

ALASKA STATE LEGISLATURE
SENATE STATE AFFAIRS STANDING COMMITTEE

March 16, 2021

3:37 p.m.

MEMBERS PRESENT

Senator Mike Shower, Chair
Senator Lora Reinbold, Vice Chair (via Teams)
Senator Mia Costello (via Teams)
Senator Roger Holland (via Teams)
Senator Scott Kawasaki (via Teams)

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

SENATE BILL NO. 95

"An Act relating to the right of first refusal of a volunteer search and rescue group with respect to surplus state property."

- HEARD & HELD

SENATE BILL NO. 66

"An Act relating to the membership of the legislative council; and relating to the membership of the Legislative Budget and Audit Committee."

- HEARD & HELD

SENATE BILL NO. 39

"An Act relating to elections; relating to voter registration; relating to ballots and a system of tracking and accounting for ballots; establishing an election offense hotline; designating as a class A misdemeanor the collection of ballots from other voters; designating as a class C felony the intentional opening or tampering with a sealed ballot, certificate, or package of ballots without authorization from the director of the division of elections; and providing for an effective date."

- HEARD & HELD

PREVIOUS COMMITTEE ACTION

BILL: SB 95

SHORT TITLE: SEARCH AND RESCUE SURPLUS STATE PROPERTY
SPONSOR(S): SENATOR(S) WILSON

03/03/21 (S) READ THE FIRST TIME - REFERRALS
03/03/21 (S) STA, FIN
03/16/21 (S) STA AT 3:30 PM BUTROVICH 205

BILL: SB 66

SHORT TITLE: MEMBERS LEG COUNCIL; LEG BUDGET & AUDIT
SPONSOR(S): SENATOR(S) BEGICH

02/03/21 (S) READ THE FIRST TIME - REFERRALS
02/03/21 (S) STA
03/16/21 (S) STA AT 3:30 PM BUTROVICH 205

BILL: SB 39

SHORT TITLE: BALLOT CUSTODY/TAMPERING; VOTER REG; MAIL
SPONSOR(S): SENATOR(S) SHOWER

01/25/21 (S) PREFILE RELEASED 1/15/21
01/25/21 (S) READ THE FIRST TIME - REFERRALS
01/25/21 (S) STA, JUD
01/26/21 (S) STA AT 3:30 PM BUTROVICH 205
01/26/21 (S) -- MEETING CANCELED --
01/28/21 (S) STA AT 3:30 PM BUTROVICH 205
01/28/21 (S) Heard & Held
01/28/21 (S) MINUTE(STA)
02/02/21 (S) STA AT 3:30 PM BUTROVICH 205
02/02/21 (S) Heard & Held
02/02/21 (S) MINUTE(STA)
02/09/21 (S) STA AT 3:30 PM BUTROVICH 205
02/09/21 (S) Scheduled but Not Heard
02/11/21 (S) STA AT 3:30 PM BUTROVICH 205
02/11/21 (S) Heard & Held
02/11/21 (S) MINUTE(STA)
02/16/21 (S) STA AT 3:30 PM BUTROVICH 205
02/16/21 (S) Heard & Held
02/16/21 (S) MINUTE(STA)
02/18/21 (S) STA AT 3:30 PM BUTROVICH 205
02/18/21 (S) -- MEETING CANCELED --
02/25/21 (S) STA AT 3:30 PM BUTROVICH 205
02/25/21 (S) Heard & Held
02/25/21 (S) MINUTE(STA)
03/16/21 (S) STA AT 3:30 PM BUTROVICH 205

WITNESS REGISTER

SENATOR DAVID WILSON (via teleconference)
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Sponsor of SB 95

JASMIN MARTIN, Staff (via teleconference)
Senator David Wilson
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Presented the sectional analysis for SB 95 on behalf of the sponsor.

SENATOR TOM BEGICH
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Sponsor of SB 66.

MERCEDES COLBERT, Staff
Senator Tom Begich
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Presented the sectional analysis for SB 66 on behalf of the sponsor.

CHRIS MILLER, CPA; Distinguished Solution Specialist
Oracle NetSuite
Lehi, Utah
POSITION STATEMENT: During the hearing on SB 39, delivered a PowerPoint on Modern Technology Applications for Voter Security & Trust.

