAM COUNTY
(FORKS COMMUNITY HOSPITAL)

PROPOSITION 1

PROPOSITION AUTHORIZING EMERGENCY MEDICAL SERVICES LEVY

The Commission of Public Hospital District No. 1 (Forks Community Hospital) adopted Resolution No. 460 concerning a proposition authorizing an emergency medical care and services levy. This proposition would authorize the District to levy regular property taxes at the rate of 20 cents or less per $1,000 of assessed value, beginning with taxes payable in 2009 and continuing in each year for six consecutive years, to provide funds for emergency medical care or emergency medical services in the district, including related personnel and training costs, equipment, supplies, vehicles and structures, all as provided in Resolution No. 460. Should this proposition be:
- ☐ Approved
- ☐ Rejected

PROPOSITION NO. 1

TRANSPORTATION BENEFIT DISTRICT OF THE CITY OF SEQUIM, WASHINGTON

SALES AND USE TAX LEVY FOR TRANSPORTATION IMPROVEMENT PROGRAM

The Governing Board of the Transportation Benefit District of the City of Sequim, Washington, adopted Resolution No. R-2008-008 concerning a sales and use tax to finance transportation improvements. This proposition would authorize a sales and use tax of two-tenths of one percent (0.2%) to be collected within the District in accordance with RCW 82.14.0455 for a term of ten years for the purpose of paying or financing a portion of the costs of transportation improvement projects identified in the City of Sequim Transportation Improvement Program, sidewalk and street repair and improvements, and model connectivity projects. Should this proposition be:
- ☐ Approved
- ☐ Rejected

PROPOSITION No. 1

PORT ANGELES SCHOOL DISTRICT CAPITAL PROJECTS TECHNOLOGY LEVY

The Board of Directors of Port Angeles School District No. 121 adopted Resolution No. 078-22 concerning a proposition to finance educational technology equipment improvements within the District. This proposition would authorize the District to levy the following excess taxes upon all taxable property within the District in order to acquire, install and provide training in connection with educational technology equipment improvements, all as provided in Resolution No. 078-22.

Levy/ Collection Years	Approximate Levy Rate/$1,000 of Assessed Value	Levy Amount
2008/2009	$0.32	$1,147,050
2009/2010	$0.31	$1,150,439
2010/2011	$0.29	$1,149,830
2011/2012	$0.27	$1,148,701

Should this proposition be:
- ☐ Approved
- ☐ Rejected

PROPOSITION 1

QUILLAYUTE VALLEY SCHOOL DISTRICT NO. 402

BONDS FOR HIGH SCHOOL REPLACEMENT ADDITION

The Board of Directors of Quillayute Valley School District No. 402 adopted Resolution No. 11-07/08, concerning a proposition to finance a high school replacement addition. This proposition would authorize the District to construct and equip an addition at Forks High School to replace existing buildings not rehabilitated in 1999-2000 that will include classrooms, labs, library/media center, music room, multipurpose PE/athletic facility, support services space and other capital improvements; issue no more than $11,500,000 of general obligation bonds maturing within 23 years; and levy annual excess property taxes to repay the bonds, all as provided in Resolution No. 11-07/08. Should this proposition be:
- ☐ Approved
- ☐ Rejected

PROPOSITION 2

QUILLAYUTE VALLEY SCHOOL DISTRICT NO. 402

BONDS FOR NEW STADIUM AND MULTIPURPOSE FIELD

The Board of Directors of Quillayute Valley School District No. 402 adopted Resolution No. 11-07/08, concerning a proposition to finance a new stadium and multipurpose field. This proposition would authorize the District, only if Proposition 1 is approved, to construct and equip a new Forks High School Stadium and synthetic turf multipurpose field; issue no more than $4,000,000 of general obligation bonds maturing within 23 years; and levy annual excess property taxes to repay the bonds, all as provided in Resolution No. 11-07/08. Should this proposition be:
- ☐ Approved
- ☐ Rejected

