FVAP RESEARCH NOTE

Data Standardization and the 2022 General Election

Introduction

Following the *Uniformed and Overseas Citizens Absentee Voting Act* (*UOCAVA*), the mission of the Federal Voting Assistance Program (FVAP) is to help ensure that active duty military (ADM), their families, and U.S. citizens living abroad are aware of their right to vote and have the tools and resources needed to do so successfully. With this mission in mind, FVAP continues to collect information to better understand the *UOCAVA* population's needs and help them successfully complete the voting process.

Since 2015, FVAP has been working with the Council of State Governments (CSG) on the Overseas Voting Initiative (OVI) to develop an election data standard that captures transactional-level data about *UOCAVA* voters in the Election Administration and Voting Survey (EAVS) Section B (ESB) Data Standard. The collection of transactional data is an innovative way to obtain data about the voting process and measure the impact of congressional reforms like *the Military and Overseas Empowerment Act* of 2009 (*MOVE Act*), which is now part of *UOCAVA*. *UOCAVA* requires states to have at least one electronic option available for *UOCAVA* voters to receive their ballots, and mandates that ballots are to be sent no later than 45 days before the election (given that the voter requested their ballot before that date).

Data obtained through the ESB Data Standard allows one to understand the steps each voter takes throughout a voting process, and to evaluate at which point during that process they may have encountered any obstacles that prevented them from voting. Traditional aggregate data sets obtained through surveys have serious limitations on how much information they can provide on a voter's journey. Given that states and localities across the country collect and store their data using different systems and naming conventions, it is difficult for the data to be compared or combined. The standardized nature of this data set allows to overcome that limitation.

The 2016 General Election was the first election in which a group of states and counties provided ESB data.[1] Since then, ESB data have been collected after every general election from participating states and jurisdictions, and FVAP has published a research note discussing the main findings after each of the general elections.[2] Over the years, six states and three jurisdictions have provided ESB data uninterrupted for every general election, and one state and four jurisdictions have provided data for three of the four iterations. The continuity of this data collection project from the same reporting states and jurisdictions allows comparisons over several election years for more than half of the participating states and jurisdictions. Although some participants have stopped providing their ESB data at some point in the last eight years, there are always new states and jurisdictions joining in the ESB data collection.

Overall, 18 states and 10 jurisdictions have provided ESB data at some point in the last four general elections. Table 1 shows the states and jurisdictions that have provided ESB data each year.

---

[1] For more information on the 2016 ESB Data Standard findings see Federal Voting Assistance Program (2018). "Data Standardization and the Impact of Ballot Transmission timing and Mode on *UOCAVA* Voting." Available at https://www.fvap.gov/uploads/FVAP/Reports/609-ResearchNote11_DataStd_FINAL.pdf

[2] Federal Voting Assistance Program (2019). "Data Standardization and the *UOCAVA* Voting Pipeline." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2018-ESB-Research-Note.pdf ; and Federal Voting Assistance Program (2021). "Data Standardization and the 2020 General Election." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2020-ESB-Research-Note_Final.pdf

Table 1. ESB Reporting States and Jurisdictions, 2016–2022.[3] Six States and Three Jurisdictions Have Provided ESB Data Uninterrupted for Every General Election Since 2016.

State/Jurisdiction	2016	2018	2020	2022
Alabama		✓	✓	
Bexar County (TX)	✓	✓	✓	✓
Chicago City (IL)			✓	
Colorado	✓	✓	✓	✓
Cook County (IL)	✓			
Delaware				✓
Escambia County (FL)		✓	✓	✓
Georgia				✓
Harris County (TX)	✓	✓	✓	✓
Ingham County (MI)		✓	✓	✓
Kentucky			✓	
Los Angeles County (CA)	✓	✓	✓	✓
Maryland				✓
Massachusetts			✓ *	✓
Nebraska				✓
New Jersey	✓	✓	✓	✓
New York	✓	✓	✓	✓
North Carolina	✓	✓		
Okaloosa County (FL)	✓		✓	✓
Orange County (CA)	✓	✓	✓	
Oregon	✓			
Pennsylvania			✓ *	
Richmond County (GA)		✓	✓	✓
South Carolina	✓	✓	✓	✓
Texas		✓	✓	✓
Vermont			✓	✓
Washington	✓	✓	✓	✓
Wisconsin	✓	✓	✓	✓

*The data provided by this state have high levels of missingness and were not used in the 2020 ESB Research Note.

The 2022 ESB Data Standard includes a total of 13 reporting states and four jurisdictions. The reporting states and jurisdictions logged 305,871 ballot requests in ESB, which accounts for 41.5% of all *UOCAVA* voters registered and eligible to vote nationwide for the 2022 General Election.[4] The ESB coverage of the *UOCAVA* voters in 2022—calculated using the reported registered *UOCAVA*

[3] Only Bexar County and Harris County reported ESB data in 2016 in Texas. In 2018, Texas started to report ESB data on the rest of their jurisdictions. Richmond County (GA) reported ESB data in 2018 and 2020, and for 2022, it reported data along with the rest of the state of Georgia.

[4] The number of *UOCAVA* voters registered and eligible to vote is used as a proxy on the total number of ballots requested and is obtained from item B1a in the Election Administration and Voting Survey (EAVS). See https://www.eac.gov/sites/default/files/2023-06/2022_EAVS_Report_508c.pdf

voters in EAVS as a baseline—is slightly higher to that observed in 2020 (41.0%), and notably higher than in 2018 (33.2%) and 2016 (28.3%).

One of the goals of the ESB Data Standard is to reduce the burden for states and jurisdictions when completing Section B of the EAVS by simply providing a standardized data set that covers all the items in EAVS without the need to calculate and input data manually for each of the items for every single jurisdiction in the state. With that goal in mind, we compare in this research note how EAVS results obtained through ESB data align with the actual EAVS data reported by participating states and jurisdictions, and comment on the findings.

Additionally, this research note takes advantage of the transactional nature of the data to provide a reliable and valid snapshot of how and when *UOCAVA* voters complete steps of the voting process. Having dates associated with each step of the voting process is particularly relevant when trying to understand the impact that *UOCAVA* protections such as the 45-day deadline and the availability of electronic methods to transmit blank ballots to voters have on the voting process.

This research note follows the *UOCAVA* voting pipeline framework introduced in the 2018 ESB research note.[5] The framework uses the pipeline as an analogy for the voting process, in which the beginning of the pipeline is associated with the first step in the *UOCAVA* voting process—the voter's registration and ballot request—and the end of the pipeline is associated with the end of the voting process—having a ballot counted. Along the way, there are potential drop-out points in the voting process—similar to a pipeline.

The Three Main Steps of the *UOCAVA* Voting Process:

Ballot Request: This is the first step and refers to when a *UOCAVA* voter requests a ballot for an upcoming election to their corresponding election offices using a Federal Post Card Application (FPCA), state application, or other accepted form. This step is sometimes conducted at the same time as the *UOCAVA* voter registration (but not necessarily).

Ballot Transmission: Once an election office receives a ballot request and deems it valid, the election office transmits a ballot to the *UOCAVA* voter ahead of the election.

Ballot Return: The *UOCAVA* voter sends a filled ballot with their voted ballot and corresponding information back to the election office, and the ballot is received by the election office. The final step in the voting process is this returned ballot being accepted (counted) by the election office.

The analyses are organized using the order that *UOCAVA* voters follow in their journey to cast a ballot. First, we examine the 2022 *UOCAVA* voting pipeline and describe the three basic steps in the *UOCAVA* voting process: (1) ballot request, (2) ballot transmission, and (3) ballot return. After identifying where in the pipeline *UOCAVA* voters face the greatest obstacles, we take a closer look at

[5] Federal Voting Assistance Program (2020). "Data Standardization and the *UOCAVA* Voting Pipeline." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2018-ESB-Research-Note.pdf

each step, assessing how factors like timing, mode, and voter type relate to success rates in completing the process and having a vote successfully counted. Additionally, we compare results with previous elections to identify any changes in how and when *UOCAVA* voters cast their ballots. The results of these analyses are used to continue informing FVAP programmatic and outreach efforts to better serve *UOCAVA* voters and help them successfully complete the voting process. Additionally, some of the analyses in this research note were used to inform a section of FVAP's 2022 Report to Congress.[6]

This research note is organized into the following sections:

- Key Research Questions
- Methodology
- ESB and EAVS
- The 2022 *UOCAVA* Voting Pipeline
- The Voting Journey: Ballot Request, Transmission, and Return
- Conclusions

The analyses in this research note find that:

- Ballot return rates calculated using ESB data were within five percentage points of the same rates calculated using EAVS items for 14 of the 17 ESB participants, supporting the reliability of ESB data.
- Ballots requested via an FPCA during the election year had higher return rates than those requested via state application in 2022.
- Ballot return rates were higher for ballots requested during the election year, and ballots requested before the 45-day deadline had lower rejection rates than those requested closer to Election Day.

Key Research Questions

This research note addresses the following research questions:

- How do ESB produced metrics align with EAVS? Are there big differences in the readiness of ESB participants to use only ESB to report their Section B EAVS data?
- How do congressional requirements such as the 45-day deadline for ballot transmission and the requirement to allow an electronic mode of ballot transmission impact the voting process?
- What are the main differences between Uniformed Services and overseas citizens in their approach to the voting process?
- How did the 2022 General Election compare with previous general elections in terms of timing of completion of each step in the voting process?

Methodology

Data for this research note were collected from 13 states and four jurisdictions that used the ESB Data Standard template to report transactional data for the 2022 General Election. In this research note, transactional data refers to individual pieces of information showing when and how any

[6] The results reported in this research note are expected to be different from those reported in the 2022 Report to Congress because the data used in the 2022 Report to Congress were current as of May 2023, and did not have data from all the states and jurisdictions covered in this research note, which uses data current as of August 2023.

transaction between a voter and the election office occurred across the *UOCAVA* voting process. In addition to information about the voting transactions, the ESB Data Standard template collects information on voter type (i.e., overseas citizen or Uniformed Services),[7] country of residence, and voting jurisdiction.[8] Duplicate observations accounted for about 5% of the observations and were not included in the final analyses to avoid overrepresentation of the duplicate cases. After these adjustments, the final sample used in this report added up to 305,871 observations (41.5% of all the *UOCAVA* population).[9]

To compare results between ESB and EAVS, the items in Section B of the EAVS were reproduced using ESB variables. Multiple ESB variables were combined to create each of the items. For example, to obtain the total number of ballots transmitted to Uniformed Services in the 2022 General Election (item B5b in EAVS), the variables covering ballot transmission date and method, and voter type were used to find the total number of observations that belonged to that category. To evaluate how ESB-produced metrics aligned with EAVS responses, the ESB result was divided by the EAVS result to easily represent which metric was higher and how large the difference between the two was.

The analyses on the *UOCAVA* voting process use a descriptive approach and focus on the potential impact of factors, like ballot request timing and ballot transmission type, on the success of the voting process. Because the ESB Data Standard is a census of all *UOCAVA* transactions in reporting states and jurisdictions, analyses are not weighted; however, they are only representative of these states and localities with valid data.[10,11] Georgia, Wisconsin and Ingham County (MI) reported the method of ballot return for all their observations as "Untracked." Because these jurisdictions only allow *UOCAVA* voters to return ballots by mail, their values for method of ballot return were changed from "Untracked" to "Mail." Additionally, there were reporting states and jurisdictions that could not provide data for all the fields in ESB. When data were missing for a field relevant for an analysis, their observations were excluded and their exclusion is reported in a footnote. For example, if a state did not provide information on voter type, then observations from that state were excluded in analyses of differences between Uniformed Services and overseas citizens, but they were included in other analyses where voter type was not a variable of interest.[12]

In addition to case-by-case exclusions, some analyses use only a set of states and jurisdictions.[13] Particularly, when comparing data from different elections, the analysis may focus only on states and jurisdictions that provided data for all the elections involved to avoid the potential confound effect of including different states and jurisdictions for multiyear comparisons.

---

[7] Throughout the research note, the term "Uniformed Services" is used to refer to active duty military, their spouses, and eligible dependents covered by *UOCAVA*.
[8] Each transaction is assigned a random alphanumerical reference number for individual transactions to identify the lifecycle of the ballot transaction without collecting personal information.
[9] The number of *UOCAVA* voters registered and eligible to vote is used as a proxy on the total number of ballots requested and is obtained from item B1a in the EAVS. See https://www.eac.gov/sites/default/files/2023-06/2022_EAVS_Report_508c.pdf
[10] See Appendix A for a complete tabulation of the 2022 ESB data by variable.
[11] Data were representative of exported data sets by localities as of August 22, 2023. Because this data set includes those who, at some point, submitted an absentee ballot request, indicating their *UOCAVA* status as either Uniformed Services or overseas citizen, the unit of analysis represents *UOCAVA* ballot requestors.
[12] See Appendix B for detailed missingness by variable.
[13] When additional "case-by-case exclusions" are present in a particular analysis, they are flagged and the rationale behind the exclusion is discussed.

ESB and EAVS

The ultimate goal of the ESB data standard is to reduce the burden of responding to Section B of the EAVS for states and localities. Rather than pulling the data and manually entering the data on the EAVS template for each jurisdiction in the state, participants can reproduce a query on the state or jurisdiction database and create a data set containing all the necessary variables to accurately fill out Section B of the EAVS and provide additional insight on the journey of *UOCAVA* voters.

This section of the research note explores to what extent the current ESB data provided by participating states and jurisdictions align with the data they reported for the 2022 EAVS Section B. Section B of the EAVS consists of 80 items covering the following topics about *UOCAVA* voters:

- B1: Registered *UOCAVA* voters;
- B2–B4: FPCAs received and rejected;
- B5–B8: Transmitted ballots and method of ballot transmission;
- B9–B13: Ballots returned and method of ballot return;
- B14–B17: Ballots counted and method of ballot return;
- B18–B22: Ballots rejected and rejection reason; and
- B23–B27: Federal Write-In Absentee Ballots (FWAB) received, counted, and rejected.

With the exception of item B4a ("Total FPCAs rejected because they were received late"), the other 79 items in Section B of the EAVS can be obtained by aggregating ESB data. For example, to calculate the number of ballots transmitted by mail to Uniformed Services (item B6c in the 2022 EAVS), one can use the ESB variables "BallotTransmissionDate," "BallotTransmissionMethod," and "VoterType" to find the number of observations that meet the criteria (i.e., ballot was transmitted by mail before the election and the voter is Uniformed Services) and obtain the aggregate number as reported in EAVS. This process is relatively straightforward and can be done with minimal effort after a state or jurisdiction provides its ESB data—given that these data are correctly standardized and there are no missing fields (see Appendix C for details).

There is, however, one limitation when using aggregated ESB data to calculate EAVS totals. In EAVS, most items allow states and jurisdictions to respond "Does not apply" or "Data not available" and provide comments where additional context or information is necessary to interpret the data reported in an item. The "Does not apply" and "Data not available" options are used when the information requested in an item does not apply to the state (e.g., a state that does not allow for email ballot return will fill with "Does not apply" items B16a to B16c of the EAVS), or when the state/jurisdiction does not collect that particular information (e.g., some states/jurisdictions may not track the number of FWABs rejected because the regular absentee ballot was received—items B26a to B26c of the EAVS—and thus will fill those items with "Data not available").

Because of the transactional nature of the ESB data, using ESB variables to calculate the aggregate results will yield a result of zero or missing in the cases discussed above, although the actual reason for not having data in those items may be more nuanced. Also, in the ESB, it is difficult if not impossible to interpret when an EAVS item would need to be filled zero or missing. For example, if a jurisdiction does not have any observation with a ballot return method categorized as "fax," depending on whether that jurisdiction allows such ballot return method would define whether the

result should be a zero (i.e., the method is allowed but no ballots were returned by fax) or missing (i.e., if the jurisdiction does not allow to return ballots by fax, which could also be categorized as "Does not apply").

