



## **Streamlined DUID Forensic Toxicology Services for San Francisco**

Prepared by Office of the Chief Medical Examiner, City and County of San Francisco  
for California Highway Patrol (CHP) Toxicology Laboratory FY 2021/2022

**Submitted by Luke N. Rodda Ph.D.**

**Submitted on 04/05/2021 4:31 PM Pacific Standard Time**



## Opportunity Details

### Opportunity Information

Title

Toxicology Laboratory FY 2021/2022

Description

Toxicology Laboratory grants provide assistance to California county, and/or city crime laboratories that service local governments to improve and advance the standardization of practices in toxicology laboratories supporting and aiding in the enforcement of Driving Under the Influence (DUI)/Driving Under the Influence of Drugs (DUID) traffic laws related to alcohol and other drugs, including cannabis and cannabis products.

Awarding Agency Name

California Highway Patrol

Agency Contact Phone

916-843-4376

Agency Contact Email

CGUGrants@chp.ca.gov

Opportunity Manager

Cannabis Grants Unit (CGU)

Opportunity Posted Date

07/01/2021

Assistance Listings Number

Public Link

<https://www.gotomygrants.com/Public/Opportunities/Details/36f09515-5b52-4701-9749-5db9be26d643>

Is Published

Yes

### Funding Information

Funding Sources

State

Funding Source Description

With the passage of Proposition 64 in 2016, The Control, Regulate, and Tax Adult Use Marijuana Act (AUMU), California voters mandated the state to set aside funding for the CHP to provide grants to local governments and qualified non-profit organizations for the education, prevention, and enforcement of impaired driving laws pursuant to Section 34019 (f)(3)(B) Revenue and Taxation Code (RTC).

Funding Restrictions

State Agencies/Departments please refer to Section 34019 (f)(3)(b) RTC and California Code of Regulations, Title 13, Division 2, Chapter 12, for additional information.

### Award Information

Award Period

07/01/2021 - 06/30/2023

Award Type

Competitive



Matching Requirement

No

## Submission Information

Submission Window

04/02/2021 8:00 AM - 04/05/2021 11:30 PM

Submission Timeline Type

One-Time

Submission Timeline Additional Information

Applicants are advised not to wait until the deadline to ask submittal questions since the CHP Cannabis Grant Unit cannot guarantee immediate response and the online system will automatically close at 5:00 PM. Once an application has been submitted, no corrections or adjustments may be made.

## Question Submission Information

Question Submission Email Address

CGUGrants@chp.ca.gov

## Eligibility Information

Eligibility Type

Public

Additional Eligibility Information

California county and/or city crime laboratories conducting forensic toxicology testing related to DUI/DUID.

## Additional Information

Additional Information URL

<https://www.chp.ca.gov/programs-services/programs/cannabis-tax-fund-grant-program-overview>



## **Project Information**

### **Application Information**

Application Name

Streamlined DUID Forensic Toxicology Services for San Francisco

Award Requested

£986,248.00

Total Award Budget

£986,248.00

### **Primary Contact Information**

Name

Luke N. Rodda Ph.D.

Email Address

Luke.Rodda@sfgov.org

Address

Office of the Chief Medical Examiner, 1 Newhall Street  
San Francisco, California 94124

Phone Number

415 641-3688



## Project Description

### 1. Agency Representatives

Agency Section/Unt (subdivision) to administer Grant:

Office of the City Administrator / Office of the Chief Medical Examiner

#### Agency Representative

- **The Authorized Official is authorized to enter into an agreement with signing authority.**
- **The Authorized Financial Contact maintains financial records, documentation and recipient of warrant.**
- **The Administrative Contact is responsible for day-to-day administration.**

*Note: Information requested is for application purposes only. Security Roles (titles) differ from those within the GMS.*

Authorized Official Name (First and Last):

David Serrano Sewell

Authorized Official Title:

Chief Operating Officer

Authorized Official Address (street, city, state, zip code):

1 Newhall Street, San Francisco, CA, 94124

Address for Payment Reimbursement (street, city, state, zip code):

1 Newhall Street, San Francisco, CA, 94124

Authorized Official Phone Number:

4156413688

Authorized Official Email Address:

David.SerranoSewell@sfgov.org

Authorized Financial Contact Name (First and Last):

Kenneth Bukowski

Authorized Financial Contact Title:

Deputy City Administrator and Chief Financial Officer

Authorized Financial Contact Phone Number:

4155546172

Authorized Financial Contact Email Address:

kenneth.bukowski@sfgov.org

Administrative Contact Name (First and Last):

Luke N. Rodda Ph.D.

