

ASSEMBLY THIRD READING
AB 2047 (Bauer-Kahan)
As Amended May 18, 2026
Majority vote

SUMMARY

Requires the Department of Justice (DOJ) or other relevant state agency, among other things, to engage in an investigation of known firearm blueprint design files and existing firearm blueprint detection algorithms and any business that produces or manufactures three-dimensional printers for sale or transfer in California to submit to the DOJ an attestation for each make and model of printer they intend to make available for sale or transfer in California, as defined.

Major Provisions

- 1) States that the DOJ or other relevant state agency shall engage in an investigation of known firearm blueprint design files and existing firearm blueprint detection algorithms.
- 2) States that the DOJ or other relevant state agency may create, maintain, and regularly update a library of firearm blueprint files and illegal firearm parts blueprint files for use by firearm blueprint detection algorithm designers, or may coordinate with another government agency, academic consortium, or major research institution, including, but not limited to, a University of California academic department, to create, maintain, and regularly update a library with safeguards to prevent unauthorized access to, or misuse of, the library.
- 3) Requires on or before January 1, 2028, the DOJ or other relevant state agency shall publish written guidance on performance standards for persons or entities engaged in the creation of firearm blueprint detection algorithms to be certified for three-dimensional printer manufacturer use in complying with specified laws.
- 4) States that the DOJ or other relevant state agency may seek input from relevant stakeholders and technical experts in the process of preparing written guidance on performance standards for firearm blueprint detection algorithms. Stakeholder input may include, but is not limited to, identification of design files that should be used to evaluate if an algorithm is reaching a false-positive result that erroneously identifies the design file as a firearm or illegal firearm part blueprint.
- 5) Provides that the performance standards shall require that firearm blueprint detection algorithms have the capacity, with a high degree of accuracy, to do all of the following:
 - a) Evaluate three-dimensional printing files, whether in the form of STL files or other computer-aided design files or geometric code.
 - b) Detect and identify any such files that can be used to program a three-dimensional printer to produce a firearm or illegal firearm parts.
 - c) Flag any disallowed files for rejection by a software control process.
- 6) Provides that the performance standards shall require that, at a minimum, firearm blueprint detection algorithms have the capacity to utilize an inventory of disallowed firearm blueprint

files that have been commonly downloaded or shared on public internet forums to detect those files and modified versions of those files.

- 7) States that the DOJ or other relevant state agency set standards for acceptable false-positive and false-negative rates in detection algorithm performance but shall not require that a firearm blueprint detection algorithm produce a perfect success rate at detecting disallowed files.
- 8) States that the DOJ or other relevant state agency preparing the written guidance on performance standards shall include performance standards requiring that the firearm blueprint detection algorithm have the capacity to implement regular updates to the set of disallowed firearm files it has the capacity to detect, to an extent and with a frequency to be determined by the department that accounts for the rate of innovation for the design and availability of new firearm blueprint files. If the written guidance on performance standards determines that a novel technique with a substantially higher degree is available to be utilized by algorithm developers, the DOJ or other relevant agency shall issue an update to the written guidance on performance standards.
- 9) The department or other relevant state agency preparing the written guidance on performance standards may adopt some or all of any set of performance standards created by a nongovernmental entity, including, but not limited to, an academic consortium or a global standard-setting nonprofit.
- 10) States that the DOJ or other relevant state agency preparing the written guidance on performance standards shall periodically review emerging detection software techniques, including, but not limited to, advanced forms of image recognition and pattern analysis as well as volumetric search functionality.
- 11) Provides that if, at any time, the department or other relevant state agency preparing the written guidance on performance standards determines that a novel technique with a substantially higher degree of performance is available to be utilized by algorithms already certified, as specified, the DOJ or other relevant state agency preparing the written guidance on performance standards may require that previously certified algorithms update their technology to match or exceed the performance of that novel technique.
- 12) Provides that any vendor with a previously qualified algorithm who is required to make that update shall have a reasonable period of time, not less than three months, to update their previously qualified algorithm.
- 13) States that the DOJ or relevant state agency shall engage in an investigation of existing software controls processes available for use in three-dimensional printers for the purpose of preventing three-dimensional printing of firearms and illegal firearm parts.
- 14) Requires that on or before January 1, 2028, the DOJ or relevant state agency shall publish written guidance on performance standards for persons or entities engaged in the creation of software controls processes for three-dimensional printer manufacturer use in complying defined laws.
- 15) States that the DOJ or other relevant state agency preparing the written guidance on performance standards may seek input from relevant stakeholders and technical experts in the