To calculate the level of alignment between ESB-produced metrics and EAVS responses, we used the following formula:

$$Level\ of\ Alignment = \frac{ESB\ produced\ metric}{EAVS\ result}\ x\ 100$$

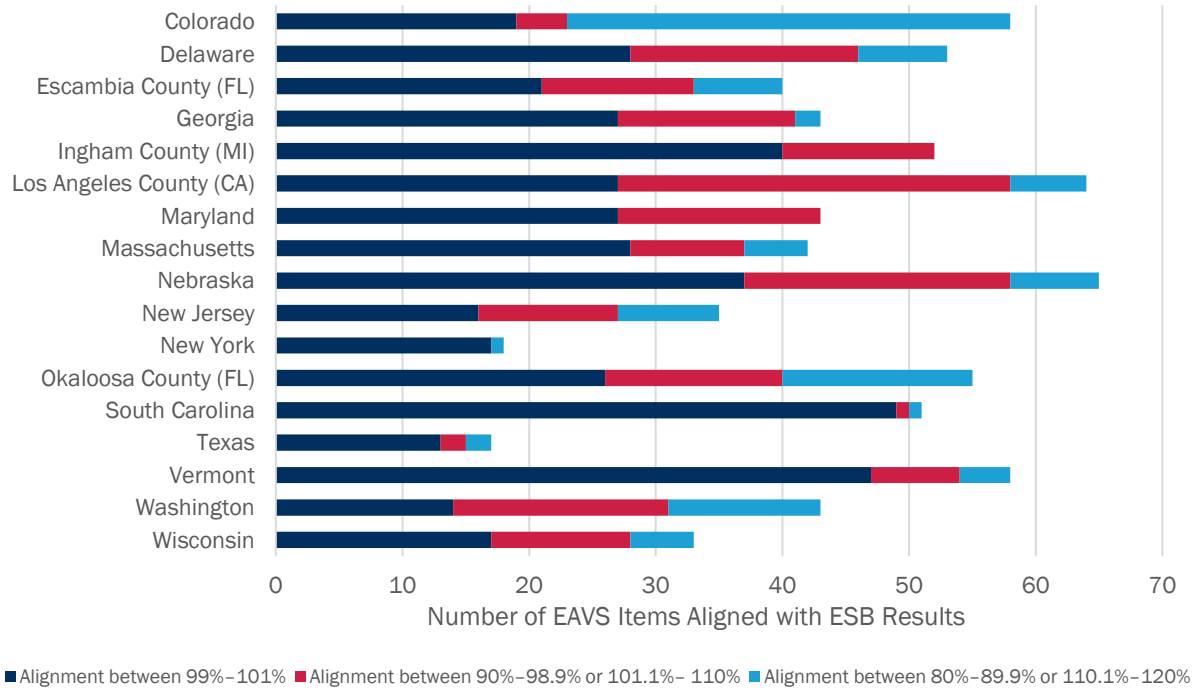
A level of alignment of 100% means that both approaches yield the same result, results below 100% mean that the ESB-produced metric underestimates the EAVS result, and values above 100% mean that the ESB-produced metric overestimates the EAVS result. The percentage helps to understand the degree to which the approaches do not align, so that a result of 50% would mean that the ESB-produced metric is half the EAVS reported result for a given item, and 200% would mean that the ESB-produced metric is twice as large as the EAVS reporter result. Two additional transformations were conducted to improve interpretation of the results. First, if the results for the ESB-produced metric and the EAVS result were both zeroes or missing, then the level of alignment was recoded as 100%, showing perfect alignment. Second, if the EAVS result was zero and the ESB-produced metric was more than zero, then the result was recoded to 0%, showing no alignment between the two metrics.

After comparing how EAVS responses generated using ESB data align with the actual EAVS responses that participating states and jurisdictions provided for the 2022 EAVS, we saw that some of the items that better align were the "core" items in Section B of the EAVS (the items reporting the number of ballots transmitted, returned and counted). For example, for total ballots transmitted (item B5a in EAVS) for most participating states and jurisdictions (13 out of 17), the level of alignment falls between 90% and 110%. On the other hand, some of the items reporting information on FWABs and on rejected ballots (B18 to B27 in EAVS) had lower levels of alignment between ESB and EAVS. For example, for total ballots rejected (item B18a in EAVS), only three of the 17 participating states and jurisdictions had a level of alignment falling between 90% and 110%. It is worth noting that the FWABs and ballot-rejected categories are more susceptible to larger discrepancies because the numbers reported in these fields are usually small, and thus a minimal deviation may turn into a large discrepancy (e.g., if a jurisdiction reports four rejected ballots in EAVS and three in ESB, the level of alignment would be 75%, even though the absolute difference between the two numbers is minimal).

To better assess how each participating state and jurisdiction's ESB data aligns with the EAVS, we calculated how many of the 79 EAVS Section B items had a level of alignment falling within one percentage point of perfect alignment (i.e., with a level of alignment between 99% and 101%), between 1.1 and 10 percentage points of perfect alignment (i.e., with a level of alignment between 90% and 98.9% or between 101.1% and 110%), and between 10.1 and 20 percentage points of perfect alignment (i.e., with a level of alignment between 80% and 89.9% or between 110.1% and 120%), when calculated using ESB data. Figure 1 shows the results of these calculations, and we can see that Ingham County (MI), Los Angeles County (CA), Nebraska, South Carolina, and Vermont had 50 or more of the 79 EAVS items calculated using ESB data obtaining levels of alignment ranging between 90% and 110%. It is also notable that South Carolina and Vermont had over 45 of

the 79 EAVS items calculated using ESB data falling within one percentage point of what they reported in the 2022 EAVS, thus showing nearly identical results in over half of the items.

Figure 1. For Over Half of States and Jurisdictions Using ESB To Calculate EAVS Items Yields Results Within 20 Percentage Points of the Reported EAVS Result in Most EAVS Section B Items.



Not surprisingly, all states improve the number of items aligned between ESB and EAVS when the range for the threshold is increased (i.e., when the range to consider a result a match is increased from being within 1% to 10% or to 20%). However, there are cases when the gains are particularly notable. For example, Colorado increases from 23 to 58 items matched when changing the threshold from alignment within 10% to alignment within 20%. For states like New York, South Carolina, and Texas, the number of matches is similar independent of the threshold. This occurrence shows that for some participants, there are items created using ESB that produce very close—if not the same—results as the EAVS, but that for the items that do not align, the results are very different.

A closer look at these mismatches show that there are different factors causing them. For example, South Carolina's results show that most of the mismatches are because this state responded "Data not available" to multiple items in EAVS, like those covering the return method for ballots counted (items B15 to B17), whereas ESB successfully produced the totals for those items, showing the potential of ESB for filling out Section B of the EAVS. In the case of Texas, on the other hand, a good portion of the mismatches are caused because this state was not able to provide the information about voter type in ESB (i.e., whether a voter was Uniformed Services or overseas citizen). while the state did break down by voter type their responses in the EAVS, leading to the mismatch. These

factors should be considered when interpreting the graph, in particular, recognizing that a mismatch does not necessarily mean that ESB could not successfully replicate the EAVS result, but that it may have been able to provide more information than that reported by the state/jurisdiction in the EAVS.

In addition to comparing ESB and EAVS results item by item, we tested how the results align between the two when calculating metrics that involve multiple EAVS items. Ballot return rate was selected for this comparison because it is one of the most relevant metrics when analyzing the voting process. The ballot return rate calculated with EAVS corresponds to the number of ballots returned by *UOCAVA* voters (item B9a in EAVS) divided by the number of ballots transmitted to *UOCAVA* voters (item B5a in EAVS). With the ESB, ballot return rate was calculated as the number of observations with information on ballot transmission and return that were not FWABs divided by all observations with information on ballot transmission that were not FWABs. The resulting return rates are shown in Figure 2.

Figure 2. Ballot Return Rates for the 2022 General Election Are Almost Identical When Using ESB and EAVS Data for Most Participating States and Jurisdictions.

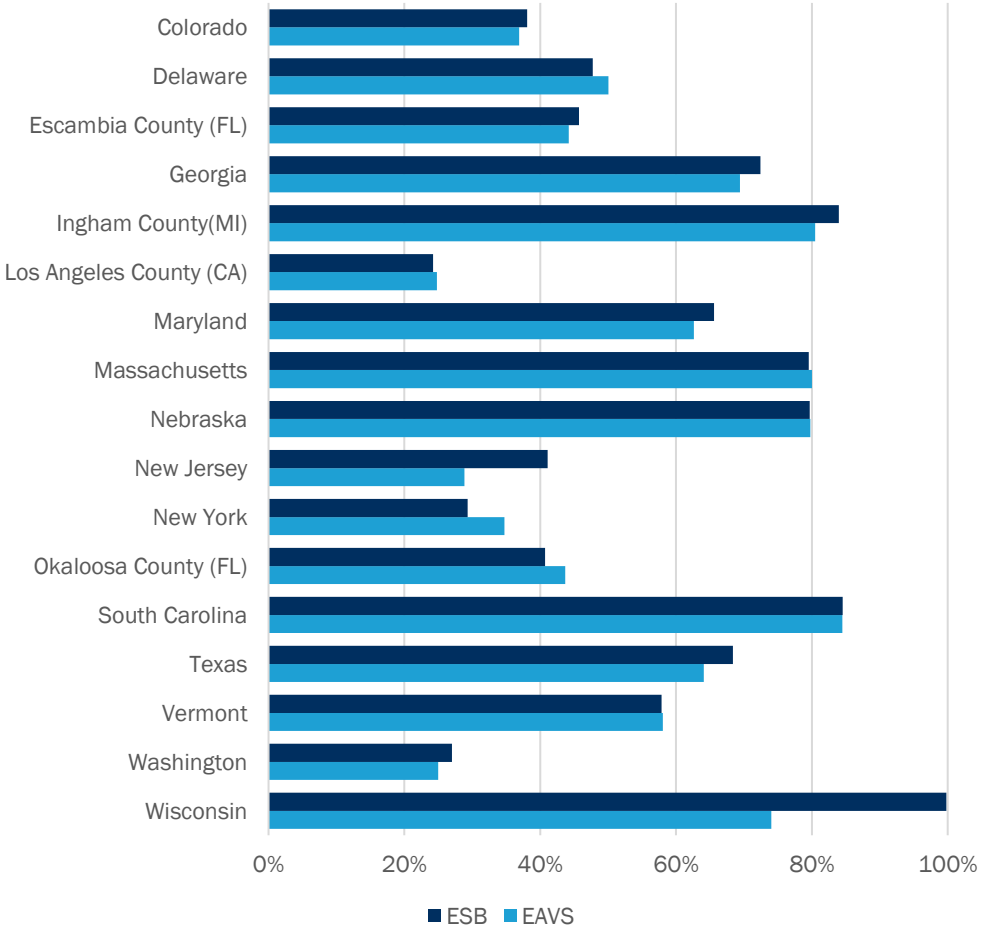


Figure 2 shows that for 14 of the 17 participating states and jurisdictions, the ballot return rate calculated using ESB data led to a result within 5 percentage points of the metric calculated using EAVS data. Additionally, for New York, one of the three participants that had larger discrepancies, the difference was only 5.4 percentage points. Finally, in the case of Wisconsin, the large discrepancy between the two approaches—and the unlikely result of 100% ballots returned when calculated using ESB data—is a result of missing data for ballot transmission date for about one-third of Wisconsin's observations. Because ESB only considers a ballot transmitted if there is information about a ballot's transmission date and method of transmission, 2,027 out of Wisconsin's 6,247 observations were not included in the ballot return rate calculation because of a missing ballot transmission date. At the same time, most of these observations corresponded to non-returned ballots, suggesting that if not for these missing data points, the return rate would have been lower than 100% and closer to that obtained when using EAVS data.

Overall, based on the comparison results between ESB and EAVS data for each of the participating states and jurisdictions, about half of the participants are in a good position to produce EAVS items using ESB data for most of Section B. Some participants, however, may need additional assessments of their data to identify areas for improvement that need to be addressed before they can reliably complete Section B of the EAVS using ESB data (e.g., Texas' need to provide information on voter type in ESB).

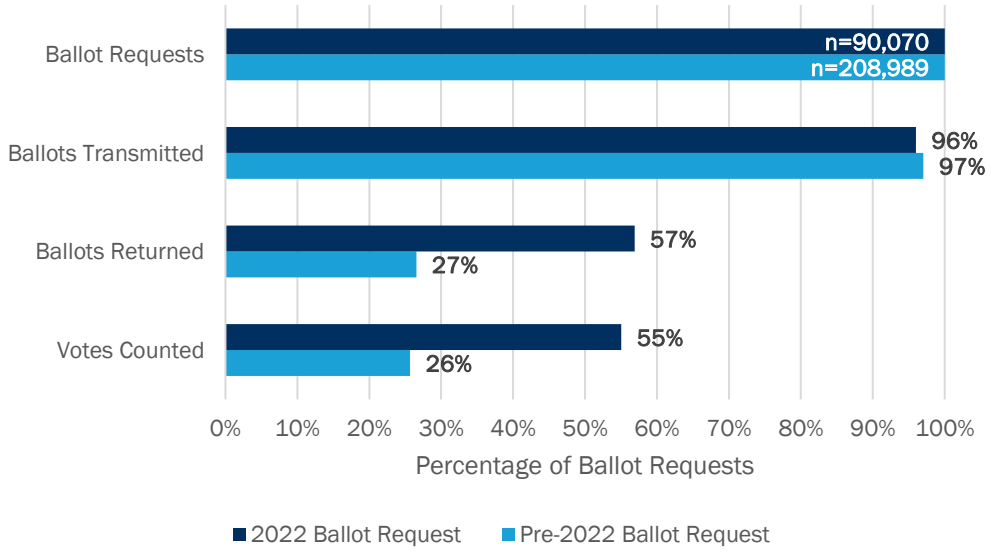
The 2022 *UOCAVA* Voting Pipeline

The voting pipeline begins with a request for an absentee ballot and ends with a returned ballot. However, there are many potential drop-out points along the pipeline that may prevent a voter from continuing to later phases in the voting process. Figure 3 shows the basic *UOCAVA* voting pipeline using the 2022 ESB data. In the figure, *UOCAVA* voters are divided into two groups: (1) those who submitted an absentee ballot request during the 2022 election year before Election Day, and (2) those who had requested an absentee ballot before 2022. In total, there were 305,871 unique ballot requestors in the 2022 ESB data set. Of those, 90,070 (29.4%) requests were made in 2022 by Election Day, and 208,989 (68.3%) were made in earlier years.[14]

[14] There were 6,809 (2.2%) observations with ballot requests dated after Election Day 2022, and three observations with no ballot request date reported.

Data Standardization and the 2022 General Election

Figure 3. *UOCAVA* Voting Pipeline—Over Half of Ballots Requested During the Election Year Were Returned and Counted



Election offices transmitted ballots to 96.7% of those from whom a ballot request was received by Election Day.[15] Overall, less than 0.1% of all ballot requests received by Election Day (43 ballot requests) were rejected, 1.3% of ballot requests were canceled, and 1.2% of ballot requests were categorized as pending. Overall, most voters who enter the *UOCAVA* voting pipeline by submitting a ballot request successfully complete this phase in the process and move on to have a blank ballot transmitted to them by their local election office.

