

Date of Hearing: April 30, 2024

ASSEMBLY COMMITTEE ON PRIVACY AND CONSUMER PROTECTION

Rebecca Bauer-Kahan, Chair

AB 2980 (Low) – As Introduced February 16, 2024

AS PROPOSED TO BE AMENDED

**SUBJECT:** County recorder

**SYNOPSIS**

*County recorders play a key role in governance by serving as a centralized repository for essential documents, including vital records—birth, marriage, and death certificates—and real estate records. Management of these records has shifted online over the years, providing more efficiency and transparency for the public.*

*One potential means of administering these electronic records is blockchain—a database of records shared across a network of computers. SB 786 (Hertzberg, 2022) authorized counties to issue certified copies of a birth, death, or marriage record by means of blockchain technology. This bill, which is sponsored by the California Blockchain Advocacy Coalition and supported by the Digital Currency Traders Alliance, seeks to provide similar authority in the context of real estate documents. Proponents argue the bill offers a permissive means for counties to update their outdated property indexing systems by adopting a more dynamic, secure technology that streamlines the transfer of record titles between parties and reduces errors.*

*Unlike SB 786, which was sponsored by the County Recorders Association of California (CRAC), this bill does not enjoy the support of CRAC, which is neutral on the bill. The bill is opposed by the California Land Title Association and the California Realtors Association, who assert it “would risk driving up consumer and local agency costs by creating a new, duplicative index of real property records with few guardrails that risks a patchwork of differing implementations across the state, while leaving open the question of how the programs implemented pursuant to the bill would interact with existing privacy laws and requirements relating to the Electronic Recording Delivery System (ERDS) overseen by the California Attorney General’s (AG’s) office.”*

*Committee amendments would (1) predicate a county’s adoption of blockchain for the bill’s purposes on a finding by the county board of supervisors that using blockchain for real property documents is at least as secure and privacy-protective as any other electronic system in use by recorders; (2) require that any such use must be consistent with applicable requirements of the ERDS; and (3) sunset the bill’s provisions on December 31, 2029.*

**SUMMARY:** Authorizes county recorders to index any record or amended record on a publicly accessible distributed ledger using blockchain technology. Specifically, **this bill:**

- 1) Specifies that a recorder may index any record or amended record on a publicly accessible distributed ledger using blockchain technology.

- 2) Defines “blockchain technology” as a decentralized data system, in which the data stored is mathematically verifiable, that uses distributed ledgers or databases to store specialized data in the permanent order of transactions recorded.

**EXISTING LAW:**

- 1) Requires county recorders, upon payment of proper fees and taxes, to accept for recordation any instrument, paper, or notice that relates to real property, if the instrument, paper, or notice contains sufficient information to be indexed as provided by statute, meets recording requirements of state statutes and local ordinance, and is photographically reproducible. Specifically prohibits county recorders from refusing to record any instrument, paper, or notice that relates to real property on the basis of its lack of legal sufficiency. (Gov. Code § 27201(a)(1)(A).)
- 2) Enables a person of or related to a record to request that the recorder correct information contained in an index of record. Requires the recorder, if sufficient evidence is provided to determine that there is an error in the index that needs to be corrected, to correct the index entry within 30 business days of receiving the request. (Gov. Code § 27201(a)(2).)
- 3) Enables a recorder, in lieu of written paper, to accept for recording digitized images, digital images, or both, of a recordable instrument, paper, or notice if the image conforms to other applicable statutes that prescribe recordability and the requester and addressee for delivery of the recorded images are the same and can be readily identified as a local or state government entity, or an agency, branch, or instrumentality of the federal government. (Gov. Code § 27279(b).)
- 4) Provides, upon approval by resolution the board of supervisors and system certification by the Attorney General, that a county record may establish an electronic recording delivery system. (Gov. Code § 27391(a).)
- 5) Requires the Attorney General, in consultation with interested parties, to adopt regulations for the review, approval, and oversight of electronic recording delivery systems. (Gov. Code § 27393(a).)
- 6) Requires a county recorder, in order to be eligible to establish an electronic recording delivery system, to contract with and obtain a report from a computer security auditor from a list approved by the Attorney General. Such systems must be audited annually, as specified. (Gov. Code § 27394(a), (b).)
- 7) Requires the Attorney General to monitor the security of electronic recording delivery systems statewide, in close cooperation with recorders and public prosecutors. Allows public prosecutors to seek relief for violations. (Gov. Code § 27396(a).)
- 8) Authorizes county recorders to issue certified copies of a birth, death, or marriage record by means of verifiable credential using blockchain technology. (Health & Saf. Code § 103526.5(e).)