Administrative Contact Title:

Chief Forensic Toxicologist and Director, Forensic Laboratory Division

Administrative Contact Phone Number:

4156413611

Administrative Contact Email Address:

Luke.Rodda@sfgov.org



## 2. Senate/Assembly/Congressional/County Information

To determine the State Senate district(s) and State Assembly district(s), copy and paste the URL:  
[http://www.legislature.ca.gov/legislators\\_and\\_districts/districts/districts.html](http://www.legislature.ca.gov/legislators_and_districts/districts/districts.html) in your browser and search.

To determine the Congressional District(s), copy and paste the URL:  
<https://www.govtrack.us/congress/members/CA> in your browser and search.

To make multiple selections, hold down the Ctrl key and click each one.

Select one or more of the State Senate districts where the proposed project activities will occur.

State Senate 11

Select one or more of the California State Assembly districts where the proposed project activities will occur.

State Assembly 11, State Assembly 17, State Assembly 19

Select one or more of the California Congressional districts where the proposed project activities will occur.

California Congressional District 12, California Congressional District 14

Select one or more of the California Counties where the proposed project activities will occur.

San Francisco

Population that your laboratory/agency serves.

884363



### 3. Statistical Data

Please ensure the responses provided below are accurate and align with the statistical data provided within the application.

If a question is not applicable, please input "0" or "N/A"

Approximately how many qualified analysts are conducting Driving Under the Influence (DUI)/Driving Under the Influence of Drugs (DUID) testing at your laboratory?\*

	Estimate per month	Average per year
<b>Number of Analysts</b>	1	1

Approximately how many cases does your laboratory analyze for drugs?\*

	Estimate per month	Average per year
<b>Number of cases</b>	50	600

Approximately how many cases are tested for alcohol?\*

	Estimate per month	Average per year
<b>Number of cases</b>	50	600

Approximately how many cases are tested for both alcohol and drugs?\*

	Estimate per month	Average per year
<b>Number of cases</b>	50	600

Estimated turn around time for case analysis.\*

	DUI case	DUID case	DUI/DUID case
<b>Average number of days</b>	N/A	N/A	30

Estimated DUI case backlog?\*

	Estimate per month	Average per year
<b>Number of cases</b>	27	324

Approximately how many times each year does your laboratory provide court testimony related to DUI?\*

	DUI cases	DUID cases	DUI/DUID cases
<b>Number per year</b>			55

Does your agency track which samples have an associated DRE evaluation performed?

- Yes
- No

If yes to the above, what is the percentage?

Does your laboratory make an administrative decision to stop testing if a blood alcohol concentration (BAC) result is at or above a specific BAC?



- Yes
- No

If yes to the question above, what is that BAC concentration result concentration?

Please list the top 10 drugs present in your laboratory current DUI case work (number 1-10; 1 = most prevalent). If unknown or not tracked, please provide any known information.

1 - Alcohol; Cannabis; Methamphetamine; Cocaine, Alprazolam, Morphine; Diazepam; MDMA (ecstasy); Midazolam;  
10 - Clonazepam.

What equipment does your laboratory use (make/model)? How many of each?

2 x HS-GC-FID . Agilent Technologies Gas Chromatograph (7890B) with Agilent Technologies Headspace Sampler (7697A). Currently performing alcohol analyses.

2 x LC-MS/MS. Sciex Liquid Chromatograph (Nexera X2 LC-30) with Sciex QTRAP tandem mass spectrometer (6500+). \*Not currently performing drug testing for DUI casework, however, testing methods developed and ready to be performed with suitable automated extraction technique (i.e. developed following this grant approval).

What equipment is currently needed? Please provide details about the need and the equipment.

Hamilton Robotics

If equipment is needed, will it be able to test for Delta-9-Tetrahydrocannabinol(THC), 11-Hydroxy-THC and Carboxy-THC?

- Yes
- No

If new equipment is purchased, will training be needed for staff?

- Yes
- No

If yes to above, what training will be needed?

The Extraction Analyst will need to load samples on the new robot. Training will be performed by the manufacturer.





## 4. Project Description

Project Types: Select one or more project type applicable to your project.

- Equipment (Shall select Training and/or Staff Overtime too)
- Training
- Staff Overtime
- Personnel

### Project Description

Project description is a brief overview, a paragraph, of the proposed project.