The greatest drop-off occurred between ballot transmission and ballot return, when over half of ballots (63.2%) drop out of the process. ESB data shows 289,282 absentee ballots were transmitted in 2022, and 106,574 returned ballots were ultimately received by election offices.[16]

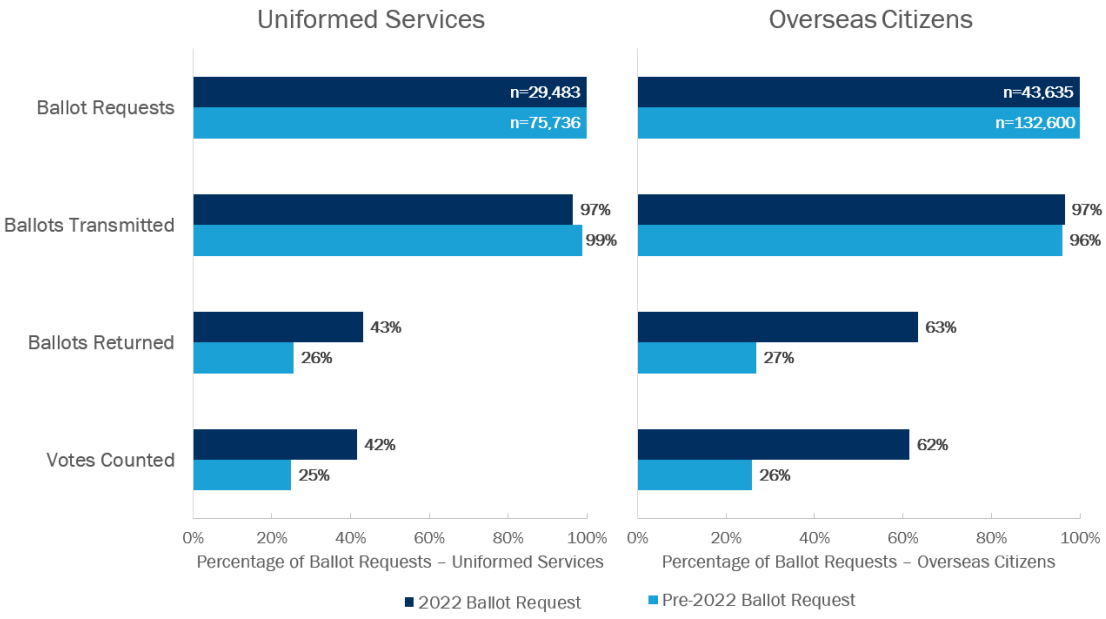
For voters who successfully returned an absentee ballot, nearly all made it to the end of the pipeline and had their returned ballot counted. ESB data show that 96.9% of returned ballots were ultimately counted. Ballot requests received during the year of the election are associated with a higher ballot return rate, similar to the findings in the 2018 and 2020 ESB research notes.

The overall patterns seen in the *UOCAVA* voting pipeline are consistent across different *UOCAVA* voter types. Figure 4 shows the voting pipeline for Uniformed Services and overseas citizens. Overall, there were more overseas citizen voters than military voters represented in the 2022 ESB data. Across both groups, and consistent with the findings in the overall data, the primary drop-off

[15] Nationally, approximately 1.9% of ballot requests made using an FPCA were rejected according to data reported in the 2022 EAVS.
[16] This number includes both regular absentee ballots and FWABs, which can be used as a back-up ballot in place of a regular absentee ballot, effectively overriding drop-off associated with ballot transmission issues. In some states, the FWAB may be used even if a *UOCAVA* voter does not first submit an absentee ballot request. Overall, 1,350 voters used the FWAB for absentee ballot return. For only one of these voters, the FWAB was both the ballot request and returned ballot type.

point in the *UOCAVA* voting pipeline occurred between ballot transmission and ballot return, with the year of ballot request once again playing an important role in the return rate. Ballots requested in 2022 were returned at higher rates among Uniformed Services (43.2%) and overseas citizens (63.4%) compared to those requested in previous years (25.6% for Uniformed Services and 26.9% for overseas citizens). For all voter types, the majority of voters who successfully returned an absentee ballot ultimately had that ballot counted in the 2022 General Election.

Figure 4. Uniformed Services Returned over 40% of the Ballots Requested in 2022 and Overseas Citizens Returned over 60% of the Ballots Requested in 2022



The Voting Journey: Ballot Request, Transmission, and Return

The main steps of the *UOCAVA* voting process are consistent across states and can be broken down into ballot request, transmission, and return. However, the paths taken by voters to complete each step vary substantially. Differences in how and when voters complete each step affect voters' ability to successfully complete the process and have their ballot counted. State policy and other factors—such as mail reliability for citizens living abroad—also affect how voters complete each step of the voting process. This section examines how voters navigated each phase in the *UOCAVA* voting pipeline, the results, and potential factors that affected voters' decisions during the process.

Ballot Requests

The first steps in the voting process are registering to vote and requesting an absentee ballot. For *UOCAVA* voters, these two processes may be completed at the same time using an FPCA, which is accepted by all states as both a registration and absentee ballot request form. Absentee ballots may also be requested using state ballot request forms or other procedures, which may or may not offer the same protections as an FPCA. States differ in requirements for ballot requests, particularly in

how often this step needs to be completed, with some states requiring that a new request be submitted for every election and others continuing to recognize a ballot request as valid until the voter moves or cancels their request.

ESB tracks several distinct types of ballot requests, of which FPCAs and state applications account for 90.0% of all requests.[17] The FPCA is unique to *UOCAVA* voters, allowing them to both register and request an absentee ballot and ensuring that they are given the special protections offered by *UOCAVA* and the *MOVE Act*—such as having a ballot transmitted at least 45 days before an election and ensuring that at least one electronic mode of blank ballot transmission is available to voters.

Figure 5. Ballot Return Rate by Request Type and Year—Highest Ballot Return Rate Among Absentee Ballot Requestors Using an FPCA and Those Submitting a Request in the Current Election Year[18]

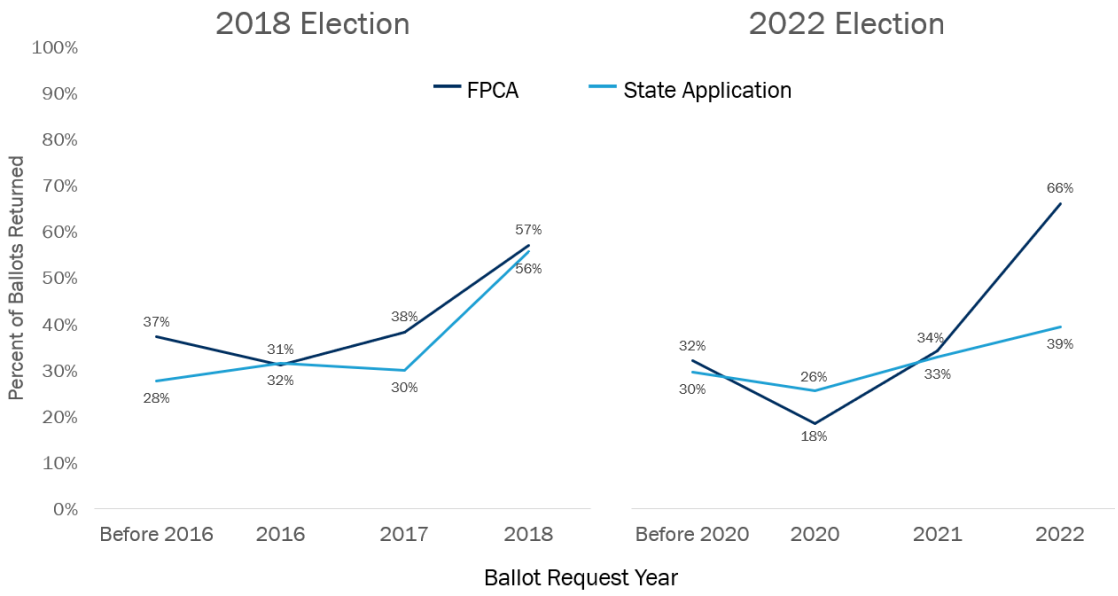


Figure 5 shows the absentee ballot return rate by request year and method for the 2022 and 2018 general elections. For ballot requests originated during the election year, those *UOCAVA* voters who used an FPCA were more likely to return their absentee ballot than voters who requested a ballot using a state application. For ballots requested before the election year, results are mixed, but ballots requested using an FPCA were usually returned at higher rates than those requested using a state application. This relationship may reflect greater *UOCAVA* protections for those using an FPCA and differences in the voters who use this form versus other methods of ballot request (e.g., voters using an FPCA may be more knowledgeable than others about the *UOCAVA* voting process). The

[17] The other four ballot request categories covered in ESB (i.e., "FWAB," "Informal Request," "NVRA," and "Untracked") accounted for 10.0% of all ballot requests.

[18] These figures only include ESB participants that provided data for the 2018 and 2022 general elections (i.e., Colorado, Escambia County [FL], Ingham County [MI], Los Angeles County [CA], New Jersey, New York, Richmond County [GA], South Carolina, Texas, Washington, and Wisconsin). The graphs exclude observations that do not provide data on ballot request type (or have a request type other than FPCA or state application). They also exclude observations with missing data on ballot request date. Data from Ingham County (MI), and Richmond County (GA) in 2022 are not present in the graphs because they reported that the type of all their ballot requests was "Other."

relationship also emphasizes the importance of FPCAs as a method for ballot requests and shows how completing the FPCA on the year of the election yields the best outcomes.

The use of FPCAs and state applications for each of the *UOCAVA* populations shows very different trends. Uniformed Services heavily relied on state applications to register to vote, as 81.1% of them used this form compared to the 11.2% who used FPCAs and the 7.7% who used other methods. This stands in contrast with overseas citizens, for whom FPCAs was the most common form of registration (46.9%), followed by state applications (40.8%) and other registration methods (12.3%).

When looking at when those FPCAs and state applications were filed, FPCAs outnumbered state applications in election years (i.e., 2022 and 2020), whereas in non-election years and for older applications (i.e., 2021 and pre-2020 applications), state applications accounted for about three times the number of FPCAs. Finally, although undeliverable ballots were not common when using either of these ballot request methods, FPCAs had an undeliverable ballot rate over four times lower than state applications (0.1% compared to 0.5%), which suggests that those voters who used FPCAs during the election year had more accurate information on record, and supports FVAP's recommendation for *UOCAVA* voters to submit an FPCA every year to ensure their information is up to date and they receive a ballot in a timely fashion.

Ballot Request Timeline

Previous ESB research notes have found that during midterm elections, there is a large portion of ballot requests that originate from the previous presidential election, showing a "carryover" effect, whereas for presidential elections, a majority of the ballot requests originate during the election year. The results for the 2022 General Election follow these results, and show that among ESB participants, almost as many ballot requests for the 2022 General Election originated in 2020 as in 2022. These results, however, differ by state/jurisdiction, and are dependent on state policies for ballot requests' validity periods. For example, for the states of Delaware, Georgia, Ingham County (MI), Nebraska, South Carolina, and Vermont, FPCAs are valid for one general election, and they reported that over 99.5% of the ballot requests originated in 2022.[19] On the other hand, in the states of California and New Jersey, FPCAs are valid as ballot requests until the voter moves or cancels their registration, and New Jersey and Los Angeles County (CA) reported that over 45% of their ballot requests originated in 2020.

For ballot requests received during the election year, the timeline was very similar to that of the 2018 General Election among states and jurisdictions that provided data for both elections.[20] For both elections, just over half of the ballot requests filed during the election year were received before the 45-day deadline, and over 40% of the ballot requests filed during the election year were received between the 45-day deadline and Election Day. Additionally, most *UOCAVA* voters who requested a ballot in 2022 used an electronic method to send their ballot request. Figure 6 shows that electronic request methods outnumbered mail ballot requests during the whole year. For both

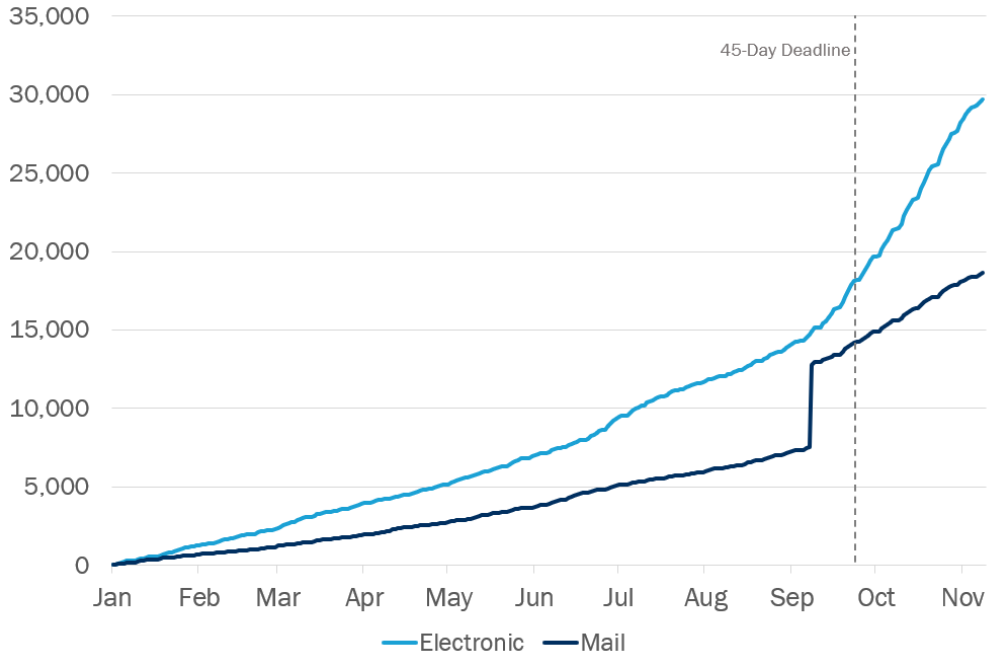
[19] Information on states' policy on the FPCA validity period was obtained from EAC's Policy Survey. Election Assistance Commission (2023). "Election Administration and Voting Survey," pp. 57–134. Available at: https://www.eac.gov/sites/default/files/2023-06/2022_EAVS_Report_508c.pdf

[20] The ESB participants that provided data in both 2018 and 2022 are: Colorado, New Jersey, New York, South Carolina, Texas, Washington, Wisconsin, Escambia County (FL), Ingham County (MI), Los Angeles County (CA), and Richmond County (GA).

request methods, the pace of ballot requests was relatively steady until mid-September, in which a change in the graph's slope shows the increased number of ballot requests received per day by election offices as Election Day approached.[21]

Finally, when comparing the timeline of ballot requests during the election year between Uniformed Services and overseas citizens, the results show that 69.3% of Uniformed Services voters requested a ballot in 2022 before the 45-day deadline, whereas 59.1% of overseas citizens requested a ballot by that date, showing that a larger portion of Uniformed Services voters started the voting process early compared to overseas citizens.