ACTION NARRATIVE

[3:37:42 PM](#)

CHAIR MIKE SHOWER called the Senate State Affairs Standing Committee meeting to order at 3:37 p.m. Present at the call to order were Senators Reinbold, Costello, Holland, Kawasaki (all via Teams) and Chair Shower who was present in the committee room.

He stated that as the chair he chose to close the committee room to all in-person meeting other than himself. The other committee members would attend the meeting remotely via Teams. He explained that he chose this course in response to the spike in the number of COVID-19 cases in the Capitol and to show that the

committee can operate this way to get its work done while protecting health and safety.

SB 95-SEARCH AND RESCUE SURPLUS STATE PROPERTY

[3:43:41 PM](#)

CHAIR SHOWER announced the consideration of SENATE BILL NO. 95 "An Act relating to the right of first refusal of a volunteer search and rescue group with respect to surplus state property."

He reminded the public that written testimony on SB 95 could be submitted at ssta@akleg.gov.

He listed the people available to answer questions.

[3:44:33 PM](#)

SENATOR DAVID WILSON (via telconference), Alaska State Legislature, Juneau, Alaska, sponsor of SB 95, introduced the legislation speaking to the sponsor statement.

Search and rescue operations across the State of Alaska are largely done by volunteer organizations dispatched by the Alaska State Troopers. These groups provide lifesaving services to our state at minimal cost. SB 95 provides assistance to the groups at no cost to the state. While search and rescue groups can be reimbursed for costs incurred during specific operations, the state does not generally provide them with equipment.

This legislation allows a volunteer search and rescue organization to exercise the right of first refusal on items related to search and rescue before the property is sold, leased, licenses, or disposed of. This bill enables these volunteer search and rescue groups to more easily obtain the equipment they need to fulfill their lifesaving mission.

SENATOR D. WILSON noted that SB 95 has a zero fiscal note.

[3:47:30 PM](#)

JASMIN MARTIN, Staff, Senator David Wilson, Alaska State Legislature, Juneau, Alaska, presented the sectional analysis for SB 95.

Section 1: Names this act the Ellie Mae Act.

Section 2: Amends [AS 44.68.110] to allow an organized volunteer search and rescue group to exercise right of first refusal for surplus state items related to search and rescue before they are disposed of by the state.

CHAIR SHOWER asked if there were questions.

SENATOR HOLLAND stated support for the idea and appreciation for the bill.

CHAIR SHOWER noted that Senator Reinbold gave the bill a nonverbal thumbs up.

CHAIR SHOWER found no questions and noted that the sponsor indicated he had amendments to offer in a future hearing.

[3:50:24 PM](#)

SENATOR D. WILSON explained that the first amendment clarifies that SB 95 applies only to state property. The second amendment adds the term "obsolete" following the word "to" on page 1, line 10.

[3:51:22 PM](#)

CHAIR SHOWER held SB 95 in committee for future consideration. He reiterated that written testimony could be submitted to ssta@akleg.gov.

SB 66-MEMBERS LEG COUNCIL; LEG BUDGET & AUDIT

[3:51:46 PM](#)

CHAIR SHOWER announced the consideration of SENATE BILL NO. 66 "An Act relating to the membership of the legislative council; and relating to the membership of the Legislative Budget and Audit Committee."

CHAIR SHOWER informed the committee he and the sponsor agreed that the best way forward would be to introduce a committee substitute (CS) that makes minor changes in Sections 1 and 2 and eliminates Section 3.

[3:53:23 PM](#)

SENATOR TOM BEGICH, Alaska State Legislature, Juneau, Alaska, sponsor of SB 66, presented the legislation paraphrasing the following sponsor statement [Original punctuation provided.]:

As outlined by state statute, the Alaska Legislative Council has the essential role of conducting the legislature's business when the legislature is not in session, while the Legislative Budget and Audit Committee plays a pivotal role in managing state finances and expenditures.