process of preparing written guidance on performance standards for software controls processes, including from persons who provide software, firmware, or other services integral to establishing software controls processes for three-dimensional printers.

- 16) Establishes that the performance standards shall set minimum standards on developer testing but shall not require that software controls processes have the capacity, to a high degree of reliability, to effectively prevent a technically skilled user from evading a firearms blueprint detection algorithm.
- 17) States that the DOJ shall not require that a software controls process produces a perfect success rate at preventing a user from evading a firearms blueprint detection algorithm.
- 18) Provides that the performance standards shall set out options for design forms that may be used for a software controls process integration into a three-dimensional printer, including all of the following:
 - a) Firmware design.
 - b) Integrated preprint software design.
 - c) Any other form, including, but not limited to, handshake authentication design or other design forms directed towards compatibility with open-source architecture, if the department first determines that the software controls process is both of the following:
 - i) At least as effective in ensuring no print jobs can proceed unless they are evaluated by a firearm blueprint detection algorithm as the design forms described.
 - ii) At least as resistant to being defeated by a technically skilled user as the design forms described in subparagraphs (A) and (B).
- 19) Provides that the written guidance shall include both of the following:
 - a) For firmware design, guidance for how vendors are required to demonstrate that their technology will ensure a printer directs potential print jobs to the algorithm before printing can occur.
 - b) For integrated preprint software design, guidance for how vendors shall demonstrate that printers will accept print jobs exclusively from a single preprint software and will not accept print jobs from any other preprint software, including from a user seeking to evade a detection algorithm.
- 20) States that DOJ or other relevant state agency preparing the written guidance on performance standards may adopt some or all of any set of performance standards created by a nongovernmental entity, including, but not limited to, an academic consortium or a global standard-setting nonprofit.
- 21) Requires on or before March 1, 2028, the DOJ or other relevant state agency shall publish written guidance on performance standards for manufacturers of three-dimensional printers on how to equip printers with firearm blocking technology. This guidance shall include: Performance standards performance standards on how to test functionality of the firearm

blueprint detection algorithm and software controls process to meet a specified degree of reliability in blocking the printing of firearms or illegal firearm parts.

- 22) Establishes that the performance standards described above shall be made publicly available on the internet website of the department or the state agency that prepared the written guidance on performance standards described in this section.
- 23) Requires on or before July 1, 2028, any business that produces or manufactures three-dimensional printers for sale or transfer in California shall submit to the DOJ an attestation form for each make and model of printer they intend to make available for sale or transfer in California.
- 24) States that the self-attestation shall include all of the following information:
 - a) The make and model of the three-dimensional printer.
 - b) Confirmation that the manufacturer has equipped that make and model with a certified firearm blueprint detection algorithm.
 - c) Confirmation that the manufacturer has equipped that make and model with a certified software controls process.
 - d) Confirmation of testing the functionality of the certified firearm blueprint detection algorithm and software controls process once installed according to performance standards issued by the DOJ, as specified.
- 25) States that if the self-attestation form is incomplete or contains information indicating the make and model of printer identified may not be effectively equipped with firearm blocking technology, the Attorney General has authority to investigate and inspect the submission, including, but not limited to, requesting sample models from the manufacturer to verify the attestation of compliance and requesting further information about the type of firearm blueprint detection algorithm or software controls process used by the manufacturer.
- 26) States that any make and model of three-dimensional printer actively under investigation and inspection shall be identified as having an incomplete attestation on the list, as described.
- 27) Requires that on or before September 1, 2028, DOJ shall publish a list of all the makes and models of three-dimensional printers whose manufacturers have submitted complete self-attestation on file.
- 28) Specifies that the lists shall be updated no less frequently than on a quarterly basis and made accessible on the DOJ's internet website. Retailers or distributors of three-dimensional printers shall consult the lists posted on the department's internet website to ensure their inventory for sales in California consists of compliant three-dimensional printers.
- 29) Provides that it shall be an affirmative defense to any action against a retailer, distributor, importer, wholesaler, or other individual transferor of a three-dimensional printer for an alleged, specified violation that the retailer, distributor, or other individual transferor only sold or transferred the three-dimensional printer after verifying that the make and model was