The project is designed to develop an efficient extraction system to improve the scope of DUID testing in the City and County of San Francisco while eliminating the outsourcing to private laboratories and simultaneously mitigating the need to increase personnel to meet the anticipated increase in caseload in future years. Alcohol testing, which has historically been performed in-house, will continue as instrumentation and workflow are adequate for all Title 17 alcohol testing needs. However, to complete the DUID testing program to include comprehensive drug testing and ensure the sustainability of such a program, the translation of a recently developed LC-MS/MS method from a hands-on manual process to a hands-off automated workflow is required. First, the procurement and implementation of a Hamilton Robotics instrument allow for higher throughput of cases and reduce ongoing personnel demands by automating the entire extraction procedure. Secondly, two project staff members are required to translate the drug testing analysis on a recently developed LC-MS/MS method from a hands-on manual process to a hands-off automated workflow. This test requires just 0.150 mL of sample for all NSC-ADID Recommended DUID Tier 1 and non-NPS drugs of Tier 2 in a single run: 127 drugs and metabolites from over ten different drug classes. Drug classes (and the number of analytes) include cannabinoids (12), amphetamines (11), cocaine and metabolites (6), benzodiazepines (36), sleep-aid Z-drugs (5), opioids (27), anticonvulsants (3), first-generation antihistamines (6), muscle relaxants (2), dissociatives and hallucinogens (6), barbiturates (10), and miscellaneous (3). This method supersedes the current outsourced referenced laboratory's testing.



## 5. Problem Statement

Problem statement identifies the problem, including statistical data, to be addressed by the project.

The Forensic Laboratory Division of the San Francisco Office of the Chief Medical Examiner provides forensic toxicology services for all of City and County of San Francisco. The stakeholders of DUID toxicology testing services minimally require that 90% of toxicology reports are issued within 30 calendar days of sample submission to the laboratory. In 2018 and 2019, this was accomplished only 54% of the time (on average, 324 cases backlogged per year), see Statistical Data. On average, 43% of all cases were backlogged at any given time. The existing arrangement was not successful. Since 2014, all DUID toxicology testing has been outsourced to a reference laboratory, costing approximately \$125,000 a year in this contracted work. This was necessary when the laboratory did not have the instrumentation, equipment and ability to develop testing methods to adequately meet testing needs for driving under the influence of drugs. However, while industry guidelines expanded and increased, the testing services available to San Francisco were limited to those offered by the reference laboratory. The limited sensitivity and specificity due to the reliance on immunoassay may result in underreporting. For example, recent cocaine use may escape cocaine immunoassay testing and subsequent confirmation testing as immunoassay targets only the inactive cocaine metabolite, benzoylecgonine. Such limitations prevent the accurate and comprehensive DUID reporting and thus, subsequent prosecution. Further, to prepare samples for testing by the private laboratory, not only are samples packaged and transported across the nation, the private laboratory workflow requests 4 mL and requires a minimum sample volume of 2 mL. In situations where such volumes are unobtainable, the scope of testing is further limited. The stagnant offerings compounded by the increased handling and the low efficiency and low value of such a setup require significant improvement efforts. In 2020 after acquiring new LC-MS/MS instrumentation and streamlining efforts in other operational areas, the laboratory developed, a "A Single Method for Recommended and Additional DUID Drugs in Blood and Urine by LC-MS/MS". See the attached manuscript already submitted to forensic toxicology's premier scientific publication, the Journal of Analytical Toxicology. This state-of-the-art method meets the drafted ASB/ANSI standard and the NSC-ADID recommendations by analyzing ALL Tier 1 recommended drugs and their metabolites in a single method (rather than a suite of methodologies often deployed by laboratories to tackle the analysis of various drug classes), and uses a mere 0.150 mL of sample. Further, all non-NPS drugs and metabolites in the optional Tier 2 list are also included, for a total of 127 target drugs and metabolites. Lastly, the sensitivity of the method is superior to that employed by the reference laboratory currently used and often exceeds those required, enabling detection of drugs in samples collected with lengthier incident-to-collection times. This methodology has garnered significant interest from laboratories throughout the state and the nation and has already been shared with many in the state. The laboratory plans to continue assisting our colleagues to implement this method by providing all the various raw method files, written procedures, validation documentation, etc. As a state, we must share our knowledge to better road safety for us all. The problem that remains for this laboratory is that although this method is effective and expands the scope of testing to all recommended DUID drugs and metabolites, it is only a partial solution. There is insufficient staff to perform the DUID testing in-house with ongoing and likely unrelenting increases in forensic caseloads. However, due to current budgetary deficits facing the City and County of San Francisco, the increase in headcount is not currently not possible. As caseloads continue to increase, the increase in staffing would also need to follow, rendering a simple 'increase staffing request' unsustainable. The most significant demand on staff workhours is the time needed to extract these DUID samples. A long-term solution is required and proposed here.

