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Governor

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Lt. Governor



PHYLLIS SHIMABUKURO-GEISER
Chairperson, Board of Agriculture

DEPT. COMM. NO. 268
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December 27, 2022

The Honorable Ronald D. Kouchi,
President and Members of the Senate
Thirty-Second State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of
Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Annual Report on the Biosecurity Program as required by Act 236, SLH 2008. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at <https://hdoa.hawaii.gov/meetings-reports/legislative-reports/>.

Sincerely,

Phyllis Shimabukuro-Geiser
Chairperson, Hawaii Board of Agriculture

Enclosures



**REPORT TO THE THIRTY-SECOND LEGISLATURE
2023 REGULAR SESSION
STATE OF HAWAII**

**ANNUAL REPORT ON THE BIOSECURITY PROGRAM
IN RESPONSE TO ACT 236, SLH 2008**



Prepared by:

**THE STATE OF HAWAII
DEPARTMENT OF AGRICULTURE**

DECEMBER 2022

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SECTION I

Background

A. Act 236, 2008 Session Laws of Hawaii

Act 236 of the 2008 Session Laws of Hawaii recognized that the unchecked spread of invasive species is a threat to Hawaii's unique natural resources, agricultural economy, and the health and lifestyle of Hawaii's people. Act 236 created a Biosecurity Program within the Department of Agriculture to support the Department's efforts in combatting invasive species. In particular, Act 236 recognized that the Department was undertaking several activities to fight invasive species by:

1. Administering pre-entry measures to minimize the risk of invasive pests entering the State;
2. Conducting port-of-entry inspections to detect and quarantine or destroy pests upon arrival; and
3. Administering post-entry measures to mitigate the establishment of pests in the State.

Additionally, Act 236 acknowledged the Department's efforts to reduce the State's dependency on imported agricultural products by increasing the capacity of Hawaii's agricultural industry that would in turn reduce the risk of accidentally introducing invasive pests on agricultural commodities. The Biosecurity Program was created to support the Department's ongoing efforts to combat invasive pests. The Legislature also established the Pest Inspection, Quarantine, and Eradication (PIQE) fund to finance part of these activities.

B. Role of the Hawaii Department of Agriculture

Efforts to prevent the introduction of new invasive species, to eradicate, if feasible, invasive species incursions, and control and mitigate already established invasive species, are covered by multiple divisions and branches within the Department of Agriculture. There are also multiple funding sources used to fund these activities including general funds, PIQE, and federal funds.

The Plant Industry Division is composed of the Plant Quarantine Branch (PQB), Plant Pest Control Branch (PPC), and the Pesticide Branch. All three branches play a role in biosecurity with the Hawaii Department of Agriculture (HDOA) and work closely together to accomplish the objectives. PQB is largely tasked with the inspections and permitting of agricultural commodities (live plants; non-propagative plant parts such as fresh produce, cut flowers, animal feed; non-domestic animals; microorganisms; and soil) at ports of entry to prevent the

introduction and interisland spread of new or existing invasive species. This branch works closely with its federal partners (the Department of Homeland Security, Custom Border Protection (CBP), the United States Department of Agriculture, Animal and Plant Inspection Service (USDA-APHIS) Plant Protection and Quarantine (PPQ) to ensure invasive species will not be imported through Hawaii's ports of entry. PPC's focus is primarily on the detection, response, eradication, containment, and control of pests that have managed to bypass inspections at the ports of entry and to establish base-line surveys around the ports of entry. It is staff from this branch that are in the field actively working with farmers, homeowners, and businesses to help treat, prevent, and where possible, eradicate invasive species threats when they are discovered. The Pesticides Branch ensures that pesticide technologies are available for these efforts and are being safely and adequately used. Specific activities of the Plant Industry Division relating to biosecurity are as follows:

Prevention – activities to prevent the introduction of invasive species

- Inspection at ports-of-entry of agricultural commodities entering the State and moving inter-island.
- Issuance of permits for the importation and possession of restricted commodities such as restricted plants, non-domestic animals, and microorganisms.
- Origin certification programs for high-risk commodities (compliance agreements between state of origin, commodity handlers/shippers, and destination state) designed to minimize or eliminate pest risk levels.

Diagnostics – ability to correctly identify agricultural pests and invasive species: Insects, Slugs, Snails, Plant Pathogens, Non-domestic Animals, Microorganisms, and Noxious Weed identification.

Early Detection – proactive surveillance to early detect presence and location of invasive species that may be introduced. Most monitoring activities are subcontracted to CTAHR of UH with federal or state funds.

Rapid Response – Immediate survey, **delimiting extension of spread, rapid implementation of control, and eradication** measures to detect, capture, or eliminate a single threat or incipient population of invasive species before it can become established.

Monitoring – ongoing surveys to track the presence or absence and status of introduced invasive species over time and to evaluate effectiveness of prevention, control and restoration activities. Most survey activities are subcontracted to CTAHR of UH with federal or state funds at high-risk areas, including within the airport and harbor environs, surrounding the ports-of-entry, agricultural lands, and selected protected areas within the State.

Research and Development – the development of scientific knowledge, methods, and technologies to prevent, detect, control and/or monitor invasive species and assist in implementing technologies to mitigate impacts of invasive species on agricultural production and natural resources.

Education Outreach – actions taken to increase public awareness on importance of invasive species control.

Partnerships and Cooperative Activities – cooperative efforts with stakeholders (agricultural industries); federal, state, county, and private partners; including domestic and international partnerships and agreements.

Information Management – activities to facilitate access to and exchange of information concerning invasive species. Includes storage and sharing of data and databases.