listed by the DOJ on the published list described, and not designated as having an incomplete attestation.

- 30) States that any business that produces or manufactures three-dimensional printers for sale or transfer in California shall take both of the following steps:
- a) Before any three-dimensional printer is offered, sold, transferred, or distributed to any person or business in California, the manufacturer shall equip the three-dimensional printer with certified firearm blocking technology, as described.
 - b) Before any three-dimensional printer is offered, sold, transferred, or distributed to any person or business in California, the manufacturer shall submit a self-attestation of installation of firearm blocking technology to the department, as described.
- 31) States that any business that sells, offers to sell, distributes, or transfers for consideration a three-dimensional printer in California shall consult the list published by the DOJ, as described.
- 32) Provides that it shall be unlawful to sell or transfer for consideration a three-dimensional printer in California that does not meet both of the following requirements:
- a) The three-dimensional printer shall be equipped with firearm blocking technology.
 - b) The three-dimensional printer shall be listed by the DOJ on the published list specified as having a complete attestation on file.
- 33) Establishes that this section shall not apply to the following products:
- a) Printers manufactured for and sold exclusively to a state-licensed firearms manufacturer, as defined.
 - b) Printers manufactured for and sold exclusively to the State of California or law enforcement agencies of the United States for the manufacturing of firearms for law enforcement or military purposes.
 - c) Printers manufactured for and sold exclusively to aerospace, biomedical, automotive, or chemical or mechanical engineering companies or government contractors that are not also sold on the consumer retail market.
 - d) Printers manufactured for and sold exclusively to entertainment industry stagecraft and propmaking studios.
- 34) Provides that a civil action may be brought against a person who does either of the following:
- a) Sells, offers to sell, or transfers for consideration a three-dimensional printer in California that is not equipped with firearm blocking technology.
 - i) It shall be an affirmative defense to any action against a retailer, distributor, wholesaler, importer, or other individual transferor of a three-dimensional printer for an alleged violation of this section that the retailer, distributor, wholesaler, importer, or other individual transferor only sold or transferred the three-dimensional printer

- after verifying that the make and model was listed by the department on the published list described in this section, and not designated as having an incomplete attestation.
- b) Knowingly files an attestation containing false information. The filing of a civil action under this section shall not preclude potential criminal prosecution for perjury, as defined.
- 35) States that a person who has suffered harm in California as a result of a violation of this section may bring an action in a court of competent jurisdiction to establish that a person has violated this section, and may seek compensatory damages as well as injunctive relief sufficient to prevent the person and any other defendant from further violating the law.
- 36) Provides that the Attorney General, a county counsel, or a city attorney may bring an action in a court of competent jurisdiction to establish that a person has violated this section, and may seek a civil penalty not to exceed \$25,000 for each violation, as well as injunctive relief sufficient to prevent the person and any other defendant from further violating the law.
- 37) States that a prevailing plaintiff shall be entitled to recover reasonable attorney's fees and costs.
- 38) States that the remedies provided by this section are cumulative and shall not be construed as restricting any other rights, causes of action, claims, or defenses available under any other law.
- 39) States that the DOJ may promulgate regulations and develop forms and publications necessary to implement this title.
- 40) Provides that it is unlawful to knowingly disable, deactivate, uninstall, or otherwise circumvent any firearm blocking technology installed in a three-dimensional printer with intent to manufacture firearms or to knowingly distribute, sell, or transfer for consideration in California one or more modified versions of a three-dimensional printer identified on the DOJ's list of three-dimensional printers eligible for sale in California with the intent to facilitate the unlawful manufacture of firearms, as defined, as described. States that a violation of this section is a misdemeanor and does not preclude prosecution under any other law providing for a greater penalty.
- 41) Removes the requirement that on or before January 1, 2028, the DOJ or other relevant state agency that prepared the written guidance on performance standards described in this section shall accept applications for certification of firearms blueprint detection algorithms and begin issuing certifications of algorithms that meet or exceed the performance standards, among other related requirements.
- 42) Removes requirement that the list of firearm blueprint detection algorithms that have received certification as meeting or exceeding performance standards shall be made publicly available on the internet website of DOJ or other relevant state agency issuing certification, among other related requirements.
- 43) Removes requirement that requires on or before January 1, 2028, the DOJ or other relevant state agency that prepared the written guidance on performance standards described shall accept applications for certification of software controls processes and begin issuing