It is clear the legislative intent of committee member representation on these decisive standing committees is meant to be equitable and fair. Alaska State Statute establishes membership on Legislative Council and Legislative Budget and Audit to include "at least one member from each of the two major political parties of each house;" however, the Alaska legislature has a long history of coalition caucuses and nonpartisan legislators. The unfortunate consequence is that organized legislative minority representation has been long denied from these critical standing committees. Caucuses form around a vision they have for Alaska. The minority caucuses should not have their vision for Alaska unrepresented on these committees.

Senate Bill 66 seeks to clarify the long-standing intent of fair representation on these powerful standing committees by requiring at least one member of the minority party of each house. By this change, we can ensure that all of Alaska is represented fairly on Legislative Council and Legislative Budget and Audit.

SENATOR BEGICH highlighted that the passage of Ballot Measure 2 made the use of party affiliation optional. The consequence is that there will be instances where party affiliation is not associated with every member of the body. He said that underscores the importance of ensuring that these committees represent both the minority and majority. He clarified that SB 66 does not seek to expand the role of the minority on either committee as provided by the Uniform Rules. Rather, it seeks fair representation.

[3:57:27 PM](#)

MERCEDES COLBERT, Staff, Senator Tom Begich, Alaska State Legislature, Juneau, Alaska, presented the sectional analysis for SB 66 on behalf of the sponsor.

Section 1.

Amends AS 24.20.020 to ensure fair representation from the minority caucus of the legislative house on the legislative council.

Section 2.

Amends AS 24.20.161 by aligning terminology and establishing fair representation from the minority caucus of the legislative house on the Legislative Budget and Audit Committee.

Section 3.

Inserts a new definition section to AS 24.20, AS 24.20.700 which clarifies that a minority is comprised of at least 25 percent of the legislative house membership, is organized, and has elected a leader.

CHAIR SHOWER asked if there were questions.

[3:59:25 PM](#)

SENATOR REINBOLD described SB 66 as a great idea and great bill. She asked for the effective date and the number of times the minority did not have representation on these committees.

MS. COLBERT replied the bill becomes effective in the 33rd legislature. Responding to the second question, she reported that from the 22nd legislature through the 32nd legislature the House of Representatives consistently included minority representation on the Legislative Budget and Audit Committee. During that same time, the Senate included minority caucus representation just three times. For Legislative Council, the House included minority caucus representation in 10 of the last 11 legislatures, whereas the Senate included minority caucus representation just 5 of the last 11 legislatures.

CHAIR SHOWER solicited a motion to adopt the proposed committee substitute (CS).

[4:02:35 PM](#)

SENATOR REINBOLD moved to adopt the work draft CS for SB 66(STA), work order 32-LS0410\B, as the working document.

CHAIR SHOWER objected for discussion purposes.

[4:03:15 PM](#)

MS. COLBERT explained the differences between version A and version B for SB 66.

Section 1 clarifies that the minority has representation on Legislative Council. The committee is composed of the Senate president, the Senate minority leader or designee, and five other senators and the speaker of the House of Representatives, the House minority leader or designee and five other representatives. The total membership of 14 remains the same.

Section 2 clarifies that the minority has representation on the Legislative Budget and Audit Committee. The committee is comprised of the chairs of the senate and house finance committees, one member from each the senate and house finance committees, the house minority leader or designee and the senate minority leader or designee, and two members appointed from each body by the respective presiding officer. The total membership of 12 remains the same.

Section 3 is removed because it would have had the unintended consequence of codifying existing Uniform Rules.

[4:05:50 PM](#)

SENATOR BEGICH highlighted that the intent was that the effective date would be set for the next legislature, but that was missing from the bill. He requested the committee amend the bill to clarify that it would take effect after the first day of the 33rd legislature.

[4:07:22 PM](#)

CHAIR SHOWER held SB 66 in committee for future consideration.

SB 39-BALLOT CUSTODY/TAMPERING; VOTER REG; MAIL

[4:07:51 PM](#)

CHAIR SHOWER announced the consideration of SENATE BILL NO. 39 "An Act relating to elections; relating to voter registration; relating to ballots and a system of tracking and accounting for ballots; establishing an election offense hotline; designating as a class A misdemeanor the collection of ballots from other voters; designating as a class C felony the intentional opening or tampering with a sealed ballot, certificate, or package of ballots without authorization from the director of the division of elections; and providing for an effective date."