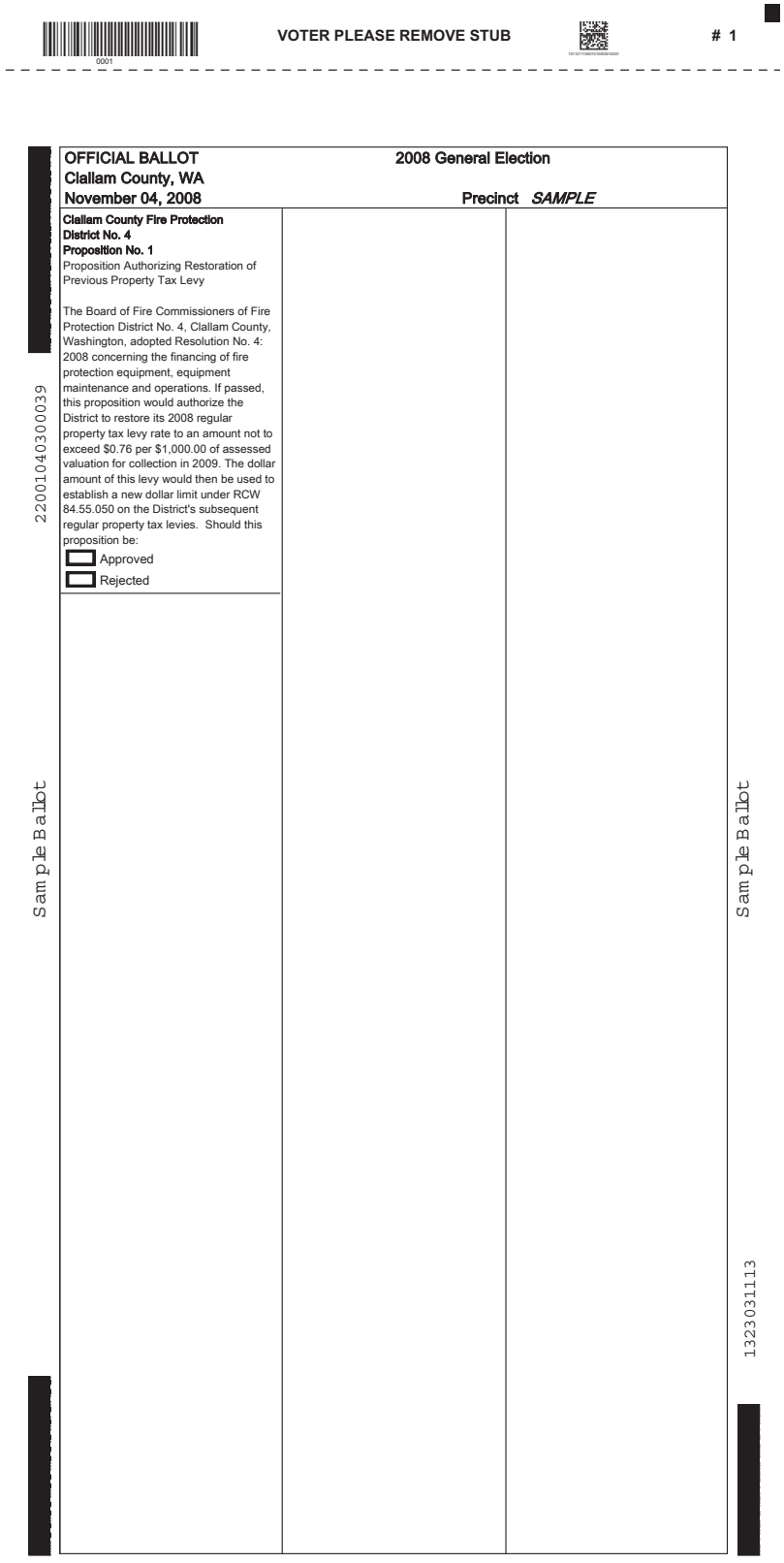
Vote Both Sides

Sample Ballot

1200104020047

Sample Ballot

1323031113


VOTER PLEASE REMOVE STUB
1
OFFICIAL BALLOT
Clallam County, WA
November 04, 2008
2008 General Election
Precinct SAMPLE
Clallam County Fire Protection
District No. 4
Proposition No. 1
Proposition Authorizing Restoration of Previous Property Tax Levy
The Board of Fire Commissioners of Fire Protection District No. 4, Clallam County, Washington, adopted Resolution No. 4: 2008 concerning the financing of fire protection equipment, equipment maintenance and operations. If passed, this proposition would authorize the District to restore its 2008 regular property tax levy rate to an amount not to exceed $0.76 per $1,000.00 of assessed valuation for collection in 2009. The dollar amount of this levy would then be used to establish a new dollar limit under RCW 84.55.050 on the District's subsequent regular property tax levies. Should this proposition be:
Approved
Rejected
2200104030039
Sample Ballot
Sample Ballot
1323031113