certifications of software controls processes that meet or exceed the performance standards described, among other related requirements.

- 44) Removes requirement that on or before July 1, 2028, the DOJ shall begin accepting applications from three-dimensional printer manufacturers for a voluntary verification of their self-attestation, allowing the DOJ to inspect and confirm that a specific make and model of printer complies with the performance standards, among other related requirements.
- 45) Removes requirement stating that it shall be an affirmative defense to any action for violation of this paragraph that the department issued a written notice of compliance verification for the make and model of printer at issue.
- 46) Defines "department" as the Department of Justice.
- 47) Defines "firearm" as a device, designed to be used as a weapon, from which is expelled through a barrel, a projectile by the force of an explosion or other form of combustion.
- 48) Defines "firearm blocking technology" as hardware, firmware, or other integrated technological measures capable of ensuring a three-dimensional printer will not proceed to any print job unless the underlying three-dimensional printing file has been evaluated by a firearms blueprints detection algorithm and determined not to be a printing file that would produce a firearm or illegal firearm parts.
- 49) Defines "firearm blueprint detection algorithm" as a software service that evaluates three-dimensional printing files, whether in the form of stereolithography (STL) files or other computer-aided design files or geometric code, to determine if the files can be used to program a three-dimensional printer to produce a firearm or illegal firearm parts, and flag any such files to prevent their use to manufacture a firearm or illegal firearm parts.
- 50) Defines "firearm precursor part" as any forging, casting, printing, extrusion, machined body or similar article that has reached a stage in manufacture where it may readily be completed, assembled or converted to be used as the frame or receiver of a functional firearm, or that is marketed or sold to the public to become or be used as the frame or receiver of a functional firearm once completed, assembled or converted.
- 51) Defines "firmware design" as integration of a firearms blueprint detection algorithm directly into a three-dimensional printer's firmware, such that any geometric code received by the printer must be evaluated by the algorithm before the printer will proceed to print, and such that the printer will reject print jobs identified by the algorithm because they would direct the printer to print firearms or illegal firearm parts.
- 52) Defines "illegal firearm parts" as a firearm precursor part and any part designed and intended for use in converting a semiautomatic weapon into a machine gun, including, but not limited to, a pistol convertor.
- 53) Defines "integrated pre-print software design" as a limitation of a three-dimensional printer's operation to accept geometric code for printing exclusively from a single slicer or other preprint software, which may be the manufacturer's proprietary software, and integration of a firearms blueprint detection algorithm into that preprint software, such that any STL file or other computer-aided design file must be evaluated by the algorithm before the software will

proceed to produce geometric code, and such that the software will not produce geometric code for files that are identified by the algorithm because they would direct the printer to print firearms or illegal firearm parts.

- 54) Defines "pistol convertor" as any device or instrument that when installed in or attached to the rear of the slide of a semiautomatic pistol, replaces the backplate, and interferes with the trigger mechanism and thereby enables the pistol to shoot automatically more than one shot by a single function of the trigger. A pistol converter includes, but is not limited to, a pistol converter manufactured using a three-dimensional printer, as defined.
- 55) Defines "software controls process" means a system designed to stop a three-dimensional printer from initiating any print job unless the underlying three-dimensional printing file has been evaluated by a firearms blueprints detection algorithm and determined not to be a printing file that would produce a firearm or illegal firearm parts.
- 56) Defines "three-dimensional printer" as a computer-aided manufacturing device capable of producing a three-dimensional object from a three-dimensional digital model through an additive manufacturing process that involves the layering of two-dimensional cross sections formed of a resin or similar material that are fused together to form a three-dimensional object.