Figure 6. Timeline for Mail and Electronic Ballot Requests in 2022—ESB Data Standard Jurisdictions Reported Higher Volume of Electronic Ballot Requests Than Mail Ballot Requests in 2022[22]



Impact of Ballot Request Timing on Voting Process Completion

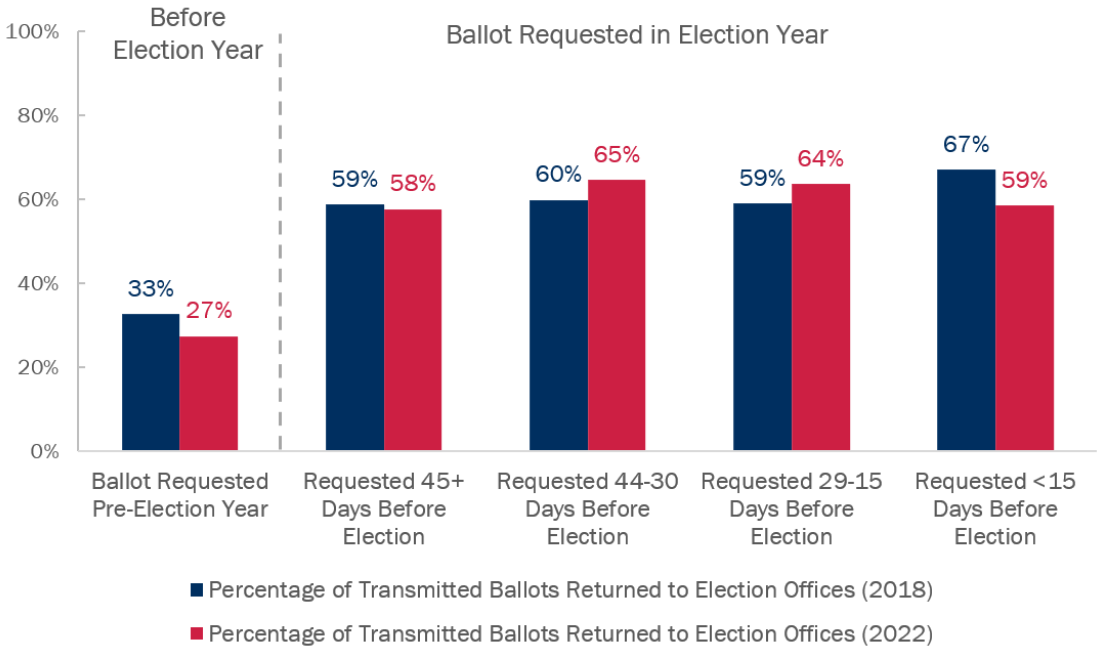
Ballot request timing impacts subsequent steps in the *UOCAVA* voting process in various ways. In the previous midterm election of 2018, later requestors had high ballot return rates, likely because those who actively requested a ballot were more interested in voting and more motivated to complete the process than those who received a ballot automatically as a result of a request made

[21] The spike in mail ballot requests received in early September, which corresponds to over 5,000 ballot requests recorded on September 8, 2023, by Okaloosa County (FL) are the result of an administrative process by which the county updates the ballot request record for *UOCAVA* voters who had requested ballots for all elections within the past two general election cycles to ensure they receive a ballot for the current election.

[22] The states of Georgia, Massachusetts, Nebraska, New York, and Texas, and the jurisdiction of Ingham County (MI) are excluded from analyses for reporting all requests made by mode "Untracked." Ninety-nine percent of Delaware's observations are also excluded for reporting most requests made by mode "Untracked." This graph includes observations with ballot requests dated between January 1, 2022, and Election Day.

during a previous election year.[23] Figure 7 shows a similar trend for ballots returned for the 2022 General Election, as ballots requested during the election year had return rates over twice as high as ballots requested before 2022. Interestingly, ballots requested after the 45-day deadline had slightly higher return rates than those requested during the election year before the deadline, suggesting that even though those voters took action late, they were very motivated to complete the voting process. Among states and jurisdictions participating in the 2022 ESB Data Standard, 208,989 ballot requests were received before 2022 (69.9% of the total), whereas 55,661 ballot requests were received in 2022 by the 45-day deadline (18.6%), and 34,409 (11.5%) were received between the 45-day deadline and Election Day.

Figure 7. Percentage of Ballots Returned Based on the Date the Ballot was Requested—Ballots Requested in the Election Year had Higher Return Rates Than Ballots Requested Previous Years



Ballot Request Method and *UOCAVA* Populations

In addition to when ballots are requested and what type of ballot request is used, there are differences in how the ballots are requested. Most states allow *UOCAVA* voters to file a ballot request by mail or by using some electronic method such as email, fax, or an online portal. For the 2022 General Election, reporting ESB states and jurisdictions received 36.9% of the ballot requests through an electronic method and 31.2% of ballot requests by mail.[24] These results align with 2020's ESB research note, in which electronic ballot requests outnumbered mail ballot requests. It is worth noting that in the first research notes, ESB data from 2018 and 2016 showed more ballots

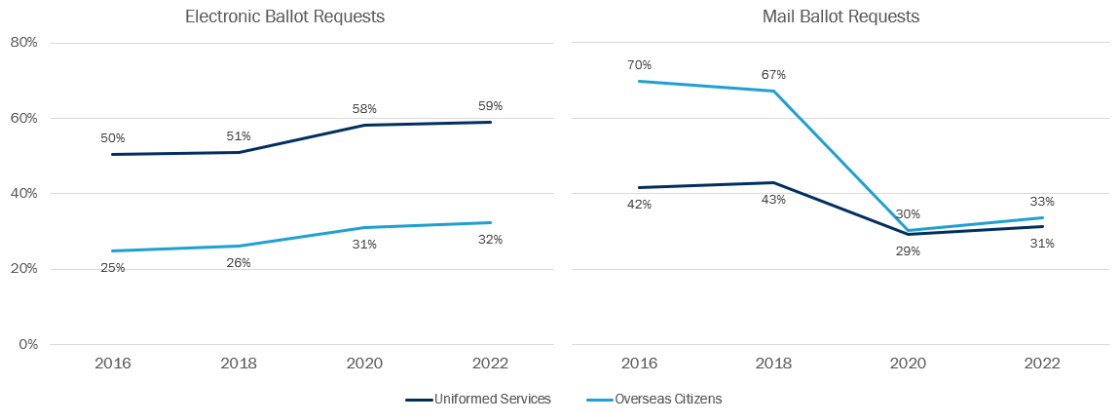
[23] Federal Voting Assistance Program (2020). "Data Standardization and the *UOCAVA* Voting Pipeline." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2018-ESB-Research-Note.pdf
[24] In-person, phone, and other ballot requests accounted for 2.9% of ballot requests, and 28.9% of ballot requests were categorized as "Untracked."

requested via mail than electronic methods, and that the shift shown in 2020—likely impacted to some degree by COVID-19's disruptions on mail—carried over to 2022.[25,26] Since a large portion of the ballot requests for the 2022 General Election originated in 2020, it will be interesting to see whether this trend continues in 2024 and establishes electronic ballot requests as the preferred method for *UOCAVA* voters to start their voting process.

Within the electronic methods used to request a ballot, online ballot requests accounted for 89.8% of the 110,487 ballots requested electronically, email accounted for 10.1% of electronic ballot requests, and fax accounted for 0.1% of those requests.

Interestingly, when comparing Uniformed Services and overseas citizens in their use of mail and electronic methods to request their absentee ballots, we found that among states and jurisdictions that have reported ESB data uninterruptedly between 2016 and 2022, Uniformed Services relied more on electronic ballot requests than overseas citizens during those years. However, overseas citizens' use of mail to request a ballot decreased notably in 2020 compared to the previous two general elections—probably triggered by the limitations on international mail during the COVID-19 pandemic—and remained at a similar level for the 2022 General Election, as shown in Figure 8. Conversely, there is an increase among overseas citizens in the use of electronic modes to request a ballot starting in 2020. However, the increase does not match the decrease observed in mail ballot requests for these years, as about one-third of the ballot requests for overseas citizens during 2020 and 2022 are categorized as "Untracked."[27]

Figure 8. Percentage of Ballots Requested by Mode and Election—Uniformed Services Rely More on Electronic Ballot Request Than Overseas Citizens.[28]



[25] The reporting states and jurisdictions were slightly different in 2022, 2020, 2018, and 2016, so the comparison needs to be taken with caution (see Table 1 for details).
[26] Mail disruptions particularly affected overseas citizens, as overseas Uniformed Services use overseas military mail, which is operated independently of regular civilian mail.
[27] For both 2020 and 2022, the state of New York accounts for most of the observations that have the ballot request method categorized as "Untracked."
[28] This graph only uses data from states and jurisdictions that have reported ESB data from 2016 until 2022 uninterruptedly. In particular: Colorado, New Jersey, New York, South Carolina, Washington, Wisconsin, Bexar County (TX), Harris County (TX), and Los Angeles County (CA).

Data Standardization and the 2022 General Election

The high use of electronic methods to request a ballot among Uniformed Services stands in contrast to the tendency of this *UOCAVA* population to rely more on mail to have their ballots transmitted from and returned to the election office. The difference in the use of the electronic ballot request between overseas citizens and Uniformed Services needs to be further analyzed, but factors like the state where the ballot request originated, the messaging and communications to Uniformed Services, and the availability of each of the ballot request methods may have played a role in the results.

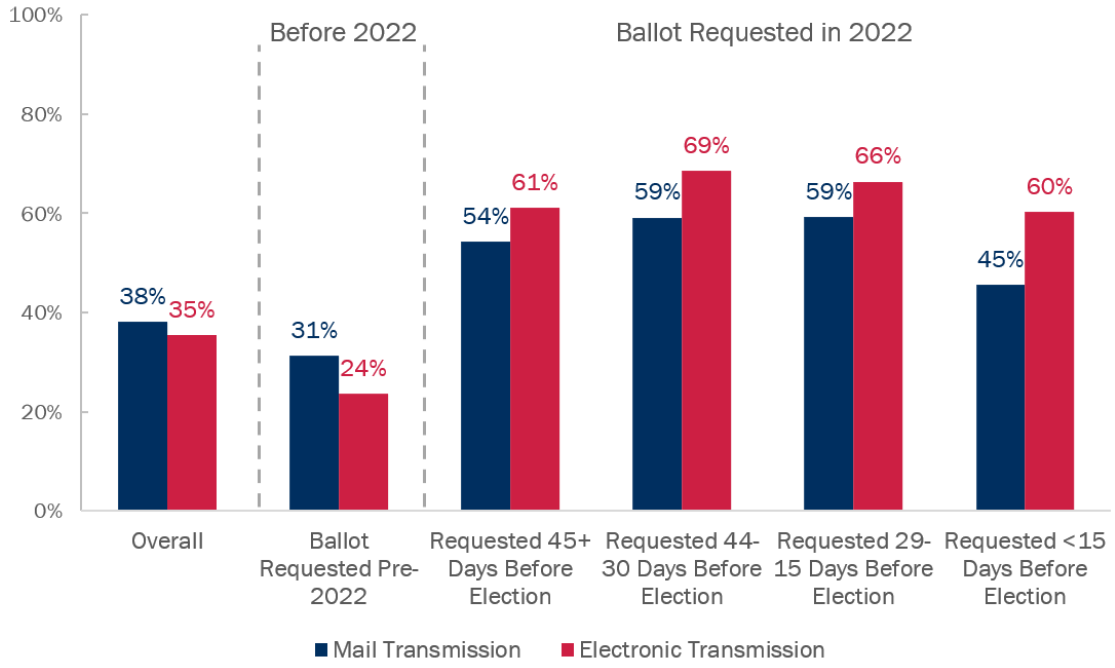
Ballot Transmission

The second step of the process, once a ballot request is received and has been deemed valid, is the transmission of a blank ballot to the *UOCAVA* voter. In compliance with *the MOVE Act*, states are required to transmit ballots to voters at least 45 days before Election Day (given that the voter has requested a ballot before that deadline). Data from reporting states and jurisdictions confirm their adherence to the *UOCAVA*, as 92.5% of ballot requests dated before the 45-day deadline led to a ballot transmission by September 24, 2022 (the date of the 45-day deadline for the 2022 General Election).

For those ballot requests received past the 45-day deadline, ESB data show that election offices diligently processed the requests and transmitted blank ballots to *UOCAVA* voters, usually in a week or less from the date they received the ballot request. Although the ballot request processing times are generally short, ballot requests received too close to Election Day delay the start of the voting process and make it more difficult for voters to successfully complete the process on time.

Among participating states and jurisdictions, 47.5% of ballots transmitted to voters who requested their ballot by the 45-day deadline were sent by regular mail (including requests made in 2022 and earlier), whereas electronic transmissions accounted for 52.2% of ballots requested before the deadline. Electronic delivery increased for ballot requests received after the 45-day deadline; overall, 60.0% of these ballots were transmitted electronically and 37.5% by regular mail. Figure 9 shows return rates for ballots transmitted by mail or by electronic means by the timing of ballot request (and, subsequently, transmission). The return rates were higher for ballots transmitted electronically when the ballot was requested during the election year. The difference between the return rates for ballots transmitted by mail and electronically is particularly notable for ballots requested within two weeks of Election Day, when 60.3% of ballots transmitted electronically were returned, compared to 45.5% of ballots that were transmitted by mail. This result is likely impacted by the time that the mail ballot takes to reach its destination compared to when they are transmitted electronically. It also emphasizes the importance for voters to take action early to have enough time to complete the voting process, and the usefulness of electronic methods to reach voters when there are time constraints.

Figure 9. Percentage of Ballots Returned by Transmission Mode—Ballots Transmitted by Mail Had Higher Return Rates Than Ballots Transmitted Electronically Overall



Among the ballots that were returned by voters to the election office, only 3.1% were ultimately rejected. Looking at the rejection rate by ballot request timing and transmission mode in 2022, the most relevant factor was the timing of the ballot request. Independent of the ballot transmission method, less than 3.2% of ballots requested in 2022 before the 45-day deadline were ultimately rejected. The rejection rate increased to 3.9% for ballots requested between 29 and 15 days before Election Day. Ballots requested in the two weeks leading to the election had the highest rejection rates (5.0%), with a higher rejection rate for ballots transmitted electronically (6.0%) compared to ballots transmitted by mail (4.7%).

The data on ballot return and ballot rejection show the importance of both when a ballot request is received and how the ballot is then transmitted to the *UOCAVA* voter, based on the ability of that voter to successfully complete the *UOCAVA* voting process. Ideally, ballot requests should be submitted early during the election year, before the 45-day deadline, to increase the chances of completing the voting process successfully.