**FISCAL EFFECT:** As currently in print, this bill is keyed non-fiscal.

**COMMENTS:**

1) **Author’s statement.** According to the author:

Housing contracts are frequently affected by fraud due to the participation of multiple parties, which can lead to errors and security issues. However, Blockchain technology provides a solution to this problem. Blockchain is a decentralized system for online record-keeping that employs cryptographic techniques to verify and record transactions. Each “block” in the “chain” contains multiple transactions, and every participant’s ledger is updated whenever a new transaction occurs. In other words, Blockchain is a secure recording system that ensures data integrity, which can streamline the transfer of record titles between parties and reduce errors.

2) **County recorders and property records.** County recorders are responsible for examining and recording all documents that deal with establishing ownership of real property. This includes the recording of title documents, notes, and home loan payoffs by homeowners, title companies, mortgage companies and government agencies involved in real estate transactions. This recording process is meant to provide the public notice about ownership and the chain of title for real property. To allow the public to search through these documents, the recorder establishes an index that is searchable by the names of the real property transaction and by date.

*Electronic Recording Delivery Services program.* The Electronic Recording Delivery Act of 2004 authorizes a County Recorder, upon approval by resolution of the Board of Supervisors and system certification by the Electronic Recording Delivery System (ERDS) program, to establish an ERDS for the delivery, and, when applicable, return of specified digitized electronic records or digital electronic records that are an instrument of real estate transactions, subject to specified conditions, including system certification, regulation and oversight by the ERDS program. The Attorney General has established the ERDS program within the Department of Justice, which is responsible for implementing the requirements of the law.<sup>1</sup> The vast majority of counties have adopted this program.

3) **Blockchain.** At its core, blockchain is a database technology maintained on a network of computers. Data about electronic transactions, including information about the parties, a timestamp, and information about the existing blockchain, are “hashed,” or encrypted, and then broadcast to the network. Individual nodes across the network validate those transactions and once consensus within the network is achieved, each set of transactions is bundled into a “block” that is appended to the existing “chain,” or ledger. Once a block is added to the chain, the new version of the chain becomes the authoritative version that is recognized by the network.<sup>2</sup>

Blockchain technology was originally developed for the cryptocurrency Bitcoin in order to facilitate direct peer-to-peer transactions without needing a third-party intermediary. The decentralized nature of Bitcoin’s version of blockchain makes it resistant to hacking.<sup>3</sup> “Essentially, a hacker would need to recalculate every hash in the chain to modify a record, which would take an enormous amount of computing power and would be evident to other nodes within the system. A potential hacker would have to take control of more than half of the

---

<sup>1</sup> Attorney General, “Electronic Recording Delivery System Program,” <https://oag.ca.gov/erds>.

<sup>2</sup> Vermont Secretary of State, “Blockchains for Public Recordkeeping and for Recording Land Records” (Jan. 15, 2019), p. 18, [White Paper: Blockchains for Public Recordkeeping and Recording Land Records \(vermont.gov\)](https://www.vermont.gov/files/whitepaper/blockchains-for-public-recordkeeping-and-for-recording-land-records).