COMMENTS

According to the Author

"California has set a standard for the country in creating commonsense gun regulations and gun violence prevention work. AB 2047 continues this work by requiring that all three-dimensional (3D) printers sold in California are equipped with firearm blocking features to prohibit the printing of dangerous gun parts. Specifically, it requires that they have a firearm detection algorithm and software controls that identifies files that would produce guns and illegal gun parts and block such printing requests.

"There is alarming data showing that 3D-printed firearms have become an escalating public safety threat. A report from Everytown for Gun Safety shows that recoveries of 3D-printed guns increased by 1,000 percent between 2020 and 2024. Just last month, Santa Rosa police seized three 3D printers along with 167 firearms- including 150 guns with obliterated serial numbers- in an illegal ghost gun manufacturing operation that left weapons easily accessible to a young child.

"As technology evolves, it's important that consumer protections change with it to ensure the safety of our communities."

Arguments in Support

According to *Brady United Against Gun Violence*, "The Firearm Printing Prevention Act, which will combat the emerging crisis of 3D printed firearms by requiring that every 3D printer sold in our state comes with technology that will block 3D print jobs for firearms and illegal firearm parts that turn pistols into machine guns (machinegun-conversion devices, commonly called "switches" or "MCDs").

"Rapid evolution in the printing industry in recent years has radically increased the threat from 3D printed firearms. Over the past decade, 3D printers have improved in capabilities, dropped in price, and exploded in popularity. Entry-level models now cost as little as \$250 and are capable of printing the critical components of firearms. Anyone with internet access can find thousands of digital instructional files for guns and illegal gun parts online.

"California's status as the state with the strongest gun laws makes 3D printing all the more appealing for people prohibited from owning firearms. In 2025, domestic abusers, teenagers, and large-scale criminal suppliers were found manufacturing 3D-printed firearms in California. Just in February 2026:

- 1) Law enforcement in Santa Rosa seized over 165 guns and 3D printers from a 22-year-old ghost guns manufacturer.
- 2) Victor Valley sheriffs arrested two men with a 3D-printed assault rifle, over 130 Polymer80 jigs (ghost gun making tools), 3D printer materials and a 3D printing guide for different firearms.
- 3) A San Jose teen was caught with 27 finished or near-finished 3D-printed firearms, including [do it yourself] (DIY) machine guns, and two 3D printers.

"3D-printed firearms undermine our state's entire gun safety apparatus. Skip-the-background-check gun printing upends the entire system of gun safety laws - circumventing California's laws that seek to ensure guns don't end up in the hands of people with dangerous histories and that extremely dangerous weapons don't end up in our state.

"The good news is: the technology already exists to equip printers to identify and block these dangerous print jobs—this new legislation will simply ensure that printer manufacturers actually deploy these solutions and stop the spread of DIY firearms before it accelerates any further. The Firearm Printing Prevention Act is an upstream solution that builds on California's legacy of combating emerging firearm threats, like the first wave of ghost guns and DIY machine guns.

"California has taken early steps to prohibit personal manufacturing of firearms with a 3D printer and created pathways to civil liability for people who aid and abet illegal 3D firearm manufacturing. While those recent laws have focused on prohibition and deterrence, AB 2047 provides an opportunity for prevention using new technology to stop 3D gun printing at its source. We can't fully address this emerging threat to our foundational gun laws and public safety without this intervention at the manufacturing stage.

"We can help prevent illegal guns flowing into California communities and thwart gun traffickers trying to flout California's strong gun safety laws by ensuring that all 3D printers sold on the California household consumer retail market have firearm printing blocking technology installed. For these reasons, we strongly support AB 2047 and we urge the legislature to stand with us in combatting the emerging threat of 3D-printed firearms."