Ballot Return

The last step of the voting process is the return of a voter's completed ballot to the election office, where it is ultimately processed and either counted or rejected. Of the total 289,282 ballots transmitted by participating states and jurisdictions for the 2022 General Election, 106,574 were

returned for counting (for an overall ballot return rate of 36.8%).[29] Depending on state policies, *UOCAVA* voters may have different options to return their completed ballots. Among reporting states and jurisdictions in the 2022 ESB, the states of Colorado, Delaware, Massachusetts, Nebraska, New Jersey, South Carolina, and Washington and the jurisdictions of Escambia County (FL), Los Angeles County (CA), and Okaloosa County (FL) allowed for some form of electronic ballot return (i.e., email, online, and/or fax), whereas Georgia, Maryland, New York, Texas, Vermont, Wisconsin, and Ingham County (MI) required that *UOCAVA* voters return absentee ballots by regular mail.[30]

Figure 10: Cumulative Number of Ballots Returned by Date and Mode—Electronic Ballot Return and Mail Ballot Return Were Used at a Similar Rate in States Allowing Electronic Return in 2022

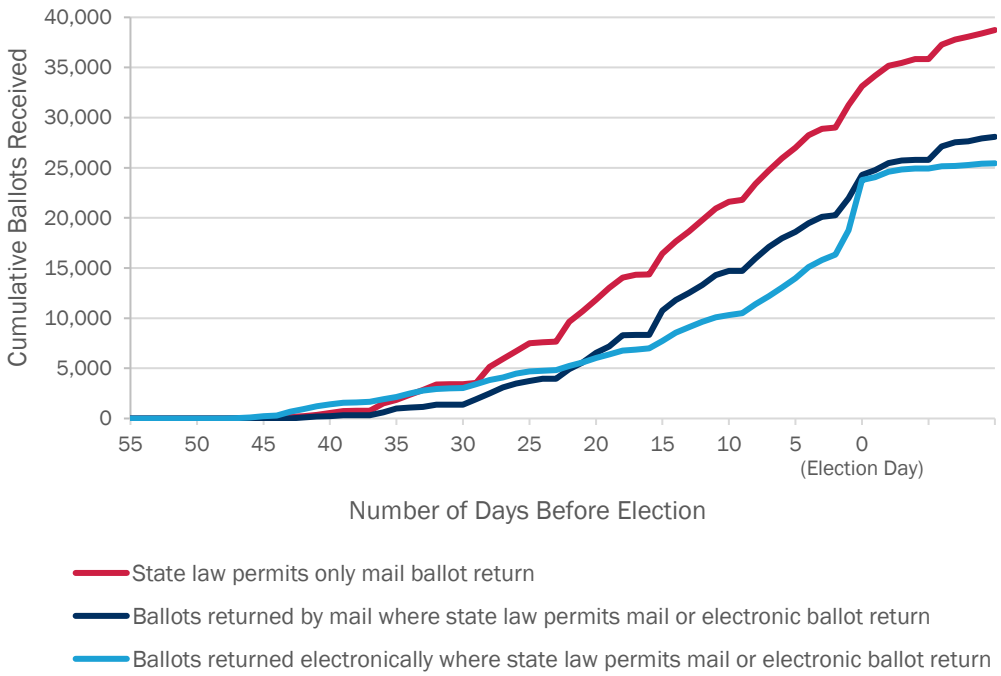


Figure 10 presents the timeline and mode used by voters to return their ballots. The red line shows ballots returned by mail in those states that only allow mail as a form of ballot return, and the blue lines show ballots returned by mail (dark blue) and electronically (light blue) in states that allow for both ballot return options. The graph shows that mail return was overall the most-used method of ballot return by *UOCAVA* voters in 2022. However, state policies impact voter behavior, with *UOCAVA* voters in states that allow electronic return using electronic methods at almost the same rate as regular mail to return their ballots. When comparing the return timeline with previous elections, we

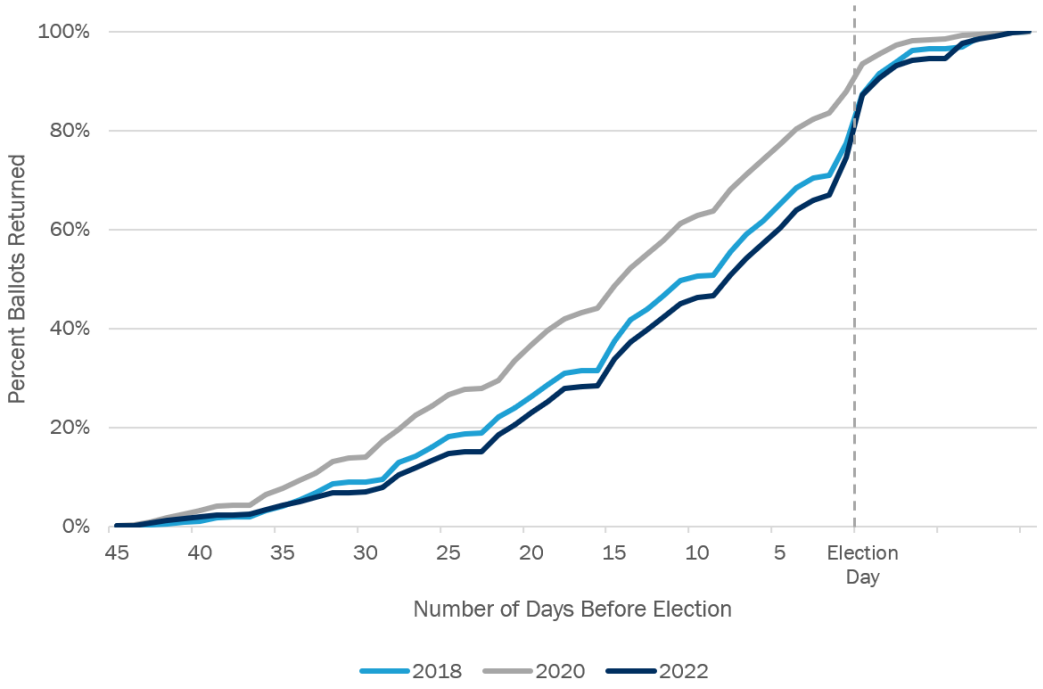
[29] In this research note, the term "returned ballots" refers to ballots that were received and processed by election offices. There might be instances when a voter did return a ballot but it might not have reached the election office, or it did but past the Election Day and canvass deadline and was then not recorded. Those ballots, which were actually returned by the voter, will not be included in the data since they were not ultimately recorded.
[30] Federal Voting Assistance Program (2021). "2022–2023 Voting Assistance Guide." Some of these states allowed electronic ballot return only in very particular circumstances and thus were included in the group allowing only mail ballot return. Texas allows for fax ballot return to *UOCAVA* voters located in a hostile fire area.

found that in 2022 there was a big spike in the number of ballots returned electronically close to Election Day. This is likely because some voters, knowing they could return their ballot electronically, waited until close to Election Day to cast their ballots. In comparison, ballots returned by mail followed a steadier pace throughout the weeks leading to Election Day. This phenomenon was also present in 2018 for ESB reporting participants. Interestingly, in 2020, electronic ballot return followed a very similar pace as mail ballot return and did not experience such a heavy increase close to Election Day. This could have been related to the uncertainty about how the COVID-19 pandemic could impact ballot return, and voters preferred to not wait until the last minute to cast their ballots to ensure their ballot was counted.

To further analyze the ballot return timeline, we compared the ballot return timeline for the last three general elections in reporting states and jurisdictions that have provided ESB data uninterruptedly since 2018.[31] Figure 11 shows that in 2020, *UOCAVA* voters returned their ballots considerably earlier than in 2018 and 2022. In 2020, voters seemed to have followed the recommendations of returning their ballots as early as possible to avoid potential pandemic-related delays and to ensure that their ballots were counted. Overall, ballots in 2022 were received slightly later than those for the 2018 midterm election, and about five days later than those for the 2020 presidential election; for example, 60% of the ballots were returned five days before Election Day in 2022, whereas the 60% mark was reached six days before Election Day in 2018 and 11 days before Election Day in 2020.

[31] The states and jurisdictions included are Colorado, New Jersey, New York, South Carolina, Texas, Washington, Wisconsin, Escambia County (FL), Ingham County (MI), Los Angeles County (CA), and Richmond County (GA).

Figure 11: Cumulative Percentage of Ballots Returned, 2018—2022. *UOCAVA* Voters Returned Their Ballots Earlier in 2020 Than in the Previous Two General Elections.



After a ballot is returned by the voter and arrives at the election office, officials review it to confirm whether the ballot is valid and should be counted or whether it does not comply with the corresponding requirements and should be rejected. Table 2 shows the outcomes of the ballots returned by *UOCAVA* voters for the 2022 election, including the reasons for ballot rejection. Among the reporting states and jurisdictions, only 3.1% of the ballots returned were ultimately rejected. The most common rejection reasons were "Missing the voting deadline" (1.2%), "Other" (0.9%), "Mismatch of voter signature" (0.5%), and "Missing the voter's signature" (0.5%). The category "Other" includes categories that were too small to be reported independently (e.g., postmark issues) and is also used when a reason for ballot rejection cannot be identified among the options provided in the data standard.

Table 2. Outcome of Ballots Returned—Most Ballots Returned by *UOCAVA* Voters Were Ultimately Counted[32]

Ballot Outcome	Percentage of All Ballots Returned
Counted Ballot	96.9%
Rejected Ballot—Missed Deadline	1.2%
Rejected Ballot—Other	0.9%
Rejected Ballot—Mismatch Voter Signature	0.5%
Rejected Ballot—Missing Voter Signature	0.5%

[32] Reporting states and jurisdictions provide additional details in an open-ended field about the reasons for ballots rejected because of "Other." Those details were further analyzed and categorized to find underlying rejection categories. The category "Incorrect or Invalid Ballot" was created in this table to account for all the ballots that were initially categorized as "Other" but reported in the open-ended field that were rejected because the ballot was invalid or incorrect.

Conclusion

The number of reporting states and jurisdictions for the ESB Data Standard continues to represent a sizable portion of the total *UOCAVA* population, and the supporting analyses continue to show the advantages of transactional data when analyzing the voting process. Additionally, the comparison between ESB-produced metrics and EAVS results show that some participating states and jurisdictions are getting close to potentially providing ESB data and complete Section B of the EAVS automatically using the ESB data set. The advantage of this process is not only that the states and jurisdictions can reduce their time burden to report EAVS data, as they will be providing a standardized version of their *UOCAVA* voter records, but also that the ESB transactional data can go beyond the aggregate-level data reported in EAVS and allow for more nuanced research that can provide further insights to election officials on the *UOCAVA* voting experience and processes that might need attention.

Although the prospect of having new states provide data about *UOCAVA* voting through ESB instead of manually completing Section B of the EAVS is closer than in previous elections, there are still some areas that need to be reviewed to ensure data is accurate and no information is lost in the transition. For example, as referenced in this research note, items in EAVS that states responded to with "Does not apply" or "Data not available" cannot be easily identified in ESB, where a lack of data in a field may be because there was no data to report, because that data is not tracked, or because that item does not apply to that particular state. Additionally, there are differences in the readiness among the different ESB-participating states and jurisdictions. Some are in a good position to be able to report all EAVS metrics using ESB, whereas others still are missing some important fields in ESB that make it impossible to provide information to all the items in Section B.

Independent of the readiness for reporting EAVS data with ESB, it is clear that the transactional data collected through ESB creates a better understanding of voter behavior and the importance of congressional reforms that provide additional protections to the *UOCAVA* population (e.g., the requirement of sending a blank ballot to *UOCAVA* voters at least 45 days before the election). The availability of dates associated with each of the main steps in the voting process (i.e., ballot request, ballot transmission, and ballot return) provides additional insight into the voting process. The results of this analysis show that ballot return rates were higher for ballots requested during the election year, and that ballots requested before the 45-day deadline had lower rejection rates than those requested closer to Election Day. This demonstrates the importance for voters to take action early to be able to successfully complete the voting process.

In addition to the 45-day deadline, the use of FPCAs and requesting the ballot during the election year were associated with higher ballot return rates—much like in the 2018 and 2020 elections. FPCAs provide increased protections to the *UOCAVA* population and guarantee that they can receive a ballot through an electronic method. Additionally, in-year ballot requests help to ensure that a voter's information is up to date and that their state will send them a ballot for the upcoming election, since many states require that a ballot request be submitted every election year. These results align with best practices encouraged by FVAP for *UOCAVA* voters to complete an FPCA every January of every year so that it can be processed in advance of the 45-day deadline, and whenever a voter moves or changes duty station, to ensure that their information is up to date so they receive a ballot in a timely manner.

Data Standardization and the 2022 General Election

The results of this research note also show that Uniformed Services relied more on electronic ballot requests compared to overseas citizens for the last four general elections (i.e., 2016 to 2022). However, overseas citizens increased their use of electronic means to request a ballot for the 2022 General Election, following the trend started in 2020 that led electronic ballot requests to outnumber mail ballot requests for the first time since the ESB data collection started in 2016. One big change when comparing results with the 2020 ESB is that ballots in 2022 were returned later than in 2020 and fell closer to the timeline observed in 2018. This effect is probably the result of the 2020 ballot return being impacted by the COVID-19 pandemic and voters acting early to ensure their ballots arrived on time and were successfully counted. Once the impact of the pandemic diminished, the timeline for ballot return among *UOCAVA* voters returned to pre-pandemic levels.

The findings of this research note contribute to expanding the knowledge on *UOCAVA* voter behavior and provide additional evidence for best practices to successfully complete the voting process. Transactional data also allow for performing an in-depth analysis on the timeline of the voting process and show changes in the 2022 General Election process when compared with the previous general elections.

The continued effort to collect transactional data on the *UOCAVA* voting process and the increase in the number of reporting states and jurisdictions providing data to the ESB Data Standard contribute to the increased insight that these innovative analyses provide on the *UOCAVA* voting experience. FVAP will continue to encourage more states and jurisdictions to participate in this effort so that results can be more representative at the national level; and more states and localities can benefit from the insight gained through this research on best practices and how best to support the military, their families, and overseas citizens with the absentee voting process.

References

Election Assistance Commission (2023). "Election Administration and Voting Survey." Available at: https://www.eac.gov/sites/default/files/2023-06/2022_EAVS_Report_508c.pdf

Federal Voting Assistance Program (2018). "Data Standardization and the Impact of Ballot Transmission timing and Mode on *UOCAVA* Voting." Available at: https://www.fvap.gov/uploads/FVAP/Reports/609-ResearchNote11_DataStd_FINAL.pdf

Federal Voting Assistance Program (2020). "Data Standardization and the *UOCAVA* Voting Pipeline." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2018-ESB-Research-Note.pdf

Federal Voting Assistance Program (2021). "2022 – 2023 Voting Assistance Guide."

Federal Voting Assistance Program (2021). "Data Standardization and the 2020 General Election." Available at: https://www.fvap.gov/uploads/FVAP/Reports/2020-ESB-Research-Note_Final.pdf

Appendix A: Tabulation of 2022 ESB Data

The 2022 Election Administration and Voting Survey Section B (ESB) Data Standard consisted of 305,871 *UOCAVA* voters who requested an absentee ballot for the 2022 General Election. The ESB Data Standard collects data on when and how *UOCAVA* voters requested their ballots, got their ballots transmitted, and how and when they returned them. Results for key variables are reported in this appendix, broken down by demographic subpopulations based on jurisdiction and voter type. Sample sizes (*n*'s) are included for each category.

State/Jurisdiction Name. This table breaks down the voting state/jurisdiction from the *UOCAVA* voters represented in the sample [*n* =305,871].

State/Jurisdiction	Percent of Total Sample
Colorado (*n* = 32,985)	10.8%
Delaware (*n* = 1,133)	0.4%
Escambia (FL) (*n* = 7,235)	2.4%
Georgia (*n* = 7,207)	2.4%
Ingham (MI) (*n* = 406)	0.1%
Los Angeles (CA) (*n* = 32,359)	10.6%
Maryland (*n* = 7,350)	2.4%
Massachusetts (*n* = 5,575)	1.8%
Nebraska (*n* = 703)	0.2%
New Jersey (*n* = 9,856)	3.2%
New York (*n* = 47,962)	15.7%
Okaloosa (FL) (*n* = 7,223)	2.4%
South Carolina (*n* = 2,370)	0.8%
Texas (*n* = 17,238)	5.6%
Vermont (*n* = 869)	0.3%
Washington (*n* = 119,153)	39.0%
Wisconsin (*n* = 6,247)	2.0%

Application Request Type. This table breaks down the type of ballot request.

	Application Request Type					
	FPCA	State Application	FWAB[33]	NVRA[34]	Informal Request[35]	Untracked
Respondents (*n* = 305,871)	37.1%	53.1%	0.0%	0.0%	0.2%	9.5%
Jurisdiction						
Colorado (*n* = 32,985)	15.9%	62.3%	0.0%	0.0%	0.0%	21.8%
Delaware (*n* = 1,133)	99.9%	0.0%	0.1%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	16.1%	78.2%	0.0%	0.0%	5.7%	0.0%
Georgia (*n* = 7,207)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Ingham (MI) (*n* = 406)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Los Angeles (CA) (*n* = 32,359)	28.2%	71.8%	0.0%	0.0%	0.0%	0.0%
Maryland (*n* = 7,350)	63.3%	2.7%	0.0%	0.0%	0.0%	33.9%
Massachusetts (*n* = 5,575)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Nebraska (*n* = 703)	91.2%	7.0%	1.8%	0.0%	0.0%	0.0%
New Jersey (*n* = 9,856)	92.6%	6.4%	0.0%	0.0%	0.0%	1.0%
New York (*n* = 47,962)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL) (*n* = 7,223)	21.1%	74.1%	0.0%	0.0%	4.7%	0.0%
South Carolina (*n* = 2,370)	14.1%	85.1%	0.1%	0.7%	0.0%	0.0%
Texas (*n* = 17,238)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Vermont (*n* = 869)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Washington (*n* = 119,153)	12.1%	87.9%	0.0%	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	15.3%	0.0%	0.4%	0.0%	0.0%	84.4%
Voter Type						
Uniformed Services (*n* = 109,524)	11.0%	81.6%	0.0%	0.0%	0.6%	6.8%
Overseas Citizen (*n* = 178,729)	47.0%	40.8%	0.0%	0.0%	0.1%	12.1%

[33] In some states, the Federal Write-In Absentee Ballots (FWAB) can be used as both a form of registration and ballot transmission at the same time.
[34] NVRA refers to the National Voter Registration Act, which established a National Voter Registration Form (NVRF).
[35] Informal requests refer to ballots requested through less formal processes, such as a letter or phone call.