<sup>3</sup> Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2008), p. 2 <https://bitcoin.org/bitcoin.pdf>.

computers in the network to alter a block since 51 percent of the nodes must verify that the resulting record change is valid.”<sup>4</sup>

There are different types of methods by which a blockchain network verifies new transactions. Bitcoin uses “proof of work”: network participants compete to validate new blocks and add them to the existing chain by racing to complete a cryptographic puzzle. The first participant to complete the puzzle is rewarded with Bitcoin in a process known as “mining.”<sup>5</sup> By contrast, another cryptocurrency known as Ethereum uses “proof of stake”: network participants put up their cryptocurrency as collateral for the right to validate new blocks and receive additional crypto tokens. If they improperly validate fraudulent data, they may forfeit their collateral.<sup>6</sup>

“A blockchain can be public, where any users can participate in the network as long as they can pass tests to prove their ability to solve complex mathematic problems.”<sup>7</sup> However, the computing power required to replicate and verify the same information across a vast network of computers can be cost-prohibitive and environmentally ruinous.<sup>8</sup> “[A] blockchain also can be private or ‘permissioned,’ wherein an administrator grants users—typically company employees or department staff—access to the network.”<sup>9</sup> Permissioned systems can be more easily controlled and efficiently maintained, but may lack the security of a truly decentralized system and thus may be more susceptible to attacks or manipulation.<sup>10</sup>

*Blockchain Working Group.* The California Blockchain Working Group (BWG) was established by AB 2658 (Calderon, Ch. 875, Stats. 2018). The bill required the working group to report to the Legislature on the potential uses, risks, and benefits of the use of blockchain technology by state government and California-based businesses. That report was delivered on July 1, 2020.<sup>11</sup> With respect to property records, the BWG stated:

**Efficient title search.** Title insurers create their own repositories of publicly recorded documents nationwide. If the state provides more records digitally in a unified, easily accessible and authenticated manner, the title search process could be made faster and less resource-intensive. Title insurers could then choose to pass the savings on to the consumer. If prices remain high despite new efficiencies, transparent and easily accessible data could allow new entrants to enter the space, enabling competition to drive prices down.<sup>12</sup>

With regard to fraud protection, the BWG stated that “[t]o the extent that emerging technologies have the potential to make title search, record validation, or detection of error or fraud cheaper,

---

<sup>4</sup> Senate Office of Research, “Issue Primer—Blockchain Technology,” (June 2019), pp. 3-4.

<sup>5</sup> Trautman & Molesky, “A primer for blockchain,” 88 UMKC L. Rev. 239, 245; Senate Office of Research “Issue Primer—Blockchain Technology,” (June 2019), p. 5; Lanz, “What Happens When the Last Bitcoin is Mined?” (Apr. 22, 2024), [What Happens When the Last Bitcoin Is Mined? - Decrypt](#).

<sup>6</sup> Napoletano, “Proof of Stake Explained,” (Aug. 25, 2023), [What Is Proof of Stake? How Does It Work? – Forbes Advisor](#).

<sup>7</sup> Senate Office of Research, “Issue Primer—Blockchain Technology,” (June 2019), p. 3.

<sup>8</sup> See *Bitcoin Mining Now Consuming More Electricity Than 159 Countries, Including Ireland & Most Countries In Africa* Power Compare <https://powercompare.co.uk/bitcoin> (as of Mar. 28, 2021).

<sup>9</sup> Senate Office of Research, “Issue Primer—Blockchain Technology,” (June 2019), p. 3.

<sup>10</sup> Permissioned vs. Permissionless Blockchains: Exploring the Key Distinctions (Sept. 26, 2023), <https://cryptomoody.com/explainers/permissioned-vs-permissionless-blockchains-exploring-the-key-distinctions/>.

<sup>11</sup> Blockchain Working Group, “Blockchain in California: A Roadmap,” *California Government Operations Agency*, (July 1, 2020), [BWG-Final-Report-2020-July1.pdf \(ca.gov\)](#).