2200104040046

Sample Ballot

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Sample Ballot

1323031113

C.2 King County, 2010

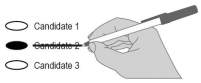
November 2, 2010
Official General Election Ballot
King County, Washington

Instructions

Making selections

Use a dark pen to completely fill in the oval next to your choice.

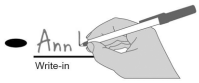
How to correct a mistake



To make a correction, draw a line through the entire measure response or candidate's name.

You then have the option of making another choice.

Optional write-in



To add a candidate, fill in the oval next to the write-in line and print the name on the write-in line.

Do not cut, tear or damage the ballot.

Begin voting here

State of Washington

Proposed by Initiative Petition

Initiative Measure No. 1053

Initiative Measure No. 1053 concerns tax and fee increases imposed by state government. This measure would restate existing statutory requirements that legislative actions raising taxes must be approved by two-thirds legislative majorities or receive voter approval, and that new or increased fees require majority legislative approval. Should this measure be enacted into law?

- YES
- NO

Initiative Measure No. 1082

Initiative Measure No. 1082 concerns industrial insurance. This measure would authorize employers to purchase private industrial insurance beginning July 1, 2012; direct the legislature to enact conforming legislation by March 1, 2012; and eliminate the worker-paid share of medical-benefit premiums. Should this measure be enacted into law?

- YES
- NO

Initiative Measure No. 1098

Initiative Measure No. 1098 concerns establishing a state income tax and reducing other taxes. This measure would tax "adjusted gross income" above $200,000 (individuals) and $400,000 (joint-filers), reduce state property tax levies, reduce certain business and occupation taxes, and direct any increased revenues to education and health. Should this measure be enacted into law?

- YES
- NO

State of Washington

Proposed by Initiative Petition

Initiative Measure No. 1100

Initiative Measure No. 1100 concerns liquor (beer, wine and spirits). This measure would close state liquor stores; authorize sale, distribution, and importation of spirits by private parties; and repeal certain requirements that govern the business operations of beer and wine distributers and producers. Should this measure be enacted into law?

- YES
- NO

Initiative Measure No. 1105

Initiative Measure No. 1105 concerns liquor (beer, wine and spirits). This measure would close all state liquor stores and license private parties to sell or distribute spirits. It would revise laws concerning regulation, taxation and government revenues from distribution and sale of spirits. Should this measure be enacted into law?

- YES
- NO

Initiative Measure No. 1107

Initiative Measure No. 1107 concerns reversing certain 2010 amendments to state tax laws. This measure would end sales tax on candy; end temporary sales tax on some bottled water; end temporary excise taxes on carbonated beverages; and reduce tax rates for certain food processors. Should this measure be enacted into law?

- YES
- NO

Proposed to the People by the Legislature

Referendum Bill No. 52

The legislature has passed Engrossed House Bill No. 2561, concerning authorizing and funding bonds for energy efficiency projects in schools. This bill would authorize bonds to finance construction and repair projects increasing energy efficiency in public schools and higher education buildings, and continue the sales tax on bottled water otherwise expiring in 2013. Should this bill be:

- APPROVED
- REJECTED

Amendment to the State Constitution
Senate Joint Resolution No. 8225

The legislature has proposed a constitutional amendment concerning the limitation on state debt. This amendment would require the state to reduce the interest accounted for in calculating the constitutional debt limit, by the amount of federal payments scheduled to be received to offset that interest. Should this constitutional amendment be:

- APPROVED
- REJECTED

Amendment to the State Constitution
Engrossed Substitute House Joint Resolution No. 4220

The legislature has proposed a constitutional amendment on denying bail for persons charged with certain criminal offenses. This amendment would authorize courts to deny bail for offenses punishable by the possibility of life in prison, on clear and convincing evidence of a propensity for violence that would likely endanger persons. Should this constitutional amendment be:

- APPROVED
- REJECTED

Continued on other side

King County

Charter Amendment No. 1
Amendments to the Preamble

Shall the preamble of the King County Charter be amended to specify the local and regional role of county government and clarify the purposes of county government, as provided in Ordinance No. 16884?