### Statistical Data/Report(s)

If applicable, please upload any statistical data/reports to support your problem statement.

A Single Method for Recommended and Additional DUID Drugs in Blood and Urine by LC-MSMS



## 6. Performance Measures

Performance measures include project goals and objectives, activities with timelines and quantitative measurements.

Goals and Objectives #1: Procure and install robotic liquid handling system by October 2021. #2: Translate existing method to automated extraction technique by March 2022. #3: Perform automated technique on all DUID casework by February 2023, improving DUID testing capabilities to fully achieve NSC-ADID recommendations and eliminating outsourcing of DUID testing by private laboratories. #4: Disseminate to other laboratories and submit for publication the procedures and validation documents by April 2023. #5: 90% of DUID toxicology reports are issued within 30 calendar days of sample submission to the laboratory by April 2023. The dates listed here are based on anticipated grant activities beginning in July 2021; any changes to beginning of grant funding period would result in subsequent shift to described dates. Project Management and Project Timeline The Forensic Laboratory Division (FLD) of the Office of the Chief Medical Examiner (OCME) performs all forensic toxicological examinations for the City and County of San Francisco, including all driving under the influence of alcohol and drugs for law enforcement agencies, namely, the San Francisco Police Department and the Californian Highway Patrol. The FLD is led by a Forensic Toxicologist Supervisor who performs day-to-day management of lab operations and quality assurance program, and a Chief Forensic Toxicologist and Laboratory Director (CFT) who oversees all operations and development of new method and testing schemes. Both have the experience required to lead the project, with the CFT providing forensic toxicology expertise to the state DUID taskforce hosted by the CHP, focusing on sharing knowledge on the advancement of efficient and effective testing methods. The OCME is overseen by a Chief Operation Officer who administrators the Office, including the FLD. The OCME is further supported by the Office of the City Administrator, who oversees the entire OCME, namely providing financial regulation and expertise. Lastly, the City Attorney's Office provides a Deputy City Attorney specifically for the OCME who offers legal counsel. The Project Director is Dr. Luke N. Rodda, Chief Forensic Toxicologist and Director of the Forensic Laboratory Division at the San Francisco Office of the Chief Medical Examiner. Dr. Rodda provides forensic toxicological interpretation, expert court testimony and oversees all forensic division operations. He has been involved with the analytical method development and validation, analysis and reporting of alcohol, drugs and poisons for over 15 years, and was a Forensic Toxicologist at the Victorian Institute of Forensic Medicine. He has chaired conference sessions on DUID, chaired workshops at national and international conferences on Forensic Epidemiology - Integrating Public Health, and Application of QTOF techniques - Approaches and Workflows. Professional membership positions include President of the Young Scientist Committee for TIAFT, Oral Fluid DUID committee member and Diversity Committee member for SOFT, Novel Psychoactive Substances Committee member for TIAFT and Novel Psychoactive Substances Chair for CAT, and membership of CAC, CACLD, ASCLD, IACT, FACTA, ANZFSS, and both the American and Australian AAFS societies. As an invited Californian, he also serves on the California Opioid Task Force, Drug Impaired Driving Task Force, County Sexual Assault Response and Preventions groups, and national and regional Drug Death Expert Groups. He actively promotes harm reduction in Drug-involved Deaths, DUID and DFC (DFSA) within the community. He currently holds an Assistant Adjunct Professor position in Laboratory Medicine at University of California, San Francisco, and serves as an Adjunct Instructor of Forensic Sciences with the Center for Health Sciences at Oklahoma State University. He also supervises students from various universities around the United States. Dr. Rodda publishes and reviews manuscripts in peer-reviewed journals, and has presented at state, national and international conference proceedings. He was offered and serves as the 2020 Guest Special Editor for the Journal of Analytical Toxicology. See Dr. Rodda