Arguments in Opposition

According to the *National Rifle Association Institute for Legislative Action*, "On the outset, the NRA has consistently opposed efforts to ban or restrict the use of 3D printing technology as it relates to the lawful exercise of the right to keep and bear arms. AB 2047 represents a significant expansion of such efforts, establishing an unprecedented regulatory regime that conditions the

sale and use of 3D printers on state-approved software designed to detect and block firearm-related digital files.

"As a matter of policy, this approach raises significant constitutional and practical concerns. The bill implicates the Second Amendment by placing prospective restrictions on self-manufacture of firearms. By conditioning access to commonly available tools on government-imposed technology, the bill further burdens and prohibits the ability of law-abiding individuals to exercise a constitutional right.

"AB 2047 also raises serious First Amendment concerns. By mandating the use of state-approved filtering mechanisms to monitor and restrict digital files and code, the bill extends regulation into areas of protected expression. Requiring manufacturers to embed such controls, and penalizing their circumvention, introduces a government directed role in regulating the dissemination and use of information.

"In addition, the bill's reliance on evolving detection standards, that are not required to achieve complete accuracy, creates a substantial risk of overbreadth, potentially restricting lawful and unrelated digital content. At the same time, individuals' intent on unlawful activity remain unlikely to be deterred by software-based restrictions that can be modified or circumvented.

"For those reasons, we respectfully encourage that the Committee reject Assembly Bill 2047."

FISCAL COMMENTS

According to the Assembly Appropriations Committee:

- 1) Ongoing costs (General Fund, special funds) of an unknown but potentially significant amount to the Department of Justice (DOJ) to establish and operate a new multi-component regulatory program. DOJ's responsibilities include investigating firearm blueprint files and detection algorithms; maintaining a library of blueprint files (alone or in coordination with an academic partner); publishing performance standards for detection algorithms and software controls processes; publishing manufacturer guidance; processing manufacturer self-attestations; conducting voluntary compliance verifications; maintaining a quarterly-updated public list of printer makes and models; investigating questionable attestations; promulgating regulations; and enforcing civil penalties. These functions require technical expertise in 3D printing, software engineering, and algorithm evaluation that may be outside DOJ's existing capabilities, and implementation may require specialized staff or contracted technical expertise in addition to attorneys, investigators, and administrative support. The bill's authorization for DOJ to adopt performance standards developed by a nongovernmental entity may reduce standards-development workload.
- 2) Cost pressures (Trial Court Trust Fund, General Fund) of an unknown but potentially significant amount to the courts for civil enforcement actions brought by the Attorney General, county counsel, city attorneys, and private plaintiffs under the bill's civil penalty and private right of action provisions. Actual costs will depend on the number of cases filed and the amount of court time needed to resolve each case. It generally costs approximately \$1,000 to operate a courtroom for one hour. Although courts are not funded on the basis of workload, increased pressure on the Trial Court Trust Fund may create a demand for increased funding for courts from the General Fund. The state budget provides annual

General Fund backfills to the Trial Court Trust Fund to offset revenue reductions, totaling approximately \$117.3 million in 2025-26.

The Legislative Analyst's Office recently warned of General Fund structural deficits of around \$35 billion per year beginning in the 2027-28 fiscal year.

VOTES

ASM PUBLIC SAFETY: 6-0-3

YES: Schultz, Mark González, Harabedian, Nguyen, Ramos, Sharp-Collins

ABS, ABST OR NV: Alanis, Haney, Lackey

ASM JUDICIARY: 9-3-0

YES: Kalra, Bauer-Kahan, Bryan, Connolly, Harabedian, Pacheco, Papan, Stefani, Zbur

NO: Macedo, Dixon, Sanchez

ASM APPROPRIATIONS: 11-4-0

YES: Wicks, Aguiar-Curry, Calderon, Caloza, Fong, Mark González, Krell, Pacheco, Pellerin, Sharp-Collins, Solache

NO: Hoover, Dixon, Ta, Tangipa

UPDATED

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