- YES
- NO

Charter Amendment No. 2
Amendment of Section 690 - Campaign Finance

Shall Section 690 of the King County Charter be amended to specify that timely filing of a statement of campaign receipts and expenditures with the Washington State Public Disclosure Commission in accordance with chapter 42.17 RCW satisfies the filing obligations of Section 690 of the King County Charter, as provided in Ordinance No. 16885?

- YES
- NO

Charter Amendment No. 3
Amendment of Section 890 and New Section 897 - Collective Bargaining

Shall the King County Charter be amended to allow the King County Sheriff to serve as the county's collective bargaining agent for all department of public safety issues except for compensation and benefits, which would continue to be bargained by the county executive, as provided in Ordinance No. 16900?

- YES
- NO

Proposition No. 1
Sales and Use Tax for Criminal Justice, Fire Protection, and Other Government Purposes

The Metropolitan King County Council adopted Ordinance 16899 concerning funding for criminal justice, fire protection, and other government purposes. This proposition would authorize King County to fix and impose an additional sales and use tax of 0.2%, spilt between the county (60%) and cities (40%). At least one-third of all proceeds shall be used for criminal justice or fire protection purposes. County proceeds shall be used for criminal justice purposes, such as police protection, and the replacement of capital facilities for juvenile justice. The duration of the additional sales and use tax will be as provided in section 6 of Ordinance 16899. Should this proposition be:

- APPROVED
- REJECTED

READ: Each candidate for partisan office may state a political party that he or she prefers. A candidate's preference does not imply that the candidate is nominated or endorsed by the party, or that the party approves of or associates with that candidate.

Federal

United States Senator
partisan office
vote for one

- Patty Murray (Prefers Democratic Party)
- Dino Rossi (Prefers Republican Party)
- Write-in

United States Representative
Congressional District No. 7
partisan office
vote for one

- Jim McDermott (Prefers Democratic Party)
- Bob Jeffers-Schroder (Prefers Independent - No Party)
- Write-in

King County, 2010 (cont'd)

State of Washington

Legislative District No. 43

State Senator
partisan office
vote for one

- Ed Murray (Prefers Democratic Party)
- Write-in

Representative Position No. 1
partisan office
vote for one

- Jamie Pedersen (Prefers Democratic Party)
- Write-in

Representative Position No. 2
partisan office
vote for one

- Frank Chopp (Prefers Democratic Party)
- Kim Verde (Prefers Republican Party)
- Write-in

King County

Prosecuting Attorney
partisan office
vote for one

- Dan Satterberg (Prefers Republican Party)
- Write-in

Metropolitan King County Council District No. 8
unexpired 1-year term
nonpartisan office
vote for one

- Joe McDermott
- Diana Toledo
- Write-in

State Supreme Court

Justice Position No. 1
nonpartisan office
vote for one

- Jim Johnson
- Write-in

Justice Position No. 5
nonpartisan office
vote for one

- Barbara Madsen
- Write-in

Justice Position No. 6
nonpartisan office
vote for one

- Richard B. Sanders
- Charlie Wiggins
- Write-in

Court of Appeals
Division No. 1, District No. 1

Judge Position No. 1
nonpartisan office
vote for one

- C. Kenneth Grosse
- Write-in

Judge Position No. 2
unexpired 1-year term
nonpartisan office
vote for one

- Michael Spearman
- Write-in

District Court

West Electoral District
Judge Position No. 1
nonpartisan office
vote for one

- Barbara Linde
- Write-in

West Electoral District
Judge Position No. 2
nonpartisan office
vote for one

- Mark C. Chow
- Write-in

West Electoral District
Judge Position No. 3
nonpartisan office
vote for one

- Art Chapman
- Write-in

District Court

West Electoral District
Judge Position No. 4
nonpartisan office
vote for one

- Eileen A. Kato
- Write-in

West Electoral District
Judge Position No. 5
short and full term
nonpartisan office
vote for one