CV. <https://www.dropbox.com/s/3t931jaryc81y68/Rodda%20CV.pdf?dl=0> The Project Manager is Sue Pearring, Forensic Toxicologist Supervisor of the Forensic Laboratory Division at the San Francisco Office of the Chief Medical Examiner. Ms. Pearring has previously served the Los Angeles County Department of the Medical Examiner-Coroner and the Santa Clara County Crime Laboratory as a criminalist and toxicologist. She holds a BS in Biochemistry from University of California, Los Angeles and a MS in Pharmacy, Forensic Drug Chemistry, from University of Florida. She is certified as a Diplomate in Forensic Toxicology by the American Board of Forensic Toxicologists. She has supervised several students through undergraduate and graduate projects, publishes and reviews manuscripts in peer-reviewed journals, and has presented at state and national conference proceedings. She actively participates in NIST's Organization of Scientific Area Committee, the Society of Forensic Toxicologists and serves as a technical assessor for ISO 17025 laboratory accreditation. See Ms. Pearring

CV. <https://www.dropbox.com/s/iq80409ww3utmks/Pearring%20CV.pdf?dl=0> In collaboration with and under the direction of the Project Manager and Project Director, two project staff will execute this project, one Forensic Laboratory Analyst (job code 2403) and one Forensic Toxicologist (job code 2456). The project timeline and respective roles listed here provide detailed goals and objectives for the specific project staff. Unspecified roles are to be fulfilled by the Project Manager and Project Director, or appropriate designees. Procure robotic liquid handling system (Jul – Sep 2021) Recruit two project staff: (Jul – Sep 2021) (2403 and 2456) Installation of robotic liquid handling system and training for project staff (Oct 2021) (2403) Develop automated extraction technique (Nov – Mar 2022) (2456) Perform processing, reviewing and approving batches using developed automated technique (Nov – Mar 2022) (2403 and 2456) validate according to national guidelines (Apr – Jul 2022) (2403 and 2456) Write procedures and validation documents (Aug – Sep 2022) (2403 and 2456) Evaluate measurement of uncertainty (Oct-Dec 2022) (2403) Implement reporting of results in conjunction with measurement of uncertainty (Dec 2022) (2456) Review and approve reporting of results in conjunction with measurement of uncertainty (Dec 2022) (2403) Perform automated technique on all DUID casework (Feb – Mar 2023) (2456) Process, review and approve automated technique on all DUID casework (Feb – Mar 2023) (2403 and 2456) Disseminate and submit for publication procedures and validation documents (Apr 2023)



**Streamlined DUID Forensic Toxicology Services for San Francisco**  
Office of the Chief Medical Examiner, City and County of San Francisco

(2403 and 2456) Train non-project staff (Apr 2023) (2403 and 2456) Continue to perform, eliminating backlog (Apr – Jul 2023) The performance measures for this project include quantitative measurements of backlog, turnaround times and monies spent on outsourced testing by private laboratories for DUID forensic toxicology caseload. Backlog is defined as the total cases exceeding the target 30-day turnaround time. Turnaround time is defined as the total calendar days between the case submission date and the report release date and is typically represented as a quarterly average. The laboratory also summarizes this by describing the percent of case reports released within the target 30-day timeline. Figure 1 <https://www.dropbox.com/s/qcdmipyknc0yfpo/DUID%20Tox%20Turnaround%20JPG.jpg?dl=0> displays the percent of case reports released within 30 days as a quarterly average (yellow fill), overall average (solid line) and target 90% within 30 days (dashed line) from calendar year 2018 through 2020, though 2020 data is incomplete. All measurements are summarized and calculated from the laboratory's case management system. The laboratory currently sends 99% of DUID casework to a private laboratory, costing \$125,000 annually. This cost is summarized and calculated from the department's budget and financial documents.



## 7. Proposed Solution

Proposed solution includes the desired results, the benefits of the results, project deliverables and timeframes.