Application Request Method. This table breaks down the method by which the application was sent.

Application Request Method								
	Mail	Online	Email	Fax	In-Person	Phone	Other	Untracked
Respondents (*n* = 305,871)	31.1%	33.5%	3.7%	0.0%	2.7%	0.2%	0.0%	28.7%
Jurisdiction								
Colorado (*n* = 32,985)	27.6%	33.6%	11.3%	0.2%	5.4%	0.0%	0.0%	21.8%
Delaware (*n* = 1,133)	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.9%
Escambia (FL) (*n* = 7,235)	79.9%	14.4%	1.2%	0.0%	1.6%	2.8%	0.0%	0.0%
Georgia (*n* = 7,207)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Ingham (MI) (*n* = 406)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Los Angeles (CA) (*n* = 32,359)	66.2%	33.4%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%
Maryland (*n* = 7,350)	17.4%	72.7%	9.4%	0.2%	0.2%	0.0%	0.0%	0.0%
Massachusetts (*n* = 5,575)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Nebraska (*n* = 703)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
New Jersey (*n* = 9,856)	25.6%	0.0%	52.7%	0.1%	21.5%	0.0%	0.0%	0.0%
New York (*n* = 47,962)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Okaloosa (FL) (*n* = 7,223)	88.8%	6.5%	0.5%	0.0%	0.8%	3.5%	0.0%	0.0%
South Carolina (*n* = 2,370)	90.0%	0.9%	5.6%	0.4%	1.2%	1.9%	0.0%	0.0%
Texas (*n* = 17,238)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Vermont (*n* = 869)	10.2%	89.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	38.6%	58.3%	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	6.4%	56.3%	21.6%	0.1%	7.7%	0.0%	0.0%	7.9%
Voter Type								
Uniformed Services (*n* = 109,524)	36.6%	50.8%	1.1%	0.0%	3.5%	0.4%	0.0%	7.6%
Overseas Citizen (*n* = 178,729)	30.8%	26.1%	5.6%	0.1%	2.5%	0.0%	0.0%	34.9%

Application Request Year. This table provides a breakdown by the year the application for an absentee ballot was submitted.

	Application Request Year			
	2022	2021	2020	Pre-2020
Respondents (*n* = 299,059)	30.1%	6.7%	29.7%	33.5%
Jurisdiction				
Colorado (*n* = 32,972)	6.9%	2.0%	34.9%	56.2%
Delaware (*n* = 1,133)	100.0%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	25.5%	74.5%	0.0%	0.0%
Georgia (*n* = 7,206)	99.8%	0.2%	0.0%	0.0%
Ingham (MI) (*n* = 406)	100.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 32,359)	5.4%	4.2%	46.8%	43.5%
Maryland (*n* = 7,349)	96.1%	3.7%	0.1%	0.0%
Massachusetts (*n* = 5,526)	98.2%	0.1%	1.6%	0.1%
Nebraska (*n* = 698)	100.0%	0.0%	0.0%	0.0%
New Jersey (*n* = 9,685)	36.8%	3.3%	56.4%	3.5%
New York (*n* = 46,656)	14.2%	5.9%	63.2%	16.7%
Okaloosa (FL) (*n* = 7,221)	98.3%	1.7%	0.0%	0.0%
South Carolina (*n* = 2,370)	99.7%	0.2%	0.2%	0.0%
Texas (*n* = 17,231)	97.4%	0.0%	0.0%	2.6%
Vermont (*n* = 869)	99.9%	0.1%	0.0%	0.0%
Washington (*n* = 113,897)	16.7%	8.1%	23.6%	51.6%
Wisconsin (*n* = 6,246)	96.0%	0.3%	2.1%	1.5%
Voter Type				
Uniformed Services (*n* = 105,219)	28.0%	12.2%	20.1%	39.7%
Overseas Citizen (*n* = 176,235)	24.8%	4.1%	38.4%	32.8%

Application Request Status: This table breaks down the status of the application requests for absentee ballots.

Application Request Status				
	Accepted	Pending	Rejected	Canceled
Respondents (*n* = 305,871)	97.5%	1.2%	0.0%	1.3%
Jurisdiction				
Colorado (*n* = 32,985)	100.0%	0.0%	0.0%	0.0%
Delaware (*n* = 1,133)	100.0%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	100.0%	0.0%	0.0%	0.0%
Georgia (*n* = 7,207)	99.8%	0.0%	0.2%	0.0%
Ingham (MI) (*n* = 406)	100.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 32,359)	94.8%	4.0%	0.0%	1.1%
Maryland (*n* = 7,350)	100.0%	0.0%	0.0%	0.0%
Massachusetts (*n* = 5,575)	99.3%	0.7%	0.0%	0.0%
Nebraska (*n* = 703)	100.0%	0.0%	0.0%	0.0%
New Jersey (*n* = 9,856)	63.3%	0.0%	0.1%	36.7%
New York (*n* = 47,962)	97.6%	2.4%	0.0%	0.0%
Okaloosa (FL) (*n* = 7,223)	100.0%	0.0%	0.0%	0.0%
South Carolina (*n* = 2,370)	100.0%	0.0%	0.0%	0.0%
Texas (*n* = 17,238)	92.5%	7.4%	0.1%	0.0%
Vermont (*n* = 869)	100.0%	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	100.0%	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	100.0%	0.0%	0.0%	0.0%
Voter Type				
Uniformed Services (*n* = 109,524)	99.4%	0.3%	0.0%	0.3%
Overseas Citizen (*n* = 178,729)	96.8%	1.2%	0.0%	2.0%

Application Request Rejection Type This table breaks down the reason given for why an application request was rejected.

Application Request Rejection Type					
	Invalid	Mismatch Voter Signature	Missing Voter Signature	Other	Untracked
Respondents (*n* = 14,025)	9.2%	0.0%	0.0%	37.9%	52.8%
Jurisdiction					
Colorado (*n* = 7)	0.0%	0.0%	0.0%	0.0%	100.0%
Delaware (*n* = 1)	100.0%	0.0%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 0)	N/A	N/A	N/A	N/A	N/A
Georgia (*n* = 14)	0.0%	0.0%	0.0%	0.0%	100.0%
Ingham (MI) (*n* = 0)	N/A	N/A	N/A	N/A	N/A
Los Angeles (CA) (*n* = 1,668)	77.6%	0.0%	0.0%	22.4%	0.0%
Maryland (*n* = 1)	0.0%	0.0%	0.0%	0.0%	100.0%
Massachusetts (*n* = 40)	0.0%	0.0%	0.0%	100.0%	0.0%
Nebraska (*n* = 0)	N/A	N/A	N/A	N/A	N/A
New Jersey (*n* = 3,622)	0.0%	0.0%	0.0%	100.0%	0.0%
New York (*n* = 1,137)	0.0%	0.0%	0.0%	0.0%	100.0%
Okaloosa (FL) (*n* = 0)	N/A	N/A	N/A	N/A	N/A
South Carolina (*n* = 0)	N/A	N/A	N/A	N/A	N/A
Texas (*n* = 1,288)	0.0%	0.1%	0.1%	99.8%	0.0%
Vermont (*n* = 0)	N/A	N/A	N/A	N/A	N/A
Washington (*n* = 0)	N/A	N/A	N/A	N/A	N/A
Wisconsin (*n* = 6,247)	0.0%	0.0%	0.0%	0.0%	100.0%
Voter Type					
Uniformed Services (*n* = 3,502)	4.9%	0.0%	0.0%	10.9%	84.2%
Overseas Citizen (*n* = 9,179)	11.9%	0.0%	0.0%	39.5%	48.6%

Ballot Transmission Date. This table breaks down the date when an absentee ballot was transmitted to a voter.

	Ballot Transmission Date				
	45 Days or More Before Election Day	30–44 Days Before Election Day	15–29 Days Before Election Day	0–14 Days Before Election Day	After Election Day
Respondents (*n* = 295,459)	82.6%	4.8%	6.2%	6.4%	0.0%
Jurisdiction					
Colorado (*n* = 32,966)	97.5%	0.7%	0.7%	1.1%	0.0%
Delaware (*n* = 1,133)	86.4%	4.4%	4.2%	4.9%	0.0%
Escambia (FL) (*n* = 7,228)	74.4%	17.4%	4.7%	3.6%	0.0%
Georgia (*n* = 7,198)	47.6%	14.7%	24.9%	12.9%	0.0%
Ingham (MI) (*n* = 406)	60.3%	12.8%	17.2%	9.6%	0.0%
Los Angeles (CA) (*n* = 30,874)	97.8%	0.7%	0.9%	0.5%	0.0%
Maryland (*n* = 7,341)	63.5%	8.1%	16.0%	12.3%	0.1%
Massachusetts (*n* = 5,535)	47.2%	13.9%	19.5%	19.3%	0.0%
Nebraska (*n* = 703)	62.6%	12.2%	17.8%	7.1%	0.3%
New Jersey (*n* = 6,287)	71.1%	9.3%	10.5%	9.1%	0.1%
New York (*n* = 45,792)	96.3%	1.2%	1.5%	1.1%	0.0%
Okaloosa (FL) (*n* = 7,220)	89.6%	4.7%	3.0%	2.7%	0.0%
South Carolina (*n* = 2,356)	49.8%	13.5%	19.1%	17.6%	0.0%
Texas (*n* = 16,178)	50.6%	19.0%	20.2%	10.1%	0.0%
Vermont (*n* = 869)	6.7%	65.9%	18.6%	8.7%	0.0%
Washington (*n* = 119,153)	81.8%	3.1%	5.8%	9.3%	0.0%
Wisconsin (*n* = 4,220)	48.6%	15.9%	18.9%	16.6%	0.0%
Voter Type					
Uniformed Services (*n* = 107,465)	84.9%	3.7%	4.8%	6.6%	0.0%
Overseas Citizen (*n* = 171,452)	84.3%	4.1%	5.7%	5.9%	0.0%

Data Standardization and the 2022 General Election

Ballot Transmission Method. This table breaks down the method used to send the ballot to the voter.

Ballot Transmission Method						
	Mail	Email	Online	Fax	In Person	Other
Respondents (*n* = 305,275)	46.3%	45.3%	7.8%	0.0%	0.6%	0.0%
Jurisdiction						
Colorado (*n* = 32,966)	25.9%	74.0%	0.0%	0.0%	0.1%	0.0%
Delaware (*n* = 1,133)	12.8%	87.2%	0.0%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,234)	72.9%	25.3%	0.2%	0.0%	1.5%	0.0%
Georgia (*n* = 7,207)	8.9%	0.0%	91.1%	0.0%	0.0%	0.0%
Ingham (MI) (*n* = 406)	15.5%	84.5%	0.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 30,874)	99.9%	0.0%	0.0%	0.0%	0.1%	0.0%
Maryland (*n* = 7,350)	28.4%	0.1%	71.4%	0.0%	0.1%	0.0%
Massachusetts (*n* = 5,535)	7.3%	92.2%	0.0%	0.1%	0.1%	0.3%
Nebraska (*n* = 702)	12.5%	84.9%	0.0%	0.0%	2.6%	0.0%
New Jersey (*n* = 9,856)	10.3%	89.7%	0.0%	0.0%	0.0%	0.0%
New York (*n* = 47,962)	22.4%	77.6%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL) (*n* = 7,220)	69.3%	29.8%	0.2%	0.0%	0.7%	0.0%
South Carolina (*n* = 2,355)	9.4%	88.7%	1.9%	0.0%	0.0%	0.0%
Texas (*n* = 17,206)	82.3%	17.7%	0.0%	0.0%	0.0%	0.0%
Vermont (*n* = 869)	10.2%	89.8%	0.0%	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	50.2%	39.4%	9.3%	0.0%	1.1%	0.0%
Wisconsin (*n* = 6,247)	26.2%	56.5%	11.0%	0.0%	6.3%	0.0%
Voter Type						
Uniformed Services (*n* = 109,274)	64.7%	28.1%	6.0%	0.0%	1.2%	0.0%
Overseas Citizen (*n* = 177,431)	31.3%	58.7%	9.7%	0.0%	0.3%	0.0%

Data Standardization and the 2022 General Election

Ballot Type. This table breaks down the type of ballot transferred to the voter.

	Ballot Type					
	Absentee	FWAB	Full	Federal	Provisional	Untracked
Respondents (*n* = 279,858)	65.1%	0.5%	14.2%	1.1%	0.0%	19.1%
Jurisdiction						
Colorado (*n* = 32,966)	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Delaware (*n* = 1,133)	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Georgia (*n* = 7,207)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Ingham (MI) (*n* = 406)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Los Angeles (CA) (*n* = 30,874)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Maryland (*n* = 7,350)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Massachusetts (*n* = 5,536)	96.7%	3.3%	0.0%	0.0%	0.0%	0.0%
Nebraska (*n* = 703)	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
New Jersey (*n* = 3,018)	65.1%	34.9%	0.0%	0.0%	0.0%	0.0%
New York (*n* = 45,792)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Okaloosa (FL) (*n* = 7,223)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Carolina (*n* = 2,356)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Texas (*n* = 1,790)	0.4%	0.0%	92.0%	7.7%	0.0%	0.0%
Vermont (*n* = 869)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	0.0%	0.0%	60.1%	39.9%	0.0%	0.0%
Voter Type						
Uniformed Services (*n* = 107,750)	82.5%	0.1%	12.5%	0.0%	0.0%	4.9%
Overseas Citizen (*n* = 169,954)	54.7%	0.8%	14.4%	1.8%	0.0%	28.3%

Ballot Return Date. This table breaks down the date when a ballot was returned.

	Ballot Return Date					
	30+ Days Before Election Day	15–29 Days Before Election Day	1–14 Days Before Election Day	Election Day	1–7 Days After Election Day	8 Days or More After Election Day
Respondents (*n* = 110,097)	7.8%	26.2%	40.0%	11.9%	10.9%	3.2%
Jurisdiction						
Colorado (*n* = 12,547)	9.4%	19.5%	42.0%	28.4%	0.1%	0.6%
Delaware (*n* = 555)	24.7%	25.0%	40.0%	8.5%	1.3%	0.5%
Escambia (FL) (*n* = 3,299)	11.0%	30.8%	44.8%	7.4%	5.3%	0.6%
Georgia (*n* = 5,206)	8.9%	25.0%	42.5%	7.7%	11.5%	4.4%
Ingham (MI) (*n* = 341)	8.2%	42.2%	40.2%	3.5%	4.4%	1.5%
Los Angeles (CA) (*n* = 7,533)	1.5%	25.5%	41.3%	5.0%	19.4%	7.2%
Maryland (*n* = 4,822)	4.8%	16.7%	32.4%	5.3%	22.3%	18.5%
Massachusetts (*n* = 4,424)	13.8%	23.8%	48.1%	13.2%	0.7%	0.4%
Nebraska (*n* = 565)	12.0%	30.6%	43.9%	11.0%	1.6%	0.9%
New Jersey (*n* = 3,018)	16.7%	22.1%	40.0%	12.3%	8.0%	1.0%
New York (*n* = 14,407)	10.6%	40.1%	31.0%	3.1%	11.4%	3.8%
Okaloosa (FL) (*n* = 2,939)	21.3%	32.7%	31.3%	9.6%	4.6%	0.6%
South Carolina (*n* = 1,991)	25.2%	24.5%	39.9%	9.4%	0.9%	0.1%
Texas (*n* = 11,064)	6.0%	31.1%	42.0%	5.6%	13.3%	2.0%
Vermont (*n* = 751)	6.0%	26.1%	34.2%	6.4%	9.7%	17.6%
Washington (*n* = 32,240)	3.0%	21.5%	40.9%	16.6%	15.7%	2.3%
Wisconsin (*n* = 4,395)	12.0%	32.2%	50.0%	5.5%	0.2%	0.1%
Voter Type						
Uniformed Services (*n* = 33,378)	6.2%	23.6%	39.4%	15.3%	14.0%	1.5%
Overseas Citizen (*n* = 65,441)	8.9%	26.8%	40.0%	11.2%	8.9%	4.2%

Ballot Return Method. This table breaks down the method by which an absentee ballot was returned.