- Anne C. Harper
- Write-in

Seattle Municipal Court

Judge Position No. 1
nonpartisan office
vote for one

- Edsonya Charles
- Ed McKenna
- Write-in

Judge Position No. 2
nonpartisan office
vote for one

- C. Kimi Kondo
- Write-in

Judge Position No. 3
nonpartisan office
vote for one

- Steve Rosen
- Write-in

Judge Position No. 4
nonpartisan office
vote for one

- Judith Hightower
- Write-in

Judge Position No. 5
nonpartisan office
vote for one

- Willie Gregory
- Write-in

Judge Position No. 6
nonpartisan office
vote for one

- Karen Donohue
- Michael Salvador Hurtado
- Write-in

Judge Position No. 7
nonpartisan office
vote for one

- Fred Bonner
- Write-in

School

Seattle School District No. 1
Proposition No. 1
Supplemental Operations Levy

The Board of Directors of Seattle School District No. 1 passed Resolution No. 2009/10-15 concerning this proposition for supplemental educational program funding. To partially replace reduced State funding and to improve education throughout Seattle Public Schools this proposition authorizes the District to levy the following supplemental taxes on all taxable property within the District, to help the District meet the educational needs of its approximately 45,507 students:

Collection Years	Approximate Levy Rate/$1,000 Assessed Value	Levy Amount
2011	$0.11	$14,500,000
2012	$0.12	$16,000,000
2013	$0.12	$17,700,000

Should this proposition be approved?

- YES
- NO

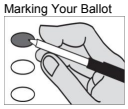
Return your ballot. vote by mail

Vote both sides of ballot

C.3 Spokane County, 2012

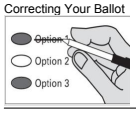
Sample Ballot
Spokane County, Washington
August 7, 2012 Primary Election

Instructions
Marking Your Ballot



Completely fill in the oval to the left of your choice.
Use a dark pen.
Unless specifically allowed by law, more than one vote for an office or ballot measure will be an overvote and no votes for that office or ballot measure will be counted. Vote for one candidate per office. To vote for a candidate whose name is not printed on the ballot, write the candidates name on the line provided and fill in the oval.

Correcting Your Ballot



If you make a correction, draw a line through the entire response. You then have the option of making another choice if you wish.
In order for your ballot to be counted, it must be either postmarked or deposited at a designated deposit site no later than 8:00 P.M. on Election Day (August 7). A list of Ballot Drop Box locations may be found at www.spokanecounty.org/elections.

Begin Voting Here

READ: Each candidate for partisan office may state a political party that he or she prefers. A candidate's preference does not imply that the candidate is nominated or endorsed by the party, or that the party approves of or associates with that candidate.

Federal – Partisan Office

U.S. Senator
- Michael Baumgartner (Prefers Republican Party)
- Will Baker (Prefers Reform Party)
- Chuck Jackson (Prefers Republican Party)
- Timmy (Doc) Wilson (Prefers Democratic Party)
- Art Coday (Prefers Republican Party)
- Maria Cantwell (Prefers Democratic Party)
- Glen (Stocky) R. Stockwell (Prefers Republican Party)
- Mike the Mover (Prefers Republican Party)
- _____

U.S. Representative District 5
- Ian Moody (States No Party Preference)
- Rich Cowan (Prefers Democratic Party)
- Randall L. Yearout (Prefers Republican Party)
- Cathy McMorris Rodgers (Prefers Republican Party)
- _____

The Spokane County Elections Office will be open Monday – Friday 8:30 am to 4:00 pm to assist voters. Voters may drop off ballots, get replacement ballots, use an Accessible Voting unit, or receive other assistance as needed. Additional information may be found at:

Spokane County Elections
1033 W Gardner Ave
Spokane WA 99260
509-477-2320
Website: www.spokanecounty.org/elections
Email: elections@spokanecounty.org

Vote Both Sides of Ballot

State of Washington – Partisan Office

Governor
- Rob Hill (Prefers Democratic Party)
- Rob McKenna (Prefers Republican Party)
- Jay Inslee (Prefers Democratic Party)
- James White (Prefers Independent Party)
- Christian Joubert (States No Party Preference)
- Shahram Hadian (Prefers Republican Party)
- L. Dale Sorgen (Prefers Independent Party)
- Max Sampson (Prefers Republican Party)
- Javier O. Lopez (Prefers Republican Party)
- _____