[SB 39 was heard previously on 1/28/21, 2/2/21, 2/11/21, 2/16/21, and 2/25/21. This is the 6th hearing on the bill.]

SENATOR SHOWER said he was awaiting a proposed committee substitute for SB 39 from Legal Services. The committee is

considering ballot election concerns regarding data security, chain of custody, voter validation, and ballot authentication in the bill. These issues are especially important when there are significant numbers of mail-in and absentee ballots. He said, "I've tried to make clear to folks we're not opposed to those things specifically; we're trying to make sure that they are secure when we use them. So, we're not trying to prevent them."

SENATOR SHOWER remarked that the Division of Elections previously testified that currently there is no chain of custody for tracking from the time ballots are mailed out to when they are returned to the division. In fact, voters must call the division to find out if their ballots were received, he said.

SENATOR SHOWER reported that the [Alaska Supreme Court ruled in October 2020 Arctic Village Council et al v. Meyer et al.] that Alaskans voting by mail are not required to have witnesses sign their absentee ballots. [The October 12, 2020 decision upheld the lower court ruling that the requirement "impermissibly burdens the right to vote" during the pandemic].

[4:09:35 PM](#)

SENATOR SHOWER said he introduced SB 39 as a means to improve the integrity of Alaska's election system and restore people's faith. He invited Chris Miller, Oracle NetSuite, to help the committee and public understand election technology.

[4:10:13 PM](#)

CHRIS MILLER, CPA; Distinguished Solution Specialist, Oracle NetSuite, Lehi, Utah, presented a PowerPoint on Modern Technology Applications for Voter Security & Trust. He stated that his role at Oracle has three functions: accounting, internal controls, and developing new products, but his primary role is finding solutions to problems.

[4:10:52 PM](#)

MR. MILLER stated that his PowerPoint would focus on technological changes that may provide applications and advantages for the state to make changes to Alaska's voting process.

[4:12:16 PM](#)

MR. MILLER reviewed slides 3 and 4 by making disclosure statements. He said he is not making promises on behalf of Oracle, addressing the committee as an official Oracle representative, or looking to sell anything. He stated his intent is to inform committee members on software technology

that is available. He clarified that he was speaking from Oracle's perspective, but companies such as Microsoft and Amazon Web Services (AWS) also offer good cloud products.

MR. MILLER turned to slide 5, What Voters of Alaska Deserve, which highlighted Domino's tracking system to illustrate an effective system that could be used to track ballots. For example, when people order Domino's pizza online, the company uses a "pizza tracker" system to verify the pizza ordered, when the pizza was being prepared, and when the pizza was out for delivery. He said his PowerPoint would outline the equivalent of using a system similar to the "pizza tracker" to track ballots and votes.

MR. MILLER highlighted Stephen Covey's [The 7 Habits of Highly Effective People] relating fundamental questions that arise when changes are made:

- Why do we need to make a change?
- What do we need to change?
- How do we make a change?

[4:14:39 PM](#)

MR. MILLER reviewed his agenda items on slide 7. He offered to focus on what needs to change in a voting system and how to implement these changes. The text inside the graphics' bubbles on the slide read:

Key voting issues for Consideration
Technology Building Blocks
What Might a System Look Like?
Q&A Session

[4:14:34 PM](#)

MR. MILLER reviewed what is necessary to create voter confidence: "The How, What, and Why" by reading the text in the bubbles on slide 8:

Security - Freedom from Outside Interference
Auditability - Transparent and Accurate Results
Accessibility - Reduce Voter Friction
Voter Confidence
One Voter
One Vote

MR. MILLER discussed what creates voter confidence for voter security, auditability and accessibility. He emphasized the

necessity to "reduce friction" in a transaction to attain accessibility. He stated his intent to demonstrate how to use technology to reduce friction for voters, not to make the barriers harder, but to maintain the integrity of the system.

4:15:25 PM

MR. MILLER referenced a quote from Thomas Jefferson on slide 9, which emphasizes the goal to strive to have as many people as possible participate in the voting process. It read:

We do not have government by the majority. We have government by the majority who participate.

