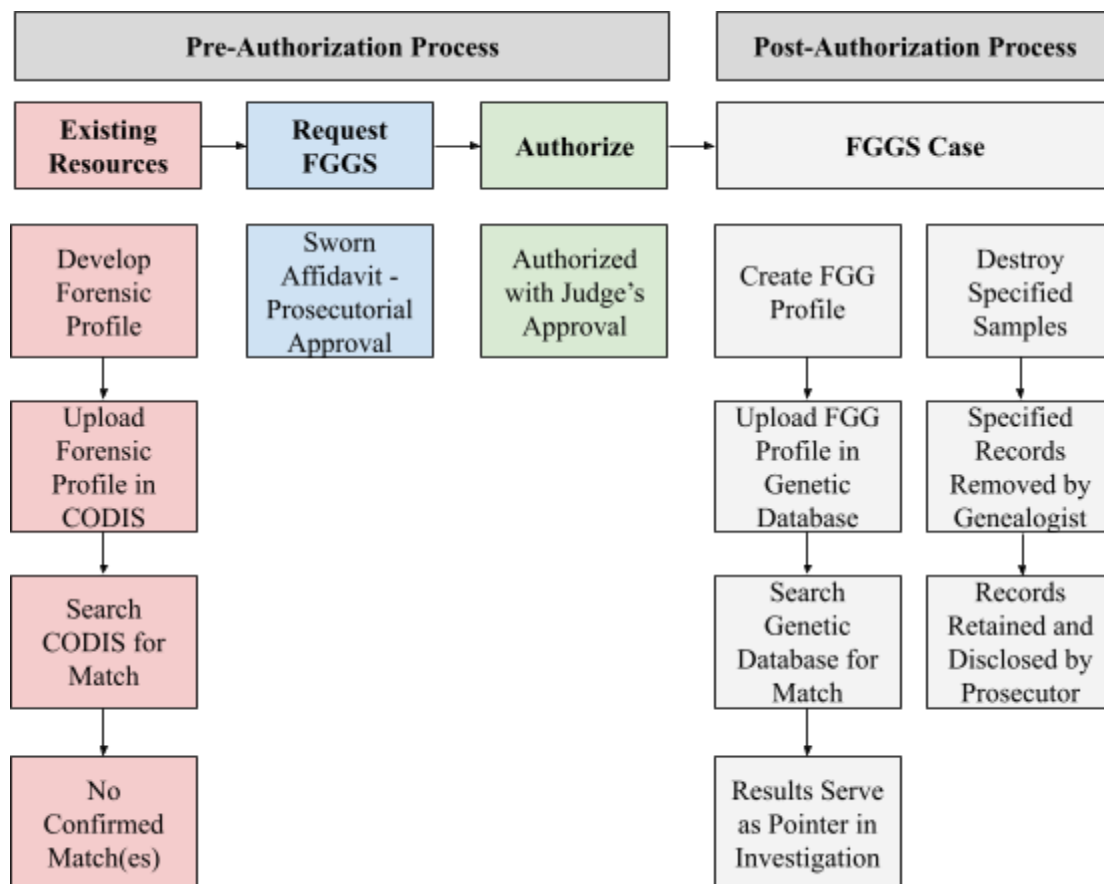


Forensic Genetic Genealogical DNA Analysis and Search: Pre- and Post-Authorization Process

In accordance with [§ 17–102 of the Criminal Procedure Article](#), Maryland law enforcement must obtain judicial authorization - to include certifying before the court that the forensic sample and the criminal case meet specified criteria - before a forensic genetic genealogical DNA analysis and search (FGGS) may be initiated. This process also requires law enforcement to submit a sworn affidavit “with prosecutorial approval, asserting specified facts regarding the crime being investigated, testing that has already been conducted on the forensic sample, and the progress of the investigation.”¹ Following judicial authorization to initiate a FGGS, genetic genealogists must use single-nucleotide polymorphisms (SNPs) from sequencing or other methods generated from a forensic or reference sample to develop an FGG profile. Once developed, the FGG profile must be uploaded to an allowable genetic database to aid in the identification of a lead in the law enforcement investigation (*as illustrated below*).