<sup>12</sup> *Id.* at pp. 87-88.

faster, or more accurate,” it was advisable to “encourage counties to consider blockchain technologies and to be forthcoming in providing technologists the data they need. . . .”<sup>13</sup>

*Privacy concerns.* The BWG report identifies several concerns related to the implementation of blockchain. Among them are concerns pertaining to privacy and governance:

Under the U.S. Constitution, every citizen is protected from unlawful search and seizure. Arguably, this means that even if a government entity is an administrator of information held on a blockchain, that entity may not have unfettered access to personal information of citizens without reasonable controls. This concern is at the heart of many fears surrounding blockchain. Given the general hesitation to publish private information on a distributed ledger, it is recommended that private personal identifiable information be kept to a minimum. Although vital data may be stored on the blockchain, what generally is stored is a hash of the data, not the data itself.

To preserve privacy, institutions should not store personal information on a blockchain, encrypted or not. They should also be cautious with hashes of private data because hashing functions are deterministic, and if the input is known, the hash can be verified. If a small amount of information is hashed, such as names or emails, an attacker could run through a list of likely inputs and compare the generated hashes. Protection against such an attack is typically achieved by adding arbitrary data (known as salt) to the data that will be hashed.

Additionally, if illegal, incorrect or otherwise objectionable data is entered onto a blockchain ledger, it cannot be removed. The permanence and persistence of this information could potentially affect the privacy of individuals. Strong governance models and controls regarding data security and privacy must be examined carefully to regulate information added to the blockchain.<sup>14</sup>

*Executive Order on Blockchain.* In 2022, Governor Newsom issued Executive Order N-9-22, which, among other things, directed the California Government Operations Agency to “Issue a Request for Innovative Ideas . . . to the private sector, academia, and community, to present pilots for innovative policies, programs, and solutions that demonstrate and showcase the potential of adopting blockchain technologies to respond to specific challenges identified by state agencies to address the considerations for appropriate application identified by the California Blockchain Working Group.”<sup>15</sup>

4) **Blockchain and land records in other jurisdictions.** A number of jurisdictions have explored the use of blockchain to record real estate transactions. It appears these efforts have not led to widespread adoption of blockchain for these purposes.

- Cook County, Illinois studied the use of blockchain for real estate transactions. “Although Cook County’s study found blockchain offered many upsides, it concluded

---

<sup>13</sup> *Id.* at p. 8.

<sup>14</sup> *Id.* at pp.63-64.

<sup>15</sup> Executive Department, State of California, “Executive Order N-9-22” (May 4, 2022), [5.4.22 Blockchain EO N-9-22 signed \(ca.gov\)](#).

that the County was not ready to completely overhaul its existing system and would continue working with others to develop a better process to resolve outstanding issues.”<sup>16</sup>

- South Burlington, Vermont, adopted a pilot program using blockchain to record land records. Although the study found that use of blockchain had potential benefits, it also concluded: “For blockchains to be a candidate for Vermont’s land recordings, some major overhauls would need to be made to State law and standard operating procedures. Inserting blockchain technology into existing processes would add additional complexity with little additional value gained.”<sup>17</sup>
- Sweden tabled a similar project, finding that although a blockchain-based system for real estate transfers “had merit, ultimately it was hampered by some key hurdles such as more urgent national priorities, legal constrains, and blockchain’s reputation.”<sup>18</sup>

A common theme appears to be that while blockchain could, in theory, be superior to existing systems, the cost of replacing legacy systems might outweigh the benefit. In the Republic of Georgia, by contrast, where “the blockchain component did not fully replace the existing title registry system; rather, it was a back-end addition to the existing front-end program,” the government decided to continue using blockchain for land registry matters following a successful pilot project.<sup>19</sup>

**5) A solution in search of a problem?** According to the background sheet, “real estate fraud is becoming more common as scammers and criminals are increasingly sophisticated, accessing public online databases to manipulate property titles. In other words, fraudsters can easily falsify public records and declare ownership or ‘titles’ of property.” However, it is unclear how using blockchain to index records would thwart fraud. As one scholar notes, “[w]hile blockchain enhances security by preventing records from being altered once filed, it cannot prevent one from filing forged or fraudulently obtained documents.”<sup>20</sup>

Furthermore, recording a document is a ministerial duty—recorders review documents as to form, not legality. Indeed, they are expressly prohibited from refusing to record any instrument, paper, or notice that relates to real property due to legal insufficiency.<sup>21</sup> As described in a recent law review article, the recording system:

is almost exclusively one of notice, which aims to convey information to parties that may or may not be accurate. Rather than being definitive, recording information serves as a basis for further investigation. One may find a cloud on title to property, only to then discover that the

---

<sup>16</sup> Padilla, “Real estate trends: title and blockchain technology” (Spring, 2023) Belmont L. Rev. 234, 251.