Ballot Return Method							
	Mail	Email	Online	Fax	In-Person	Other	Untracked
Respondents (*n* = 112,963)	53.5%	20.7%	0.0%	1.8%	1.2%	9.2%	13.4%
Jurisdiction							
Colorado (*n* = 13,129)	30.2%	68.7%	0.0%	0.2%	0.7%	0.3%	0.0%
Delaware (*n* = 541)	17.6%	80.6%	0.0%	0.7%	1.1%	0.0%	0.0%
Escambia (FL) (*n* = 3,562)	94.9%	0.0%	0.0%	2.5%	2.6%	0.0%	0.0%
Georgia (*n* = 5,206)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ingham (MI) (*n* = 406)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 7,533)	72.3%	0.0%	0.0%	22.9%	0.3%	4.5%	0.0%
Maryland (*n* = 4,827)	85.6%	0.1%	0.0%	0.0%	14.3%	0.0%	0.0%
Massachusetts (*n* = 5,575)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Nebraska (*n* = 560)	54.5%	42.0%	0.0%	3.6%	0.0%	0.0%	0.0%
New Jersey (*n* = 3,018)	19.4%	79.6%	0.0%	0.3%	0.1%	0.7%	0.0%
New York (*n* = 14,407)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL) (*n* = 3,223)	94.5%	0.8%	0.0%	3.5%	1.2%	0.0%	0.0%
South Carolina (*n* = 1,997)	15.2%	84.7%	0.0%	0.1%	0.1%	0.0%	0.0%
Texas (*n* = 11,064)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Vermont (*n* = 503)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Washington (*n* = 33,025)	40.0%	29.1%	0.0%	0.3%	0.2%	30.4%	0.0%
Wisconsin (*n* = 4,387)	91.1%	0.0%	0.0%	0.0%	8.9%	0.0%	0.0%
Voter Type							
Uniformed Services (*n* = 34,959)	64.7%	9.1%	0.0%	0.3%	2.2%	23.1%	0.5%
Overseas Citizen (*n* = 66,713)	54.4%	30.3%	0.0%	2.8%	0.9%	3.5%	8.0%

Data Standardization and the 2022 General Election

Ballot Rejection Type. This table describes the reasons for why a ballot was rejected.

	Ballot Rejection Type									
	Not Timely	Undeliverable	Mismatch Voter Signature	Missing Voter Signature	Voided Spoiled	Postmark	Rejected	Voter Moved	Voter Unregistered	Other
Respondents (*n* = 5,606)	29.6%	19.4%	10.1%	9.8%	2.0%	0.7%	0.5%	0.4%	0.0%	27.4%
Jurisdiction										
Colorado (*n* = 1,324)	3.5%	44.0%	9.7%	24.3%	0.1%	0.0%	0.0%	0.0%	0.0%	18.5%
Delaware (*n* = 24)	25.0%	41.7%	0.0%	0.0%	29.2%	0.0%	0.0%	0.0%	0.0%	4.2%
Escambia (FL) (*n* = 351)	46.4%	47.3%	3.4%	1.7%	0.0%	0.0%	0.0%	0.3%	0.0%	0.9%
Georgia (*n* = 430)	62.1%	4.7%	0.5%	1.2%	13.0%	0.0%	0.0%	0.0%	0.0%	18.6%
Ingham (MI) (*n* = 25)	96.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 878)	48.4%	2.8%	1.5%	0.1%	0.0%	0.0%	0.5%	0.0%	0.0%	46.7%
Maryland (*n* = 269)	81.0%	0.0%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%
Massachusetts (*n* = 23)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Nebraska (*n* = 16)	87.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%
New Jersey (*n* = 61)	59.0%	0.0%	4.9%	4.9%	0.0%	0.0%	0.0%	0.0%	0.0%	31.1%
New York (*n* = 0)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Okaloosa (FL) (*n* = 392)	28.3%	62.5%	3.8%	1.3%	0.0%	0.0%	0.0%	0.5%	0.0%	3.6%
South Carolina (*n* = 9)	88.9%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Texas (*n* = 376)	5.3%	0.0%	3.7%	2.1%	0.5%	0.0%	0.0%	0.0%	0.5%	87.8%
Vermont (*n* = 248)	12.9%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	78.6%
Washington (*n* = 706)	0.0%	0.0%	53.7%	27.3%	0.0%	5.2%	0.0%	0.4%	0.0%	13.3%
Wisconsin (*n* = 474)	61.6%	4.2%	0.0%	0.0%	9.3%	0.0%	0.0%	4.0%	0.0%	20.9%
Voter Type										
Uniformed Services (*n* = 2,094)	21.5%	43.6%	14.3%	5.9%	2.1%	0.8%	0.0%	0.8%	0.0%	11.0%
Overseas Citizen (*n* = 3,092)	37.9%	5.6%	8.2%	13.6%	2.1%	0.7%	0.9%	0.3%	0.0%	30.7%

Voter Type. This table describes the type of voter who requested an absentee ballot.

	Voter Type	
	Uniformed Services	Overseas Citizens
Respondents (*n* = 288,253)	38.0%	62.0%
Jurisdiction		
Colorado (*n* = 32,985)	31.1%	68.9%
Delaware (*n* = 1,133)	21.5%	78.5%
Escambia (FL) (*n* = 7,235)	94.0%	6.0%
Georgia (*n* = 7,207)	32.9%	67.1%
Ingham (MI) (*n* = 406)	8.9%	91.1%
Los Angeles (CA) (*n* = 32,067)	14.3%	85.7%
Maryland (*n* = 7,350)	20.4%	79.6%
Massachusetts (*n* = 5,531)	3.2%	96.8%
Nebraska (*n* = 703)	23.9%	76.1%
New Jersey (*n* = 9,856)	14.3%	85.7%
New York (*n* = 47,962)	6.7%	93.3%
Okaloosa (FL) (*n* = 7,222)	91.9%	8.1%
South Carolina (*n* = 2,370)	33.2%	66.8%
Texas (*n* = 0)	N/A	N/A
Vermont (*n* = 869)	2.9%	97.1%
Washington (*n* = 119,110)	57.5%	42.5%
Wisconsin (*n* = 6,247)	45.3%	54.7%

Appendix B: Missingness by Variable

The nature of the ESB Data Standard data set makes it difficult to determine the level of missingness by variable because, compared to more traditional data sets, no information in a field sometimes has a meaning rather than being missing information. For example, within this data set, no information in "Ballot Rejection Reason" means that a ballot was actually counted (given that the ballot was transmitted and returned).

In an effort to evaluate missingness accounting for the complexities of this data set, we classified most of the variables into three categories: (1) General Variables and Ballot Request, (2) Ballot Transmission, and (3) Ballot Return. The first group, General Variables and Ballot Request, covers six variables for which it is expected that all observations have information (e.g., Voter Type, Ballot Request Type) since all observations in this data set represent a voter that started the voting process by requesting a ballot. The second group, Ballot Transmission, covers the three variables related with the transmission of blank ballots and assumes that if there is information in one of them, then there must be information in the other two (e.g., if there is information of the date when the ballot was transmitted, then there should be information on how it was transmitted and the type of ballot that was transmitted). Finally, the group Ballot Return covers the two variables associated with the return of a ballot to the election office (i.e., return method and date). In this case, if there is information in one of the two variables, then it is expected that there will be information in the other.

General Variables and Ballot Request: The missingness values in this table show the percentage of observations within a category (i.e., row) for which there is no information for that variable.

Missingness—General Variables and Ballot Request						
	State Name	Voter Type	Ballot Request Type	Ballot Request Method	Ballot Request Date	Ballot Request Status
Respondents (*n* = 305,871)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Jurisdiction						
Colorado (*n* = 32,985)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Delaware (*n* = 1,133)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Georgia (*n* = 7,207)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ingham (MI) (*n* = 406)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 32,359)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Maryland (*n* = 7,350)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Massachusetts (*n* = 5,575)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nebraska (*n* = 703)	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
New Jersey (*n* = 9,856)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
New York (*n* = 47,962)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL) (*n* = 7,223)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Carolina (*n* = 2,370)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Texas (*n* = 17,238)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Vermont (*n* = 869)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Ballot Transmission: The missingness values in this table show the percentage of observations within a category (i.e., row) for which there is no information for that variable when information was expected.

Missingness—Ballot Transmission			
	Ballot Type	Ballot Transmission Method	Ballot Transmission Date
Respondents (*n* = 304,292)	8.0%	0.0%	2.9%
Jurisdiction			
Colorado (*n* = 32,966)	0.0%	0.0%	0.0%
Delaware (*n* = 1,133)	0.0%	0.0%	0.0%
Escambia (FL) (*n* = 7,235)	0.0%	0.0%	0.1%
Georgia (*n* = 7,207)	0.0%	0.0%	0.1%
Ingham (MI) (*n* = 406)	0.0%	0.0%	0.0%
Los Angeles (CA) (*n* = 30,874)	0.0%	0.0%	0.0%
Maryland (*n* = 7,350)	0.0%	0.0%	0.1%
Massachusetts (*n* = 5,536)	0.0%	0.0%	0.0%
Nebraska (*n* = 703)	0.0%	0.1%	0.0%
New Jersey (*n* = 9,856)	69.4%	0.0%	36.2%
New York (*n* = 47,962)	4.5%	0.0%	4.5%
Okaloosa (FL) (*n* = 7,223)	0.0%	0.0%	0.0%
South Carolina (*n* = 2,356)	0.0%	0.0%	0.0%
Texas (*n* = 17,216)	89.6%	0.1%	6.0%
Vermont (*n* = 869)	0.0%	0.0%	0.0%
Washington (*n* = 119,153)	0.0%	0.0%	0.0%
Wisconsin (*n* = 6,247)	0.0%	0.0%	32.4%

Ballot Return: The missingness values in this table show the percentage of observations within a category (i.e., row) for which there is no information for that variable when information was expected.

Missingness – Ballot Return		
	Ballot Return Method	Ballot Return Date
Respondents (*n* = 112,981)	0.9%	2.6%
Jurisdiction		
Colorado (*n* = 15,547)	0.0%	0.0%
Delaware (*n* = 545)	1.8%	0.0%
Escambia (FL) (*n* = 3,396)	0.0%	2.7%
Georgia (*n* = 5,222)	0.7%	0.7%
Ingham (MI) (*n* = 406)	0.0%	16.0%
Los Angeles (CA) (*n* = 7,912)	5.1%	5.1%
Maryland (*n* = 4,829)	0.0%	0.1%
Massachusetts (*n* = 5,575)	0.0%	20.4%
Nebraska (*n* = 566)	1.1%	0.2%
New Jersey (*n* = 3,018)	0.0%	0.0%
New York (*n* = 14,407)	0.0%	0.0%
Okaloosa (FL) (*n* = 2,978)	0.0%	1.3%
South Carolina (*n* = 1,997)	0.0%	0.3%
Texas (*n* = 11,064)	0.0%	0.0%
Vermont (*n* = 730)	31.1%	0.0%
Washington (*n* = 33,029)	0.0%	2.4%
Wisconsin (*n* = 4,760)	7.8%	7.6%

Appendix C: EAVS and ESB Item Alignment Comparison

This appendix shows EAVS item-by-item comparisons with ESB-produced EAVS items. All 80 items from Section B of the EAVS—except for B4a: "Total FPCAs rejected because they were received late"—were replicated using ESB data and compared with the results provided by the states and jurisdictions in the 2022 EAVS. The comparison uses the level of alignment between items, calculated as follows:

$$Level\ of\ Alignment = \frac{ESB\ produced\ metric}{EAVS\ result}\ x\ 100$$

A 100% result in the level of alignment means that both approaches yield the same result; results below 100% mean that the ESB-produced metric underestimates the EAVS result; and values above 100% mean that the ESB-produced metric overestimates the EAVS result. Two transformations were conducted to improve interpretation of the results. First, if the results for the ESB-produced metric and the EAVS result are both zeroes or missing, then the level of alignment is recoded as 100% showing perfect alignment. Second, if the EAVS result is zero and the ESB-produced metric is more than zero, then the result is recoded to 0% showing no alignment between the two metrics. In some cases, however, a 0% of alignment means that an item was missing, reported as "Data not available" or as "Does not apply" in EAVS while it was successfully calculated using ESB data. In other cases, a 0% of alignment means that an item that was responded in EAVS was impossible to calculate with ESB data due to missing information in a variable (e.g., if "Voter Type" is missing, then most "b" and "c" subitems in EAVS cannot be calculated, as they specifically refer to Uniformed Services and overseas citizens, respectively).