Based on the findings or lack thereof, law enforcement may also request judicial authorization to collect one or more of the following samples: covert putative perpetrator, covert third party, and/or voluntary third party. Upon judicial authorization, genetic genealogists must develop and upload a profile of the sample to an allowable genetic database for comparison against the

¹ Department of Legislative Services. (2021). *The 90 Day Report: A Review of the 2021 Legislative Session*. <https://dls.maryland.gov/pubs/prod/RecurRpt/2021rs-90-Day-Report.pdf>

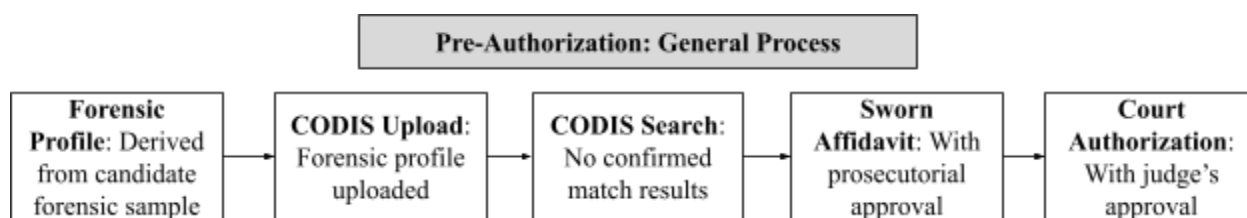
genetic profiles of other individuals to evaluate potential familial relationships between the collected sample and other service user samples.

After an FGGS investigation is complete, the genetic genealogists must turn over to the law enforcement investigator all records and materials collected for the purpose of the FGGS, and confirm the removal or deletion of records from specified websites. If the FGGS investigation does not result in a specified outcome - such as a prosecution or an acquittal, completion of a sentence and postconviction litigation associated with a conviction obtained through the use of FGGS, or completion of any criminal prosecution that may arise from the FGGS - the court must issue orders to destroy all samples and information related to the investigation. For more information on the authorization process(es) to gather specified samples for a FGGS case, please refer to the [putative perpetrator sample](#) and [third party sample](#) sections on the following pages.

Putative Perpetrator Sample: Evidence and Covert Collection

Evidence Collection Authorization Process

To ensure compliance, law enforcement must develop a forensic profile from the forensic sample, upload the forensic profile in the Federal Bureau of Investigation's Combined DNA Index System (CODIS), and conduct subsequent CODIS searches that result in a failure to produce a confirmed match (*as illustrated below*).² Once all resources have been pursued and exhausted with no confirmed match(es), law enforcement must seek prosecutorial approval within their respective jurisdiction in order to proceed with an affidavit to seek judicial authority to initiate a FGGS.



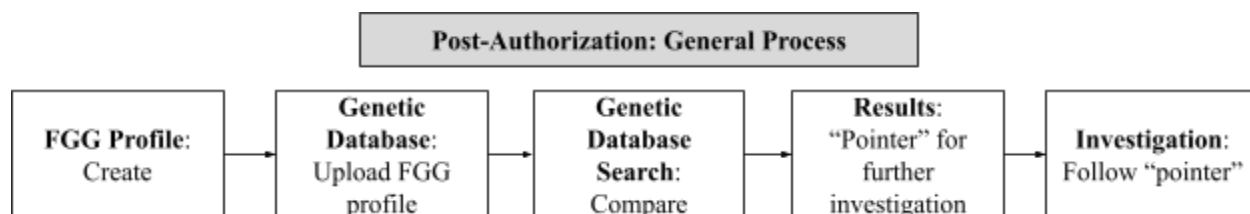
Following judicial authorization to initiate a FGGS, a FGG profile must be created and uploaded to a public genetic database where consumers have opted in and provided consent for the comparison of the uploaded digital file with their DNA.³ Because everything in [DNASolves](#), [FamilyTreeDNA](#), and [GEDmatch](#) - websites for genetic genealogy research - are based on consumer consent,⁴ the systems are widely used by law enforcement to compare DNA samples

² U.S. Department of Justice. (2019). *United States Department of Justice Interim Policy: Forensic Genetic Genealogical DNA Analysis and Searching*. <https://www.justice.gov/d9/pages/attachments/2019/09/24/finaldojinterimpolicyonfgg.pdf>

³ It is important to note that if 100,000 consumers provided consent out of a total of five million, the unknown digital file will only be compared against the 100,000 consented consumers.

⁴ DNASolves®. (2026). *How it Works*. <https://dnasolves.com/#how-it-works>; FamilyTreeDNA. *FamilyTreeDNA Law Enforcement Guide*.