MR. MILLER reviewed five technologies listed on slide 10:

Cloud Infrastructure/Economics
Multi Factor Authentication
Blockchain Ledger
Tokenization
Digital Wallet

MR. MILLER said he would explain each how each technology can provide auditability/transparency, security, and accessibility.

4:16:28 PM

MR. MILLER discussed "Cloud Infrastructure" and the "Oracle Cloud Infrastructure Global Footprint" on slides 11-12. He said he would focus on Cloud infrastructure in the US and not on Oracle's worldwide scope. In the US, Oracle has created government zone cloud infrastructure warehouses that are FedRAMP [Federal Risk and Authorization Management Program] certified. Data remains in the United States in Phoenix, Chicago, and Ashburn. Another cloud warehouse is planned for San Jose, he said. He reported that all countries in the European Union (EU), Canada and China require their data to remain within their borders. Keeping data within borders represents a fundamental core security requirement for businesses to better protect their data and to prevent hackers from accessing it.

MR. MILLER reviewed Oracle's security measures in the Cloud on slide 13. He explained three areas for security measures Oracle has developed, including Zero Trust Architecture, Maximum Security Zones and its Oracle database. First, Oracle has a "Zero Trust Architecture." This means Oracle employees cannot see their customers' data and their customers cannot access Oracle's programming code. This prevents people from having access to manipulate Oracle's code. Second, Oracle uses

preconfigured mandatory security best practices for critical reduction workloads, which helps eliminate customer misconfiguration. These best practices help ensure that people do not accidentally make mistakes. Finally, Oracle's database uses "Data Safe and OS Security."

[4:18:51 PM](#)

MR. MILLER described the technical, layered protections Oracle uses to provide stronger isolation and control from "core to edge" of its database. He directed attention to an image on slide 15 that illustrated Oracle's layered control to manage data stored in the Cloud. This included a protection structure under edge services, monitoring, virtual network, and data/database headings. First, he described the internet edge as similar to castle walls. At that point, security includes denial of service and DNS (Domain Name System) protections against security attacks. Monitoring and logging, the next layer, protect against access to data. He emphasized the importance of keeping informational ledgers and identification ledgers for voting systems. The voting ledger will identify how ballots were cast and the identification ledger would list authorized voters who have not yet voted, he said. These layered controls could provide complete confidence in the overall identity security, he said.

[4:20:06 PM](#)

MR. MILLER reviewed the Oracle Data Management platform scale or the data processed. Alaska may have up to 750,000 voters voting in one day. However, Oracle and other major cloud providers can process 43 billion API [Application Programming Interface] calls per day in real time. Further, Oracle can also increase its 2,200 computer servers by 750 more within 12 minutes. This means Oracle is elastic and could handle a massive Election Day spike that cannot crash, he said.

[4:21:08 PM](#)

MR. MILLER highlighted the Oracle Cloud Infrastructure (OCI) compliance and audit programs typically used in global, government, industry, and regional categories as shown on slide 16. First, FedRAMP federal cybersecurity standards provide the highest security standards, used by federal intelligence agencies. Amazon's JEDI (Joint Enterprise Defense Infrastructure) Cloud is being built to these standards, he said. The slide listed several audit programs used globally. Audit programs are important because they confirm data has been protected from hackers. Since costs are spread out among users, these programs provide a cost-effective means to receive world-

class security at a reasonable cost. He offered his belief that data maintained in infrastructure warehouses, such as Oracle's firewall are as secure as Fort Knox.

[4:23:17 PM](#)

MR. MILLER briefly reviewed multifactor authentication. He directed attention to the images for Target or Fortnite 2FA shown on slide 16. Many companies do not rely solely on customer passwords for authentication. Instead, these companies send a code via the customer's text or email on file to authenticate his/her identity.

[4:24:48 PM](#)

MR. MILLER identified the types of factors for multifactor verification, including knowledge, possession, inherence, location, and time. He said knowledge refers to a person entering a password to log in. Possession means the person receives a cell phone text to authorize a log in. Inherence refers to the person using something inherent to an individual, such as a fingerprint, to verify their identity. Location means tracking the internet protocol (IP) address to confirm a person's location, such as an authorized computer in a voting booth. Time would limit verification within prescribed timeframes, such as voting hours, he said.