The translation of the existing Single Method for Recommended and Additional DUID Drugs in Blood and Urine by LC-MS/MS to an automated technique enables the City and County of San Francisco to receive timely and comprehensive DUID toxicology testing services. The project builds on existing methodology that submits each DUID sample through the highly effective 8-minute LC-MS/MS method. This recently developed, ASB/ANSI validated method, achieves all Tier 1 and traditional non-NPS drugs from drugs and metabolites from the NSC-ADID recommendations. To accomplish this, this project seeks to procure a robotic liquid handling system and recruit two project staff to develop, validate and implement this automated technique. The automation of this extraction technique not only increases the precision of results obtained by reducing input required by manual labor and decreases the consumable cost of analysis per case by increasing batch efficiency, the need to increase the most significant recurring budget line item in forensic analyses, required personnel, to keep up with increasing caseload is eliminated. The required hands-on staff time decreases by a factor of eight: from six hours per sixty (60) cases (0.1 hours per case) to one hour per eighty (80) cases (0.0125 hours per case). This enables laboratories and laboratory staff to focus on the operational needs of a forensic facility that only humans can perform, additional method development and validation and providing expert testimony in courtroom proceedings. The robustness of an automated extraction technique improves consistency of services provided and the quality of results and is resilient against fluctuations in headcount and staffing resources. While the impact of caseload increases and increases in DUID casework complexity demand more staffing resources, the increase in analytical work can be absorbed by this innovative approach, future-proofing the DUID testing in San Francisco for years to come. By executing this proposed solution, the laboratory is able to eliminate outsourcing of DUID testing by private laboratories, conserving resources both in the workflow human resource savings as well as in fiscal outsourcing costs. The evaluation of measurement of uncertainty prepares the automated technique to be ready for criminal court proceedings. The completion of this one-stop DUID testing package is then ready for subsequent implementation in other laboratories throughout the state and beyond. Simultaneously, the adoption and execution of this technique by the Forensic Laboratory Division of the San Francisco Office of the Chief Medical Examiner enables 90% or more of DUID toxicology reports to be issued within 30 calendar days of sample submission by February 2023 and provides a workflow to eliminate DUID backlog that is also resistant to unpredictable budgetary climates and increasing DUID caseload and complexity.



## 8. Method of Evaluation

### Method of Evaluation

Method of evaluation describes the evaluation strategy that will be used to show project effectiveness.

The translation of the existing Single Method for Recommended and Additional DUID Drugs in Blood and Urine by LC-MS/MS to an automated technique enables the City and County of San Francisco to receive timely and comprehensive DUID toxicology testing services. The project builds on existing methodology that submits each DUID sample through the highly effective 8-minute LC-MS/MS method. This recently developed, ASB/ANSI validated method, achieves all Tier 1 and traditional non-NPS drugs from drugs and metabolites from the NSC-ADID recommendations. To accomplish this, this project seeks to procure a robotic liquid handling system and recruit two project staff to develop, validate and implement this automated technique. The automation of this extraction technique not only increases the precision of results obtained by reducing input required by manual labor and decreases the consumable cost of analysis per case by increasing batch efficiency, the need to increase the most significant recurring budget line item in forensic analyses, required personnel, to keep up with increasing caseload is eliminated. The required hands-on staff time decreases by a factor of eight: from six hours per sixty (60) cases (0.1 hours per case) to one hour per eighty (80) cases (0.0125 hours per case). This enables laboratories and laboratory staff to focus on the operational needs of a forensic facility that only humans can perform, additional method development and validation and providing expert testimony in courtroom proceedings. The robustness of an automated extraction technique improves consistency of services provided and the quality of results and is resilient against fluctuations in headcount and staffing resources. While the impact of caseload increases and increases in DUID casework complexity demand more staffing resources, the increase in analytical work can be absorbed by this innovative approach, future-proofing the DUID testing in San Francisco for years to come. By executing this proposed solution, the laboratory is able to eliminate outsourcing of DUID testing by private laboratories, conserving resources both in the workflow human resource savings as well as in fiscal outsourcing costs. The evaluation of measurement of uncertainty prepares the automated technique to be ready for criminal court proceedings. The completion of this one-stop DUID testing package is then ready for subsequent implementation in other laboratories throughout the state and beyond. Simultaneously, the adoption and execution of this technique by the Forensic Laboratory Division of the San Francisco Office of the Chief Medical Examiner enables 90% or more of DUID toxicology reports to be issued within 30 calendar days of sample submission by February 2023 and provides a workflow to eliminate DUID backlog that is also resistant to unpredictable budgetary climates and increasing DUID caseload and complexity.



## **9. Program Sustainability**

Program sustainability describes the plan for reducing reliance on state funding in the future and includes efforts that will be continued if funds are either not available or significantly reduced.

With the automated extraction technique implemented by the two project staff over the two-year grant cycle, one non-project (i.e. existing) Forensic Laboratory Division staff member will be able to maintain the ongoing caseload. The efficient ability of the new extraction technique would result in a single analyst being able to analyze the whole City's DUID caseload - making it one of the most effective DUID testing laboratories in the state. At the end of the project, the program will be rolled out to existing staff in order for contingency during natural staff turnover. From July 2023 and onwards, existing staff will be able to maintain this new extraction technique and DUID testing. The OCME already maintains a comprehensive laboratory with adequate resources in instrument, equipment, consumables, IT, quality assurance, accreditation, and testimony/interpretational skills to support ongoing and routine testing of DUID testing house following the introduction of the automated extraction technique.