Lt. Governor
- Glenn Anderson (Prefers Indep Republican Party)
- Brad Owen (Prefers Democrat Party)
- James Robert Deal (States No Party Preference)
- Bill Finkbeiner (Prefers Republican Party)
- Dave T. Sumner IV (Prefers Neopopulist Party)
- Mark Greene (Prefers Democracy Indep. Party)
- _____

Secretary of State
- Jim Kastama (Prefers Democratic Party)
- David J. Anderson (Prefers No Party Preference)
- Sam Wright (Prefers The Human Rights Party)
- Karen Murray (Prefers Constitution Party)
- Kathleen Drew (Prefers Democratic Party)
- Kim Wyman (Prefers Republican Party)
- Greg Nickels (Prefers Democratic Party)
- _____

State of Washington – Partisan Office

State Treasurer
- Jim McIntire (Prefers Democratic Party)
- _____

State Auditor
- Troy Kelley (Prefers Democratic Party)
- James Watkins (Prefers Republican Party)
- Mark Miloscia (Prefers Democratic Party)
- Craig Pridemore (Prefers Democratic Party)
- _____

Attorney General
- Bob Ferguson (Prefers Democratic Party)
- Reagan Dunn (Prefers Republican Party)
- Stephen Pidgeon (Prefers Republican Party)
- _____

Commissioner of Public Lands
- Stephen A. Sharon (States No Party Preference)
- Peter J. Goldmark (Prefers Democratic Party)
- Clint Didier (Prefers Republican Party)
- _____

State of Washington – Nonpartisan Office

Superintendent of Public Instruction
- James Bauckman
- Randy I. Dorn
- Don Hansler
- John Patterson Blair
- Ronald L. (Ron) Higgins
- _____

State of Washington – Partisan Office

Insurance Commissioner
- John R. Adams (Prefers Republican Party)
- Mike Kreidler (Prefers Democratic Party)
- Scott Reilly (Prefers Republican Party)
- Brian C. Berend (Prefers Independent Party)
- _____

Spokane County, 2012 (cont'd)

Legislative District 3 – Partisan Office
State Senator
- Nancy McLaughlin (Prefers G.O.P. Party)
- Andy Billig (Prefers Democratic Party)
- _____

State Representative Pos 1
- Tim Benn (Prefers G.O.P. Party)
- Marcus Riccelli (Prefers Democratic Party)
- Bob Apple (Prefers Democratic Party)
- Jon Snyder (Prefers Democratic Party)
- Morgan Oyler (Prefers Republican Party)
- _____

State Representative Pos 2
- Dave White (Prefers Republican Party)
- Timm Ormsby (Prefers Democratic Party)
- _____

Legislative District 4 – Partisan Office
State Senator
- Mike Padden (Prefers Republican Party)
- _____

State Representative Pos 1
- Larry Crouse (Prefers Republican Party)
- _____

State Representative Pos 2
- Matt Shea (Prefers Republican Party)
- Amy C. Biviano (Prefers Democratic Party)
- _____

Legislative District 6 – Partisan Office
State Representative Pos 1
- Kevin Parker (Prefers Republican Party)
- _____

State Representative Pos 2
- Jeff Holy (Prefers Republican Party)
- Ben Oakley (Prefers Republican Party)
- Dennis Dellwo (Prefers Democratic Party)
- Larry Keller (Prefers Republican Party)
- _____

Legislative District 7 – Partisan Office
State Representative Pos 1
- Shelly Short (Prefers Republican Party)
- _____

State Representative Pos 2
- Robert (Bob) Wilson (Prefers Republican Party)
- Joel Kretz (Prefers Republican Party)
- _____

Legislative District 9 – Partisan Office
State Senator
- Mark G. Schoesler (Prefers G.O.P. Party)
- _____

State Representative Pos 1
- Susan Fagan (Prefers Republican Party)
- _____

State Representative Pos 2
- Joe Schmick (Prefers Republican Party)
- _____

Spokane County – Partisan Office
County Commissioner District 1
- John Roskelley (Prefers Democratic Party)
- Todd Mielke (Prefers Republican Party)
- _____

County Commissioner District 2
- Shelly O'Quinn (Prefers Republican Party)
- Rob Chase (Prefers Republican Party)
- Daryl Romeyn (Prefers Democratic Party)
- _____