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B1 to B3: Compares alignment in items covering the number of registered *UOCAVA* voters (B1), FPCAs received (B2), and FPCAs rejected (B3). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B1 to B3									
	B1a	B1b	B1c	B2a	B2b	B2c	B3a	B3b	B3c
Colorado	83.5%	76.9%	86.9%	87.8%	95.5%	86.6%	2.3%	0.0%	2.7%
Delaware	97.6%	127.1%	91.7%	97.5%	126.6%	91.7%	100.0%	100.0%	100.0%
Escambia (FL)	53.7%	53.6%	56.5%	75.5%	74.5%	84.4%	0.0%	0.0%	0.0%
Georgia	96.0%	96.3%	95.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ingham (MI)	98.8%	97.3%	98.9%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	98.1%	97.1%	97.4%	95.9%	85.5%	93.9%	82.0%	77.8%	74.0%
Maryland	100.0%	100.1%	100.0%	64.4%	98.4%	55.6%	5.3%	20.0%	0.0%
Massachusetts	98.4%	98.2%	97.7%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Nebraska	99.3%	98.8%	99.4%	96.2%	96.0%	96.3%	0.0%	0.0%	0.0%
New Jersey	37.7%	78.3%	33.7%	36.1%	77.5%	32.7%	70,575.0%	23,800.0%	86,166.7%
New York	127.9%	78.8%	133.9%	70.1%	48.0%	72.5%	0.0%	0.0%	0.0%
Okaloosa (FL)	52.1%	51.1%	66.8%	99.0%	98.9%	100.0%	0.0%	0.0%	100.0%
South Carolina	100.3%	100.5%	100.3%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Texas	69.7%	0.0%	0.0%	69.7%	0.0%	0.0%	201.6%	0.0%	0.0%
Vermont	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Washington	114.5%	105.5%	129.2%	867.2%	646.9%	923.1%	100.0%	100.0%	100.0%
Wisconsin	29.9%	19.9%	50.9%	94.7%	94.4%	94.8%	100.0%	100.0%	100.0%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B5 to B6: Compares alignment in items covering the total number of ballots transmitted to *UOCAVA* voters (B5) and the total number of ballots transmitted to *UOCAVA* voters by postal mail (B6). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B5 to B6						
	B5a	B5b	B5c	B6a	B6b	B6c
Colorado	85.1%	88.1%	83.8%	78.8%	85.0%	73.2%
Delaware	97.6%	127.1%	91.7%	94.8%	181.6%	66.1%
Escambia (FL)	116.4%	118.4%	91.8%	123.3%	124.9%	83.9%
Georgia	96.2%	96.6%	96.0%	88.9%	92.3%	80.7%
Ingham (MI)	97.8%	100.0%	97.6%	92.6%	100.0%	91.4%
Los Angeles (CA)	96.2%	93.2%	95.7%	96.2%	93.1%	95.7%
Maryland	96.6%	98.1%	96.2%	94.2%	97.6%	92.2%
Massachusetts	101.3%	101.9%	100.4%	117.8%	100.0%	105.9%
Nebraska	101.0%	103.1%	100.4%	102.3%	106.0%	97.2%
New Jersey	51.6%	96.6%	46.8%	77.1%	97.1%	68.0%
New York	70.2%	44.6%	72.9%	115.9%	67.5%	127.7%
Okaloosa (FL)	92.7%	92.8%	91.1%	91.5%	91.7%	86.5%
South Carolina	100.0%	100.0%	99.9%	100.0%	0.0%	0.0%
Texas	74.7%	0.0%	0.0%	236.9%	0.0%	0.0%
Vermont	92.9%	19.2%	104.8%	76.1%	4.9%	114.5%
Washington	109.6%	102.2%	121.4%	101.5% %	98.7%	113.2%
Wisconsin	70.3%	73.4%	68.0%	72.1%	73.2%	66.9%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B7 to B8: Compares alignment in items covering the total number of ballots transmitted to *UOCAVA* voters by email (B7) and the total number of ballots transmitted to *UOCAVA* voters by a method other than postal mail and email (B8). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B7 to B8						
	B7a	B7b	B7c	B8a	B8b	B8c
Colorado	87.4%	90.2%	86.6%	3,600.0%	0.0%	1,400.0%
Delaware	98.2%	113.6%	95.4%	0.0%	100.0%	0.0%
Escambia (FL)	96.7%	96.8%	96.3%	310.3%	367.7%	87.5%
Georgia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ingham (MI)	98.8%	100.0%	98.8%	100.0%	100.0%	100.0%
Los Angeles (CA)	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%
Maryland	75.0%	100.0%	66.7%	97.5%	98.7%	97.3%
Massachusetts	100.2%	102.4%	100.1%	95.7%	100.0%	95.2%
Nebraska	101.0%	101.9%	100.8%	112.5%	150.0%	100.0%
New Jersey	48.8%	96.4%	45.1%	75.0%	100.0%	50.0%
New York	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL)	95.9%	96.2%	94.1%	90.3%	89.4%	92.0%
South Carolina	97.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Texas	14.9%	0.0%	0.0%	0.0%	100.0%	100.0%
Vermont	100.1%	47.9%	103.6%	100.0%	100.0%	100.0%
Washington	95.5%	89.6%	99.2%	2,008.3%	1,266.0%	2,960.7%
Wisconsin	61.1%	40.1%	66.8%	109.4%	136.4%	78.5%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B9 to B10: Compares alignment in items covering the total number of ballots returned by *UOCAVA* voters (B9) and the total number of ballots returned by *UOCAVA* voters by postal mail (B10). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B9 to B10						
	B9a	B9b	B9c	B10a	B10b	B10c
Colorado	87.8%	89.1%	87.5%	89.4%	90.5%	88.6%
Delaware	93.1%	133.3%	89.0%	104.4%	218.8%	80.0%
Escambia (FL)	120.4%	122.5%	96.4%	122.2%	123.5%	98.6%
Georgia	100.2%	101.1%	99.8%	907.0%	391.9%	2,336.8%
Ingham (MI)	102.1%	103.7%	102.0%	587.9%	311.1%	638.8%
Los Angeles (CA)	94.7%	93.3%	92.5%	95.4%	94.0%	94.0%
Maryland	101.1%	100.1%	101.3%	101.4%	100.6%	101.5%
Massachusetts	100.7%	100.8%	99.9%	0.0%	0.0%	0.0%
Nebraska	100.9%	104.4%	100.0%	100.3%	103.6%	99.1%
New Jersey	67.2%	96.2%	64.3%	79.5%	99.3%	73.1%
New York	59.2%	42.3%	60.9%	59.2%	42.3%	60.9%
Okaloosa (FL)	86.4%	85.1%	100.0%	85.6%	85.0%	92.9%
South Carolina	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%
Texas	79.7%	0.0%	0.0%	101.1%	0.0%	0.0%
Vermont	92.6%	20.4%	99.8%	58.4%	12.3%	63.1%
Washington	118.5%	106.5%	137.5%	109.6%	104.8%	120.6%
Wisconsin	94.8%	109.2%	85.7%	86.1%	89.3%	84.2%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B11 to B12: Compares alignment in items covering the total number of ballots returned by *UOCAVA* voters by email (B11) and the total number of ballots returned by *UOCAVA* voters by a method other than postal mail and email (B12). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B11 to B12						
	B11a	B11b	B11c	B12a	B12b	B12c
Colorado	86.1%	84.5%	86.3%	525.0%	1,233.3%	440.0%
Delaware	96.9%	112.9%	95.7%	25.0%	28.6%	24.2%
Escambia (FL)	100.0%	100.0%	100.0%	78.8%	41.9%	92.7%
Georgia	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Ingham (MI)	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	100.0%	100.0%	100.0%	92.8%	91.3%	88.8%
Maryland	0.0%	0.0%	0.0%	99.1%	98.5%	99.5%
Massachusetts	0.0%	0.0%	0.0%	18,508.7%	5,950.0%	19,547.6%
Nebraska	102.2%	104.2%	102.0%	95.2%	114.3%	85.7%
New Jersey	64.0%	93.9%	62.5%	82.1%	83.3%	81.3%
New York	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Okaloosa (FL)	0.0%	0.0%	0.0%	87.5%	70.4%	100.0%
South Carolina	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Texas	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Vermont	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Washington	140.1%	121.7%	144.1%	113.3%	105.8%	151.9%
Wisconsin	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B13: Compares alignment in items covering the total number of ballots returned undeliverable (B13a), ballots returned by postal mail as undeliverable (B13b), ballots returned undeliverable (or bounce-back) by email (B13c), and ballots that were undeliverable by other modes, such as a bad fax number (B13d).

ESB–EAVS Item Alignment—B13				
	B13a	B13b	B13c	B13d
Colorado	61.5%	61.0%	0.0%	100.0%
Delaware	200.0%	200.0%	100.0%	100.0%
Escambia (FL)	159.6%	159.2%	0.0%	0.0%
Georgia	69.0%	46.7%	0.0%	0.0%
Ingham (MI)	100.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	100.0%	100.0%	100.0%	100.0%
Maryland	0.0%	0.0%	100.0%	100.0%
Massachusetts	0.0%	100.0%	0.0%	100.0%
Nebraska	100.0%	100.0%	100.0%	100.0%
New Jersey	100.0%	100.0%	100.0%	100.0%
New York	0.0%	0.0%	100.0%	100.0%
Okaloosa (FL)	62.2%	61.7%	0.0%	100.0%
South Carolina	100.0%	100.0%	100.0%	100.0%
Texas	0.0%	0.0%	100.0%	100.0%
Vermont	110.5%	100.0%	111.8%	100.0%
Washington	0.0%	0.0%	0.0%	100.0%
Wisconsin	0.0%	0.0%	0.0%	0.0%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B14 to B15: Compares alignment in items covering the total number of *UOCAVA* ballots counted (B14) and the total number of *UOCAVA* ballots counted that were returned by postal mail (B15). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB – EAVS Item Alignment – B14 to B15						
	B14a	B14b	B14c	B15a	B15b	B15c
Colorado	87.9%	89.5%	87.5%	90.0%	90.9%	89.3%
Delaware	97.6%	140.0%	93.7%	106.4%	233.3%	83.3%
Escambia (FL)	121.7%	124.0%	96.3%	123.6%	125.1%	98.5%
Georgia	97.9%	98.0%	97.9%	945.4%	397.5%	2,801.7%
Ingham (MI)	100.3%	100.0%	100.3%	563.2%	266.7%	618.8%
Los Angeles (CA)	94.8%	93.3%	92.8%	95.6%	93.8%	94.4%
Maryland	99.9%	99.6%	100.0%	99.9%	99.8%	100.0%
Massachusetts	100.7%	100.8%	99.9%	0.0%	0.0%	0.0%
Nebraska	100.6%	102.7%	100.0%	99.7%	101.2%	99.0%
New Jersey	67.0%	95.6%	64.3%	80.0%	98.4%	73.9%
New York	60.0%	56.3%	60.2%	60.0%	56.3%	60.2%
Okaloosa (FL)	85.8%	84.4%	100.0%	84.9%	84.3%	92.8%
South Carolina	99.9%	99.8%	100.0%	0.0%	0.0%	0.0%
Texas	80.7%	0.0%	0.0%	103.6%	0.0%	0.0%
Vermont	94.2%	19.2%	102.3%	88.6%	18.5%	95.9%
Washington	118.4%	106.7%	137.0%	109.3%	104.8%	119.4%
Wisconsin	102.3%	115.2%	93.8%	92.9%	94.0%	92.2%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B16 to B17: Compares alignment in items covering the total number of counted *UOCAVA* ballots that were returned by email (B16) and the total number counted *UOCAVA* ballots that were returned by a method other than postal mail and email (B17). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B16 to B17						
	B16a	B16b	B16c	B17a	B17b	B17c
Colorado	86.0%	84.6%	86.1%	556.0%	1,750.0%	452.2%
Delaware	97.8%	112.9%	96.6%	50.0%	0.0%	57.1%
Escambia (FL)	100.0%	100.0%	100.0%	78.6%	41.9%	92.6%
Georgia	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Ingham (MI)	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	100.0%	100.0%	100.0%	92.9%	91.9%	88.9%
Maryland	0.0%	0.0%	0.0%	99.1%	98.5%	99.5%
Massachusetts	0.0%	0.0%	0.0%	18,413.0%	5,950.0%	19,442.9%
Nebraska	102.2%	104.2%	102.0%	95.2%	114.3%	85.7%
New Jersey	64.0%	93.8%	62.5%	81.5%	81.8%	81.3%
New York	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Okaloosa (FL)	0.0%	0.0%	0.0%	87.5%	70.4%	100.0%
South Carolina	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Texas	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Vermont	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Washington	140.6%	123.6%	144.2%	113.3%	106.0%	151.1%
Wisconsin	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B18 to B19: Compares alignment in items covering the total number rejected *UOCAVA* ballots (B18) and the total number of *UOCAVA* ballots rejected because they missed the deadline (B19). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B18 to B19						
	B18a	B18b	B18c	B19a	B19b	B19c
Colorado	86.0%	82.8%	86.7%	79.3%	72.7%	80.9%
Delaware	35.7%	100.0%	18.2%	85.7%	300.0%	50.0%
Escambia (FL)	102.2%	102.3%	100.0%	100.6%	100.6%	100.0%
Georgia	140.2%	219.0%	126.4%	97.7%	94.6%	98.2%
Ingham (MI)	142.9%	133.3%	145.5%	142.9%	133.3%	145.5%
Los Angeles (CA)	93.5%	93.3%	89.3%	93.4%	92.3%	89.1%
Maryland	126.9%	127.8%	126.8%	136.3%	140.0%	135.9%
Massachusetts	88.0%	100.0%	88.0%	0.0%	100.0%	0.0%
Nebraska	114.3%	200.0%	100.0%	116.7%	300.0%	100.0%
New Jersey	73.7%	107.7%	66.7%	78.6%	112.5%	70.6%
New York	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
South Carolina	112.5%	120.0%	100.0%	100.0%	100.0%	100.0%
Texas	57.5%	0.0%	0.0%	3.2%	0.0%	0.0%
Vermont	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Washington	124.4%	115.4%	134.1%	0.0%	0.0%	0.0%
Wisconsin	17.4%	15.5%	18.1%	2.4%	1.3%	2.8%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B20 to B22: Compares alignment in items covering the total number of *UOCAVA* ballots rejected because of a problem with the voter's signature (B20), the total number of *UOCAVA* ballots rejected because they lacked a postmark (B21), and the total number of *UOCAVA* ballots rejected for other reasons (B22). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B20 to B22									
	B20a	B20b	B20c	B21a	B21b	B21c	B22a	B22b	B22c
Colorado	85.9%	84.7%	86.2%	100.0%	100.0%	100.0%	83.7%	75.0%	84.9%
Delaware	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	25.7%	75.0%	11.1%
Escambia (FL)	112.5%	114.3%	100.0%	100.0%	100.0%	100.0%	125.0%	125.0%	100.0%
Georgia	125.0%	100.0%	125.0%	100.0%	100.0%	100.0%	837.5%	1,140.0%	700.0%
Ingham (MI)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	1,400.0%	0.0%	1,000.0%	100.0%	100.0%	100.0%	68.6%	70.6%	64.7%
Maryland	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Massachusetts	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%	122.2%	100.0%	122.2%
Nebraska	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New Jersey	57.1%	100.0%	50.0%	100.0%	100.0%	100.0%	70.4%	100.0%	65.2%
New York	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%
Okaloosa (FL)	90.9%	90.0%	100.0%	100.0%	100.0%	100.0%	113.3%	113.3%	100.0%
South Carolina	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Texas	84.6%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Vermont	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	0.0%
Washington	112.9%	105.7%	120.9%	0.0%	0.0%	0.0%	663.6%	471.4%	1,000.0%
Wisconsin	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	295.2%	500.0%	261.1%

Data Standardization and the 2022 General Election

ESB and EAVS Item Alignment B23 to B24: Compares alignment in items covering the total number of FWABs returned by *UOCAVA* voters (B23) and the total number of counted FWABs (B24). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B23 to B24						
	B23a	B23b	B23c	B24a	B24b	B24c
Colorado	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Delaware	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Escambia (FL)	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Georgia	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ingham (MI)	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%
Los Angeles (CA)	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%
Maryland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Massachusetts	119.3%	133.3%	118.8%	121.1%	133.3%	120.6%
Nebraska	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
New Jersey	73.0%	91.4%	72.6%	73.3%	91.4%	72.9%
New York	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Carolina	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Texas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Vermont	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Washington	86.4%	63.9%	97.3%	86.0%	61.8%	97.3%
Wisconsin	7.7%	0.0%	8.3%	14.3%	100.0%	14.3%

ESB and EAVS Item Alignment B25 to B27: Compares alignment in items covering the total number of FWABs rejected because they missed the deadline (B25), the total number of FWABs rejected because the voter's regular absentee ballot was received and counted (B26), and the total number of FWABs rejected for other reasons (B27). All items are divided into three subitems that correspond to the total *UOCAVA* voters ("a" subitems), Uniformed Services ("b" subitems), and overseas citizens ("c" subitems).

ESB–EAVS Item Alignment—B25 to B27									
	B25a	B25b	B25c	B26a	B26b	B26c	B27a	B27b	B27c
Colorado	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Delaware	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Escambia (FL)	100.0%	100.0%	100.0%	0.0%	100%	0.0%	0.0%	0.0%	100.0%
Georgia	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ingham (MI)	100.0%	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%
Los Angeles (CA)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	0.0%
Maryland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Massachusetts	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	33.3%	100.0%	33.3%
Nebraska	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New Jersey	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%	50.0%	100.0%	50.0%
New York	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okaloosa (FL)	100.0%	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%
South Carolina	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Texas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Vermont	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Washington	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Wisconsin	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%