<sup>17</sup> Vermont Secretary of State, “Blockchains for Public Recordkeeping and for Recording Land Records” (Jan. 15, 2019), p. 5, [White Paper: Blockchains for Public Recordkeeping and Recording Land Records \(vermont.gov\)](https://www.vermont.gov/files/secretaryofstate/blockchains-for-public-recordkeeping-and-for-recording-land-records).

<sup>18</sup> “Real estate trends: title and blockchain technology,” *supra*, Belmont L. Rev. at p. 249.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Id.* at p. 242.

<sup>21</sup> Gov. Code § 27201(a)(1)(A).

basis for the ostensible claim is invalid. In other cases, the claim revealed in the record may require additional acts to cure the title.”<sup>22</sup>

The legal sufficiency of real property documents is the province of courts, not recorders.

It is noteworthy that the County Recorders Association of California (CRAC) has no position on this bill. CRAC sponsored SB 786 (Ch. 704, Stats, 2022), which gave county recorders authority to issue certified copies of a birth, death, or marriage record by means of blockchain technology. Unlike real property records, which are submitted to recorders and indexed to provide public notice, a vital record is provided by the recorder to individuals. Before SB 786, this could only be done on paper. Blockchain, in the view of the CRAC, provided a secure digital option for provision of these records to individuals.

Additionally, the California Land Title Association and the California Realtors Association jointly oppose the bill. Their concerns, and the sponsor’s responses, follow:

*Concern: the bill creates a duty for title companies to search a duplicative database in any county that indexes documents on a blockchain ledger.* The sponsor responds: “AB 2980’s goal is to serve the public need – not the need of title companies. AB 2980 is designed to explore how blockchain technology can build efficiencies and a point of truth within local government data systems. Such efficiencies will save local governments money, and provide for stronger and more secure data sets.”

*Concern: the bill lacks specificity, leaving the state at risk of a patchwork of implementations with no tangible consumer benefits.* The sponsor responds: “Counties already vary widely when it comes to recording systems, and this bill maintains their local discretion and control. While there is some degree of operational parity among county recorder offices, each operates and is managed at the county-level.”

*Concern: the bill does not seem to contemplate California’s extensive privacy protections for elected and appointed officials.* The sponsor responds: “The title and the deed are already public record. They’re accessible from most municipalities in some way, albeit complicated and inefficient.”

*Concern: the bill does not make clear how it would interact with the ERDS, overseen by the California Attorney General’s office.* The sponsor responds: “Nothing in this bill suggests creating a system that would interfere with the ERDS program, but the author is willing to amend language into the bill acknowledging that any systems or process utilizing blockchain technology would comply with the ERDS program.”

*Concern: the bill may create a false sense of security with respect to the legitimacy of recorded documents.* The sponsor responds:

If implemented, a county recorder would be taking an existing document and hashing the metadata of those documents. In other words, putting the document “on chain” creates a

---

<sup>22</sup> Moringiello & Odinet, “Cryptocurrency Symposium: Blockchain Real Estate and NFTs” (March 2023) 64 Wm. & Mary L. Rev. 1131, 1136 (concluding, “for all its flaws and ripe old age, the U.S. land-recording system seems to be working quite fine”).

fingerprint of that document. The benefit of blockchain technology is that one would be able to prove that document is a one of one, and that anything changed on that document is not valid.

The objective is to make these documents verifiable, validate them, and bring them on chain. For example, take the deed of your house. The deed itself is made up of data points from different levels of government and depending on how big your house is, or if you own an apartment building at the state level. If a county chooses to implement the bill, AB 2980 would take a step forward aggregating these distinct points of consensus to provide a sense of security versus what is now as a false security.