[4:25:47 PM](#)

MR. MILLER identified two applications for multifactor verification related to voting: Election Database with Sensitive Information and Voter Identity Broker. Since the election database has sensitive information, voter identification requires authentication and tracking. However, it is important to allow authorized people to have access to information without providing them with the ability to compromise the data. This can be done by ensuring proper segregation of duties to limit who can access data to prevent unauthorized access.

MR. MILLER reviewed the current process most polls use. Voters provide identification at the polling place. Election workers find the person in a printout of registered voters for the precinct and the voters sign the registered voters' log. He suggested using technology to create a voter identity broker system. Voters would upload their photo identification and authenticate it by using a multifactor process via cellphone or email. This would provide a means to guarantee identification, reduce fraud, and rely on an electronic system.

[4:27:25 PM](#)

CHAIR SHOWER asked if China and Russia allows Oracle to use US servers to control information during their elections.

MR. MILLER answered no; neither country allows citizen or business data to cross their borders. While Oracle conducts substantial business in China, its data centers are solely located in China. The European Union (EU) has a similar data governance policy, he said.

CHAIR SHOWER recalled that Alaska experienced two data breaches. In 2019, the Permanent Fund Division experienced a data breach and in 2020, the Division of Elections had a data breach. He asked how the types of systems he was discussing would prevent future data breaches.

[4:29:42 PM](#)

MR. MILLER answered by directing attention to the diagram on slide 14 that illustrates the protective layers the state could implement, such as two-factor authentication and segregation of duties. For example, two-source authentication will limit access by unauthorized people such as hackers from impersonating someone in an attempt to access personal data. Implementing segregation of duties could prevent employees from inappropriate access to data by limiting their access while allowing them enough access to do their jobs. Once segregation of duties is established, it would take collusion by multiple parties to hack the system, he said.

[4:33:27 PM](#)

CHAIR SHOWER asked how Alaska could incorporate a multifactor authentication process for mail-in or absentee voting without creating obstacles for voters. He stated his intent to ensure that eligible voters can easily vote while maintaining a secure voting system.

MR. MILLER responded he would discuss other technologies that can help do so later in the presentation.

MR. MILLER turned to slides 20-21, Oracle Blockchain Platform. He highlighted that blockchain technology has real world applications beyond cryptocurrency. For example, Walmart currently uses blockchain technology to track crops from the point of harvest through the packinghouse, transporter, exporter, processor, and distributor to Walmart stores. Blockchain technology can provide the ultimate chain of custody to track contaminated produce. This analysis can be done in a

matter of seconds since each transaction in the distribution process is tracked.

[4:37:00 PM](#)

MR. MILLER referenced slide 22, Technology Challenges. He reviewed slide 23, Characteristics of Blockchain Technology. Blockchain technology is tamper-proof, shared and transparent, consensus based, and provides security and privacy. Corporations and major banks use blockchain technology because it creates a sense of trust. All parties can see both sides of the transaction history, he said. He characterized blockchain technology as providing a single source of truth. Blockchain technology creates a digital ledger that records information and tracks products or transactions each step of the way.

MR. MILLER explained how Blockchain technology could be used in the context of voting. Voters would have the ability to confirm their votes via a blockchain by accessing their private accounts. This can provide voters with assurance that their vote was processed and counted. In addition, blockchain technology allows votes to be stored in essentially a digital public ledger. Blockchain technology allows for quick tabulation and data analysis, or data mining, to quickly identify any inconsistencies or discrepancies. Since Blockchain technology allows for incredibly fast calculations, it could count all votes during an election in a few hours. If early or absentee ballots are counted ahead of time, the processing time would be even less. This automated and transparent process could ultimately eliminate substantial manual labor and paperwork. While blockchain technology could eventually allow all-digital records, current discussions surround how to use this technology to manage paper ballots.