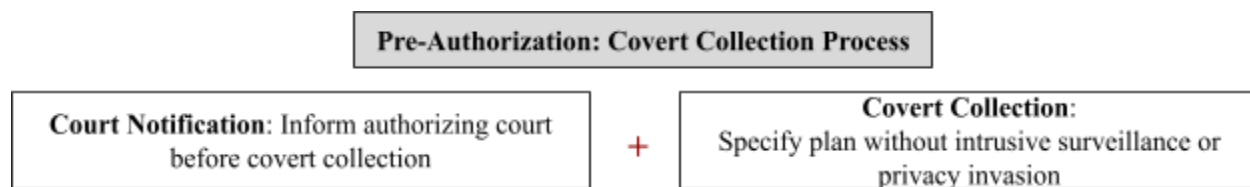
for investigative leads.⁵ Unlike CODIS, which provides a one-to-one comparison for a direct match, GEDmatch, for example, identifies investigative leads through relationships that are based on percentages of similarity between a consented consumer and a potential putative perpetrator - such as a sibling, parent, grandparent, cousin, or other family member. If a lead is identified, law enforcement may use the information to further its investigation.



After an FGGS investigation is complete, the genetic genealogists must turn over to the law enforcement investigator all records and materials collected for the purpose of the FGGS, and confirm the removal or deletion of records from specified websites. If the FGGS investigation does not result in a specified outcome - such as a prosecution or an acquittal, completion of a sentence and postconviction litigation associated with a conviction obtained through the use of FGGS, or completion of any criminal prosecution that may arise from the FGGS - the court must issue orders to destroy all samples and information related to the investigation.

Covert Collection Authorization Process

To covertly collect a DNA sample from a potential putative perpetrator,⁶ and in addition to the [evidence collection authorization process](#), law enforcement must provide notification to the authorizing court prior to the collection of the covert sample; and provide a plan to collect the sample without intrusive surveillance and invasions of privacy (*as illustrated below*).



<https://www.familytreedna.com/legal/law-enforcement-guide?srsId=AfmBOoqiIbcXRPuzEHWbruk7IH-j8dCsfEi9khthyzUVxIqC0dZGfSBi>; GEDmatch. (2024). *GEDmatch & Community Safety*.

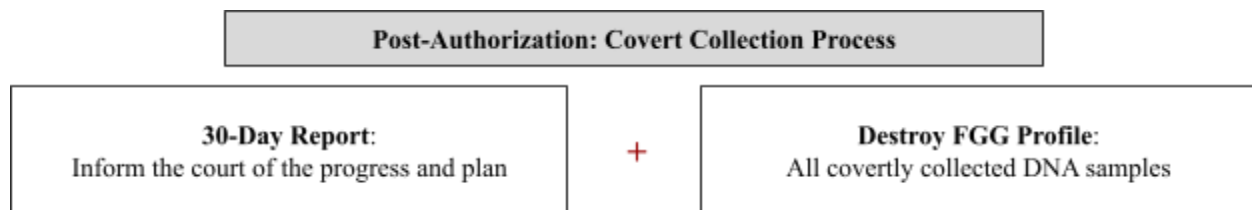
<https://www.gedmatch.com/community-safety/>; GEDmatch, a third party company, created the system in order for a family to combine their DNA samples from different databases, such as Family Tree and [Ancenstry.com](#), that do not “talk” to each other.

⁵ D’Antonio, L. (2024). Investigative Genetic Genealogy (IGG): A Guide for Prosecutors. *Criminal Law, Investigative Genetic Genealogy, Forensic Genealogy, DNA*.

<https://www.tdcaa.com/journal/investigative-genetic-genealogy-igg-a-guide-for-prosecutors/>

⁶ Section 17-101 of the Criminal Procedure Article defines putative perpetrator as one or more criminal actors reasonably believed by investigators to have committed the crime under investigation and to be the source or, or a contributor to, a forensic sample deposited during or incident to the commission of a crime.

[Section 17-102 of the Criminal Procedure Article](#) requires law enforcement to report back to the authorizing court every 30 days about the progress of the covert collection as well as a future plan that avoids unduly intrusive surveillance of individuals or invasions to their privacy; and requires all covert collection efforts to cease after six months if no good cause is shown. The law also allows law enforcement to use an STR test for any covertly collected putative perpetrator DNA sample to identify if it matches an STR DNA profile⁷ obtained from a forensic sample. If the covertly collected DNA sample does not match the STR DNA profile, law enforcement must destroy the sample and may not upload the sample to any DNA database (*as illustrated on the following page*). Please note that any data pertaining to FamilyTree in creating a case for the FGG profile is needed by the Office of the Public Defender.