Judicial – Nonpartisan Office
Supreme Court Justice Pos 2
- Douglas W. McQuaid
- Susan Owens
- Scott Stafne
- _____

Supreme Court Justice Pos 8
(Six year short and full term)
- Bruce O. Danielson
- Steve Gonzalez
- _____

Supreme Court Justice Pos 9
- Bruce Hilyer
- Sheryl Gordon McCloud
- Richard B. Sanders
- John W. Landenburg
- _____

Court of Appeals Division 3 District 1 Position 1
- Laurel Siddoway
- _____

Local Ballot Measures
City of Cheney

Proposition No. 1 -- City of Cheney
Proposition Submitted by the Cheney City Council for Renewal of Residential Street Utility Tax

The Cheney City Council adopted Resolution E-040 which concerns the continued repair and replacement of residential streets and sidewalks by renewing and extending the voter approved four percent tax on electrical energy and natural gas businesses to January 1, 2027. Should this proposition be:

- Approved
- Rejected

Proposition No. 2 -- City of Cheney
Proposition Submitted by the Cheney City Council for Emergency Medical Services - Six Year Levy

Shall the City of Cheney be authorized, pursuant to RCW 84.52.069, to renew regular property tax levies upon the taxable property within the City of Cheney at rate of fifty cents (.50) per thousand dollars of assessed valuation for six consecutive years, commencing in 2012 for collection in 2013 for the purpose of funding emergency medical service.

- Yes
- No

Local Ballot Measures

Spokane Valley Fire Department

Proposition No. 1
Spokane Valley Fire Department
Replacement Maintenance and Operation Levy

The Board of Fire Commissioners of Spokane Valley Fire Department adopted Resolution No. 2012-356 concerning a proposition to meet the District's maintenance and operation needs. This proposition would authorize the District to levy the following taxes, in replacement of an existing levy, upon all taxable property within the District, for support of the District's Expense Fund maintenance and operation expenditures as follows:

Levy in 2012 for collection in 2013, a levy rate of approximately $1.70 per $1,000 of assessed value, to provide a levy amount of $16,400,000; levy in 2013 for collection in 2014, a levy rate of approximately $1.70 per $1,000 of assessed value, to provide a levy amount of $16,400,000; and levy in 2014 for collection in 2015, a levy rate of approximately $1.70 per $1,000 of assessed value, to provide a levy amount of $16,400,000. As specified in Resolution No. 2012-356.

Should the proposition be approved?

- Levy Yes
- Levy No

Fire Protection District No. 9

Proposition No. 1
Spokane County Fire Protection District No. 9
Replacement Maintenance and Operation Levy

The Board of Commissioners of Spokane County Fire Protection District No. 9 adopted Resolution No. 12-11 concerning a proposition to meet the District's maintenance and operation needs. This proposition would authorize the District to levy the following taxes, in place of an existing levy, upon all taxable property within the District, for support of the District's Expense Fund expenditures for maintenance, operations and emergency medical services:

Levy in 2012 for collection in 2013, a levy rate of approximately $1.73 per $1,000 of assessed value, to provide a levy amount of $6,091,000; Levy in 2013 for collection in 2014, a levy rate of approximately $1.77 per $1,000 of assessed value, to provide a levy amount of $6,294,000.

Should the proposition be approved?

- Levy Yes
- Levy No

For this office only: In order to vote for a precinct committee officer, a partisan office, you must affirm that you are a Democrat or a Republican and may vote only for one candidate from the party you select. Your vote for a candidate affirms your affiliation with the same party as the candidate. This preference is private and will not be matched to your name or shared.

- Democrat
  I affirm I am a Democrat
- Republican
  I affirm I am a Republican.

Voter Service Centers will be open on election day only from 7:00 am to 8:00 pm.

Voters may drop off ballots; get replacement ballots; use an Accessible Voting Unit, or receive other assistance as needed on election day.

Downtown Spokane – Elections Office – 1033 W Gardner Ave
Downtown Spokane – STA Plaza – 701 W Riverside Ave
North Spokane – North Spokane Library – 44 E Hawthorne Rd
South Hill – St. Mark's Church – 316 E 24th Ave
Spokane Valley – CenterPlace – 2426 N Discovery Pl
West Plains – Cheney Library – 610 First St

Vote Both Sides of Ballot

End of Ballot