[4:39:47 PM](#)

MR. MILLER explained how Blockchain technology works by reviewing blockchain characteristics on slide 24. This slide depicted two flowcharts to illustrate how users would access the ledger and the bank would hold the primary or "golden record". Currently, banks maintain their ledgers and customers receive account statements, which consist of their own ledgers. A bank considers its records as the source of truth and correctness. When customers discover an error, they must convince the bank that a problem exists based on their own research.

MR. MILLER explained that blockchain data distribution has one ledger and all nodes have some level of access to it. This means that no one person or server can access the entire ledger. Node

replication makes using blockchain very fraud resistant. In fact, someone would have to change over 51 percent of the entire distribution nodes simultaneously to commit fraud or change data. The source of a potential discrepancy arises when a single node appears different from the rest of the nodes, which pinpoints where to investigate.

MR. MILLER noted that accountants and financial professionals characterize a blockchain as double-entry accounting that has evolved to triple-entry accounting. Entities can use double-entry accounting but a blockchain essentially stamps it. If any discrepancy or disagreement arises, the blockchain ledger shows how and when the transaction occurred.

MR. MILLER offered his view that the State of Alaska could use blockchain technology for production data and severance taxes, with the blockchain ledger essentially becoming a public ledger. The state could also track division orders and payments and create an immutable chain of custody for recording land-lease deeds. In terms of voting, a blockchain would create blocks that show the specifics of the vote tally. He said this provides auditability.

[4:43:21 PM](#)

MR. MILLER described permissioned and permissionless blockchain shown on slide 25. In permissioned blockchain, members are invited to join the network. Since parties are known in advance, it provides a more secure model. In a permissionless blockchain, or public blockchain, anyone on the internet may join and have access to the ledger information. It is less secure and offers less governance since the parties are not known in advance. Blockchain and Ethereum use permissionless blockchain, he said.

[4:44:08 PM](#)

MR. MILLER suggested that to create confidence, a voting system would use a permissioned blockchain network. The system would permit authenticated voters to join, receive their ballots, and vote at authorized times in specific elections. He explained that these permissions would provide confidence in the election.

MR. MILLER highlighted using a token, such as a QR code [Quick Response] in the voting process. Each vote could be traced in the blockchain record, but it would still protect voter identity. Analytical capabilities are available immediately with blockchain technology, including tabulating voting outcomes by location or district.

[4:46:29 PM](#)

MR. MILLER turned to slide 26, which described when to use database blockchain tables. He said blockchain tables can be used when there is no trust between people but the parties partially trust a neutral service provider. Blockchain tables act as a registrar and maintain the chain of custody. The advantage of using Oracle or AWS managed permission processes is that Oracle stands behind their process.

[4:47:44 PM](#)

SENATOR HOLLAND asked if any state currently uses blockchain technology to ensure voter integrity.

MR. MILLER replied that Utah allowed a limited blockchain voting system primarily for overseas military ballots but there has not been statewide use.

MR. MILLER recalled that the Republican and Democratic Conventions used blockchain technology but it was limited to internal nomination voting. In addition, several other countries such as Russia and India used blockchain technology for their election security and a few others are considering it. He maintained that every major company is looking for ways to use blockchain technology. "We are at the beginning," he said.

SENATOR REINBOLD thanked him for the presentation.

CHAIR SHOWER asked if individual states should develop their own voting systems using blockchain technology or if states should use an outside server. He expressed concern that Alaska's Division of Elections might not be able to take on such a large task.

MR. MILLER replied that Microsoft Azure, Oracle Cloud Infrastructure (OCI), and AWS are three vendors with excellent security and similar capabilities and skills to provide a service far better than the state could achieve on its own. Almost every major technological application is on the Cloud and very few companies try to do this on their own. For example, Zoom runs on Oracle Cloud Infrastructure, he said. He offered his belief that the outsourcing cost-benefit ratio makes sense because companies provide expertise and cost certainty. He said if he had a startup, he would only consider using Oracle, AWS, or Microsoft.

CHAIR SHOWER highlighted that cost is always an issue for the legislature. He related that the committee was focused on how to

create a good voting system in a cost efficient way while still providing the necessary level of service and security. He said the legislature often struggles with whether to contract services out or try to do it in-house. Based on the foregoing information, he surmised that the state lacks the expertise to do this on its own.