Despite these concerns, a few points are worth bearing in mind. First, existing law does not clearly preclude the use of blockchain to index property records; arguably, this bill simply makes that authority express. Second, as the sponsor notes, blockchain technology has the potential to produce a more efficient, streamlined process that could be superior to the status quo. Finally, the bill is permissive. County recorders are free to decline to use blockchain technology.

6) **Committee amendments.** In view of opposition concerns, the author has agreed to amend the bill to require that (1) adoption of blockchain for purposes of the bill be subject to a finding in a resolution by the county board of supervisors that using blockchain is at least as secure and privacy-protective as any other electronic system in use by recorders; and (2) any such use must be consistent with applicable requirements of the ERDS. Finally, the author has agreed to sunset this authority on December 31, 2029. The amendments are as follows:

(c) (1) ~~The~~ *Subject to paragraphs (2) and (3), the* recorder may index any record or amended record on a publicly accessible distributed ledger using blockchain technology.

(2) *Before a recorder may use blockchain technology for the purpose specified in paragraph (1), the county board of supervisors shall first adopt a resolution detailing findings that the use of such technology is at least as secure and privacy-protective as any other electronic system of indexing a record currently used by recorders in the state.*

(3) *Any use of blockchain technology pursuant to this subdivision must be consistent with applicable requirements under the Electronic Recording Delivery Act of 2004 and any implementing regulations adopted pursuant to that act.*

(4) For purposes of this subdivision, “blockchain technology” means a decentralized data system, in which the data stored is mathematically verifiable, that uses distributed ledgers or databases to store specialized data in the permanent order of transactions recorded.

7) **Related legislation.** SB 786 (Hertzberg, Ch. 704, Stats, 2022) gave county recorders authority to issue certified copies of a birth, death, or marriage record by means of blockchain technology. The bill was sponsored by the County Recorders Association of California and passed this Committee unanimously.

SB 638 (Hertzberg, 2021) would have removed the sunset date for the provision that authorizes corporations to include a provision in their articles of incorporation authorizing the use of blockchain technology to record and track the issuance and transfer of stock certificates and amends the definition of blockchain technology. The bill was held on the Assembly inactive file.

AB 2658 (Calderon, Ch. 875, Stats. 2018), requires the Secretary of the Government Operations Agency to appoint a blockchain working group and require the working group to report to the Legislature on the potential uses, risks, and benefits of the use of blockchain technology by state government and California-based businesses, as specified.

SB 838 (Hertzberg, Ch. 889, Stats. 2018) authorized, until January 1, 2022, a corporation to include a provision in its articles of incorporation authorizing the use of blockchain technology to record and track the issuance and transfer of stock certificates.

**ARGUMENTS IN SUPPORT:** The Digital Currency Traders Alliance writes:

The potential impact of Assembly Bill No. 2980 on the broader blockchain ecosystem. By enhancing the transparency and reliability of asset ownership and history through blockchain-recorded indexes, the bill promises to streamline and secure transactions involving real-world assets. This could significantly accelerate the mainstream adoption of blockchain technology and consumer protections within our sector.

Moreover, the bill's approach to modernizing public record-keeping through blockchain technology could serve as a model for future regulatory and operational frameworks, fostering a more favorable environment for cryptocurrency adoption and innovation. Indeed, by increasing the trustworthiness and accessibility of these documents, we anticipate a reduction in fraud and a notable increase in confidence in digital transactions, which is paramount for the continued growth and acceptance of digital currencies and blockchain technology.

**ARGUMENTS IN OPPOSITION:** See Comment 6.

**REGISTERED SUPPORT / OPPOSITION:**

**Support**

California Blockchain Advocacy Coalition (sponsor)  
Digital Currency Traders Alliance

**Opposition**

California Association of Realtors  
California Land Title Association

**Analysis Prepared by:** Josh Tosney / P. & C.P. / (916) 319-2200