## 10. Administrative Support

Administrative support includes the organization's experience, personnel and physical resources needed for successful implementation of this project.

The Forensic Laboratory Division (FLD) of the Office of the Chief Medical Examiner (OCME) is required to perform all forensic toxicological examinations for the City and Country of San Francisco, including all driving under the influence of alcohol and drugs for law enforcement agencies, namely, the San Francisco Police Department and the Californian Highway Patrol. As previously mentioned, physical resources includes a comprehensive laboratory with adequate resources in instrument, equipment, consumables and IT. Personnel resources to execute the project include those with expertise in research, quality assurance, accreditation, and testimony/interpretational skills, routine testing of DUI, legal counsel, human resources, accounting, and management; specifically: The FLD is budgeted for 2 x 2403 Forensic Laboratory Analysts and 5 x Forensic Toxicologists who are employed to maintain current workloads. However, should it be advantageous to the project to substitute a current employee in the place of a Project staff member in certain scenarios or events, that will be an option available. The FLD is led by a Forensic Toxicologist Supervisor who performs day-to-day management of laboratory operations and quality assurance program; and a Chief Forensic Toxicologist and Forensic Laboratory Director (CFT) who oversees all operations and development of new method and testing schemes. Both have the experience required to lead the project, and have experience developing and validating over a dozen new toxicology techniques. The CFT provides forensic toxicology expertise to the state DUI taskforce hosted by the CHP, focusing on sharing knowledge on the advancement of efficient and effective testing methods. Dr. Rodda's profile <https://pathology.ucsf.edu/about/faculty/luke-n-rodde-phd> The FLD employs a clerk that assists in administrative case handling, including fees, communications, report typing and dissemination. The OCME is overseen by a Chief Operation Officer who supports the Office, including the FLD. The OCME is further supported by the Office of the City Administrator, who oversees the entire OCME, namely providing financial regulation and expertise. The City Attorney's Office provides a Deputy City Attorney specifically for the OCME who offers legal counsel.





## 11. Other Grant Programs

### Impaired Driving Enforcement Funding

Has grant funding been received in the past for impaired driving enforcement?

- Yes  
 No

If yes, what was the outcome?

### Application to other Grant Programs

Has or will a proposal be submitted to another grant program for this project (i.e., that would fund the same project components applied for in this project, or for related project components to be completed during the same time period as those described in this project).

- Yes  
 No

If yes, identify granting agency or organization(s), grant program name(s), proposal title, date submitted (or to be submitted), and relationship between proposals. Please also clearly distinguish in which tasks would be funded by CHP, and which would be funded by other organizations



## 12. Terms and Conditions

**By submitting your application, you agree to the following terms and conditions:**

I certify under penalty of perjury that the information I have entered on this application is true and complete to the best of my knowledge. I further understand that any false, incomplete, or incorrect statements may result in my disqualification from the grant process or dismissal from receiving grants funded from the California Highway Patrol (CHP) Cannabis Tax Fund Grant Program. I authorize the California Highway Patrol to investigate referenced documents or other documents submitted to the program to check the accuracy of the information provided.

I agree with the Request for Application, the above terms and conditions, and the California Code of Regulations, Title 13, Division 2, Chapter 13, Sections 1890.00 through 1890.27.

I Agree

When using AMPLIFUND, I authorize the state to take my requested action by an electronic means and authorize the state to accept the combination of my USER ID and password in lieu of my written signature.

I Agree.

My password is unique to me and is to remain confidential. I will not allow other individuals to use my USER ID and password to access AMPLIFUND.

I Agree.

It is my responsibility to maintain the confidentiality of AMPLIFUND information.

I Agree.

Once I submit the application, I am unable to add, edit, or delete any application information.

I Agree

Confidentiality Notice: All documents submitted as a part of the Cannabis Tax Fund Grant Program proposal are public documents and may be subject to a request pursuant to the California Public Records Act. The CHP cannot ensure the confidentiality of any information submitted in or with this proposal. (Gov. Code, § 6250 et seq.)

I Agree

### Vendor I.D

I have provided a STD. 204 form which is required for payments to all entities.