[4:54:47 PM](#)

CHAIR SHOWER highlighted some issues, including how to introduce transparency in vote tracking while ensuring voter identity remains secret. He recalled that when voters fax their ballots, the state's website cautions that someone might see their ballot. He asked Mr. Miller how voter transparency and tracking would work while maintaining anonymity through the process.

MR. MILLER, in response, turned to slides 27-30, related to anonymity. The key to anonymity is tokenization, he said. For example, when someone buys goods from Amazon using One Click, Apple Pay or Google Pay, the company uses tokenization. The company receives the credit card information, translates it into a complex hash algorithm that is transferred to a token vault. This information is matched via a map to the person's account number and personal information to correctly process the transaction.

[4:57:10 PM](#)

MR. MILLER turned to slide 31, Tokenization and Controls for Anonymity. He directed attention to the flowcharts on the slide to describe the secure voting process. First, a voter would go to a kiosk or voting booth to cast a vote or apply for an absentee ballot, similar to a kiosk at an airport. The voter would submit biometrics, such as a fingerprint, or use a multifactor authentication to voting booth interface. The identity verifier system receives and certifies the information and approves an ID key on the Blockchain, creating a token that authorizes a specific ballot. This system creates a voter key or token in the interface called a "blind token." The ballot cannot identify an individual voter and the authentication system cannot identify any specific ballot selections, which are separated by a wall. After voting, the agency issuing the ballot receives the "blind token" and the voter receives a confirmation printout with a hashtag and a ballot number.

[5:00:49 PM](#)

MR. MILLER described the process for a voting system using a paper ballot. The voter would use the same voter eligibility process but after validation, the ballot would be printed with a

hashtag. After voting, the ballot would be scanned and transmitted via a blockchain based on the hashtag. Again, voter identity would not be linked via the hashtag or the verification system.

MR. MILLER summarized that these systems provide absolute confidence that an authorized person voted by using multifactor authentication. It would also maintain voter secrecy and provide correct vote tallies. A voter could use their hashtag number to verify that his/her vote was included in the total vote tally.

MR. MILLER, in response to Chair Shower, apologized that his explanation was more technology oriented to describe blockchain technology than he would have preferred.

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MR. MILLER turned to slide 32, Potential System Flow. He said the graphic from followmyvote.com ties the five pieces of technology to build the system. A person would gain authentication via a digital wallet to access the secure cloud infrastructure. Tokenization technology ensures that an authorized voter casts his/her ballot using a dual-purpose system of blind tokens to create anonymity whether the system uses electronic, absentee or in-person paper ballots. A secured vote enters a blockchain ballot box, is counted, the results are tallied, and analytics are performed.

MR. MILLER said the digital wallet allows voters the ability to verify that their vote was counted correctly and confirm the results. The key principle is that the absentee, mail, or in-person voting process will maintain voter security and voter privacy, he said.

MR. MILLER referred to a patent diagram on slide 33 that the US Post Office filed in August 2020 to create a blockchain system for mail-in ballots. He said the USPS is using the same concept in its patent. If approved, the USPS could be a potential supplier for absentee ballots or all by-mail voting in Alaska.

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MR. MILLER turned to slide 34, How, What, and Why. He said he hopes the PowerPoint helps the committee understand how to use blockchain technology to create a secure, auditable, accessible election system and translate that knowledge to good policy decisions. The idea is to provide voter confidence of "one voter, one vote" in an efficient election.

CHAIR SHOWER remarked that the information on blockchain technology could help the committee find ways to address election integrity and restore people's faith in the system. He maintained his interest in ensuring that eligible voters have easy access to voting in a reliable voting system.

CHAIR SHOWER highlighted that rural Alaskan voters often do not have reliable cell phone, internet access or connections. This means SB 39 must allow a variety of ways to vote. For example, the USPS is considering using a blockchain. This technology could have positive implications for voting. He expressed his interest in working with Mr. Miller to address specific issues.

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MR. MILLER, in response to Senator Holland, said he is physically located in Lehi, Utah.

[CHAIR SHOWER held SB 39 in committee.]

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There being no further business to come before the committee, Chair Shower adjourned the Senate State Affairs Standing Committee meeting at 5:09 p.m.