Third Party Sample: Voluntary and Covert Collection

Voluntary Collection Authorization Process

To ensure compliance, law enforcement must receive written consent from any third party⁸ whose DNA sample is sought for the purpose of assisting an FGGS investigation; and must document the informed consent by video or audio recording. The third party must also be informed of the following: the investigation involves a specified crime; the third party is not a suspect in the investigation and has the right to refuse consent to the collection of a DNA sample; the law prohibits the covert collection of a DNA sample if the third party refuses to consent to the collection; the third party has been identified through a search of an allowable genetic database as a potential relative of the individual believed to have committed the specified crime; investigators are seeking the third party's DNA sample to assist in the identification of the person(s) who committed the crime; and the third party's DNA sample and any information will be kept confidential in accordance with the court order, and will be destroyed when the investigation ends.

Following judicial authorization to initiate a FGGS, genetic genealogists must develop and upload a profile of the sample to an allowable genetic database for comparison against the genetic profiles of other individuals to evaluate potential familial relationships between the third

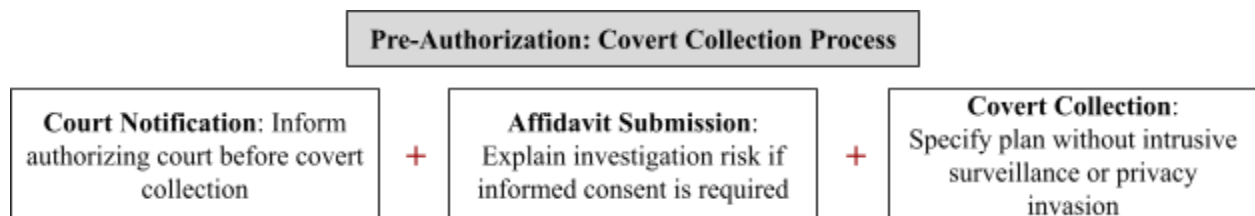
⁷ Section 17-101 of the Criminal Procedure Article defines STR DNA profile as a genetic profile that examines genetic locations on the non-sex chromosomes that are used for the statewide DNA database system or the national DNA database system.

⁸ Section 17-101 of the Criminal Procedure Article defines a third party as a person who is not a suspect in the investigation. It also defines a reference sample as a biological material from a known source.

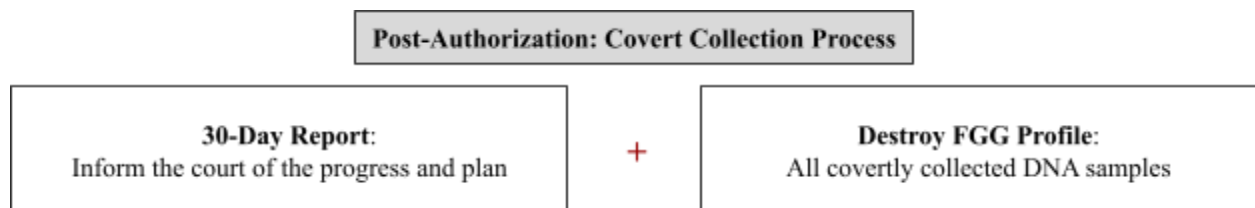
party DNA (or reference) sample and other service user samples. If a lead is identified, law enforcement may use the information to further its investigation. After the investigation is complete, all third party DNA samples and related information must be destroyed, and notification provided to the third party regarding its destruction.

Covert Collection Authorization Process

To covertly collect a DNA sample from a third party, and if informed consent will compromise the investigation and the third party has not already refused to consent the investigation, law enforcement investigators may seek authorization to obtain the covert sample. Specifically, law enforcement must provide notification to the authorizing court prior to the collection of the covert sample; submit an affidavit to the court to show how the informed consent from a third party presents specified risks to the investigation; and provide a plan to collect the sample without intrusive surveillance and invasions of privacy (*as illustrated on the following page*). A similar process also applies to post-conviction DNA testing.⁹



[Section 17-102 of the Criminal Procedure Article](#) requires law enforcement to report back to the authorizing court every 30 days about the progress of the covert collection as well as a future plan that avoids unduly intrusive surveillance of individuals or invasions to their privacy; and requires all covert collection efforts to cease after six months if no good cause is shown. After the specified time frame and/or the investigation is complete, all third party DNA samples and related information must be destroyed.



⁹ Section 17-103 of the Criminal Procedure Article allows a defendant charged with or convicted of a crime of violence under § 14-101 of the Criminal Law Article and seeking post-conviction DNA testing, to seek judicial authorization for an FGGs by filing an affidavit with an appropriate court - to include certifying before a court that the biological material is reasonably believed to have been deposited by a putative perpetrator as well as other specified reasons in the law. Based on the specified reason(s) and decision of the court, law enforcement must provide an affidavit to the court to show how the informed consent from a third party creates substantial risk that a putative perpetrator will flee, that essential evidence will be destroyed, or that imminent or irreversible harm to the investigation will occur.