I Agree

STD. 204 form

STD 204\_CCSF Signed

### City Council or County Board of Supervisors Resolution

A City Council or County Board of Supervisors Resolution will be submitted to the CHP prior to the execution of the Grant Agreement.

I Agree

A county, city, district, or other public body shall provide a copy of a resolution, order, motion, and ordinance of local governing body, which by law has the authority to enter into an agreement authorizing execution of a grant agreement. If applicant does not have a signed resolution at final application submission time, applicant may submit signed resolution via email prior to execution of the grant agreement. The resolution must explicitly state the agency has delegated authority to enter into an agreement for the requested amount.



## Budget

### Proposed Budget Summary

#### Expense Budget

	Grant Funded	Total Budgeted
<b>Personnel</b>		
2403 Forensic Laboratory Analyst	£199,680.00	£199,680.00
2403 Forensic Laboratory Analyst (Benefits)	£87,859.20	£87,859.20
2456 Forensic Toxicologist	£266,240.00	£266,240.00
2456 Forensic Toxicologist (Benefits)	£117,411.00	£117,411.00
<b>Subtotal</b>	<b>£671,190.20</b>	<b>£671,190.20</b>
<b>Equipment</b>		
Hamilton Robotics - Microlab VANTAGE 1.3	£315,057.80	£315,057.80
<b>Subtotal</b>	<b>£315,057.80</b>	<b>£315,057.80</b>
<b>Total Proposed Cost</b>	<b>£986,248.00</b>	<b>£986,248.00</b>

#### Revenue Budget

	Grant Funded	Total Budgeted
<b>Grant Funding</b>		
Award Requested	£986,248.00	£986,248.00
<b>Subtotal</b>	<b>£986,248.00</b>	<b>£986,248.00</b>
<b>Total Proposed Revenue</b>	<b>£986,248.00</b>	<b>£986,248.00</b>

### Proposed Budget Detail

See attached spreadsheet.

### Proposed Budget Narrative

#### Personnel

Personnel costs include direct compensation for salaries and fringe benefits for grant funded positions. Please itemize employees' salaries, overtime, and benefits. Narrative shall include: classification, monthly or hourly rate, percent applicable to the project and project related duties.

#### 2456 Forensic Toxicologist (Benefits)

44 % on top of 2456 regular pay for two years



### **2403 Forensic Laboratory Analyst (Benefits)**

44 % on top of 2406 Forensic Lab Analyst regular pay for two years

### **2456 Forensic Toxicologist**

The 2456 Forensic Toxicologist (FT) will perform the processing, review and approving of the automated LC-MS/MS drug testing. Together with the 2403 Forensic Laboratory Analyst, the FT will develop the automated Hamilton robot extraction technique. Detailed costings are: Job Class 2456 Hourly: \$64.00 Hours Per Year: 2080 (full-time) Years: 2 Total (excluding benefits): \$266,240 Benefits: 44% (see other line item)

### **2403 Forensic Laboratory Analyst**

The 2403 Forensic Laboratory Analyst (FLA) will receive and perform the extraction of blood samples ready for LC-MS/MS analysis. Further, together with the 2456 Forensic Toxicologist, the FLA will assist in development of the automated Hamilton robot extraction technique. Detailed costings are: Job Class 2403 Hourly: \$64.00 Hours Per Year: 2080 (full-time) Years: 2 Total (excluding benefits): \$199,680 Plus Benefits: 44% (see other line item)

## **Equipment**

Equipment are non-expendable, tangible, personal property having a normal useful life of more than one year and an acquisition cost of at least \$5,000. For each line item, narrative shall include: description, how it will be used for the project, how it will enhance/support the project, quantity, unit cost and total cost for each equipment purchase. Note: equipment costs include all accessories. Please only include the portion of the cost that will be used for project activities.

### **Hamilton Robotics - Microlab VANTAGE 1.3**

The Hamilton Robot equipment will significantly reduce personnel resources by automating the extraction of DUI blood samples. The VANTAGE is configured with 8 Independent Pipetting Channels, CORE 96 Head, IPG Plate Gripper, and IDL Barcode Reader. Integrations include a BioNex HiG Centrifuge and Agilent PlateLoc Plate Sealer. Accessories include a Hamilton Heater Shaker, MPE2 Positive Pressure and Evaporative Module, and positions for tips, tubes, reagents, and plates. \* SEE EMAILED ATTACHEMENT FOR AN ITEMISED LIST \*(minus the centrifuge on Page 6, item 27. we removed this to save costs as it was not inexpensive and we can find a cheaper solution offline)