Quality Control Programs – activities to measure levels of effectiveness, including on-going risk assessments to determine pest-risk pathways, evaluation of mitigation activities, and re-prioritization of inspection activities for invasive species.

Quarantine Treatment Facilities – “shared” government certified treatment facility(ies) approved to conduct disinfestation treatments to recondition and/or destroy shipments infested with quarantine pests, or to subject shipments to treatments that will exterminate the quarantine pest.

Permitting – issuing permits based on statutes, administrative rules, and prior Board of Agriculture decisions to ensure the introduction of regulated commodities can be appropriately imported into the State and not introduce invasive species or become one itself in accordance with pest risk analysis.

Compliance and Enforcement – strengthening the enforcement components to compel compliance with quarantine laws and regulations.

Export Programs – providing services to facilitate the export of agricultural goods to domestic and foreign markets.

The Animal Industry Division approaches biosecurity as a process for management of animal diseases and pests that pose a significant risk to animal and public health and livestock, poultry and aquaculture industries. This is accomplished through a spectrum of activities that mitigates introduction and establishment of invasive animal diseases, support continuity of business, and protect human health. High impact animal diseases affect both local industries as well as global trade. The Rabies Control Branch and the Animal Disease Control branch share the same objective of minimizing the impact of animal disease occurrence however focus on different

species. Pre-arrival requirements provide assurances that newly imported animals have been properly identified, complied with disease testing and have undergone pre-transport examination. Upon arrival, inspection occurs to verify animal identification, examine for clinical signs of illness and the presence of foreign parasites. In addition to monitoring newly importing animals, Animal Division staff performs routine surveillance of existing populations to detect emerging or re-emerging animal diseases that are subject to control or eradication. To determine the level of impact when irregularities are detected, the Veterinary Laboratory provides diagnostic support. Upon confirmation of the presence of invasive animal disease or parasites, response methods are initiated to contain disease spread, work towards eradication and minimize the impact on existing industries, human health and global trade. The Division also oversees and certifies aquaculture farm disease free status and export of brood shrimp internationally.

SECTION II

Description of Projects and Activities Funded by the Pest Inspection, Quarantine, and Eradication Fund

Plant Quarantine Branch Database and e-Manifesting.

The Plant Quarantine Branch (PQB) maintained a database called INVICTA to record import inspection, permitting, and pest hotline reporting activities. However, the INVICTA database was outdated and limiting, among other things, the ability to retrieve information needed for comprehensive risk analysis. The database was being maintained and updated as much as possible with PIQE funds until PQB rolled out a more comprehensive and modern database. A request for proposals (RFP) was completed and HDOA selected Pacific Point, Inc. to develop PQSYSTEM17. HDOA implemented the contract in March 2018. Software licenses critical to the operation of PQSYSTEM17 were renewed in FY2020 for \$180,345.46 and in FY2021 for \$180,345.46.

Previous risk assessments conducted at ports of entry statewide, have determined that different commodities pose different risk levels for the introduction of pests. INVICTA has been instrumental in the implementation of these risk assessments but does not have the capacity to efficiently determine commodity and pest risk and allow for efficient electronic-manifesting (E-Manifest). The new PQSYSTEM17 database, subsequently named Kupono, has incorporated a standardized E-Manifest module that allows shippers and importers to electronically submit a detailed shipping manifest to HDOA before (for sea containers typically 5 days prior and for air shipments typically 6-8 hours prior) the commodities arrive in the State. This will allow PQB to efficiently utilize limited staffing availability by scheduling inspections based on the risk level of

the arriving commodities. PQB has developed training modules and continues working with importers to transition them into Kupono.

Kupono incorporates the E-Manifest system, which allows for submitter generated information within a data set created and maintained by PQB. The system includes a color-coding system to indicate risk to allow staff to efficiently process submitted information in a uniform matter. PQB has also created and customized a Kupono user manual to standardize all aspects of data entry. PQB has also tasked 2 staff on an almost full-time basis to train and assist staff statewide in the efficient use of the database. The Department has also hired an IT specialist who is tasked with making further refinements and management of Kupono, including training of new E-manifest users and internal staff. Currently, all staff statewide have had training in Kupono. Additionally, over 90% of previous E-Manifest users have successfully converted to Kupono with the remainder transitioning. The previous database, INVICTA, was retired on October 15, 2021. All PQB-related database activities involving import inspection, E-Manifesting and permit issuance are now being handled within Kupono. The Carahsoft development/maintenance contract for 2021 was for \$99,461.74, and the FY2022 was \$30,500 ending June 30, 2023. The FY2022 service contract has been reduced due to the fact that PQ was able to hire an IT specialist specifically working on Kupono.

Nursery Certification and Compliance Project.

PQB continues to maintain a compliance project with selected nurseries who ship nursery stock in soil for Rapid Ohia Death (ROD). It includes best management practices as well as periodic testing of soil in the nursery for the fungus that causes ROD.

PQB continues to maintain compliance with the QC650 Master Permit with the California Department of Food and Agriculture. The permit was renewed on September 15, 2022. The permit enables compliant nurseries to self-certify shipments of clean nursery stock to the U.S. Mainland. Statewide, there are currently 120 nurseries certified under this program.

Christmas Tree Inspection Project.

PQB continues to work collaboratively with Oregon Department of Agriculture (ODA) and the Washington State Department of Agriculture (WSDA) to maintain implementation of best management practices (BMPs) and inspection protocols with Oregon Christmas tree shippers to ensure that the shipments are free of pests through a compliance agreement. The BMPs continue to be successful in mitigating the presence of unwanted pests in the Christmas tree shipments. See Figure 1 for inspection totals.

Figure 1. Inspection totals

Calendar Year	Total	Non-compliant	Passed	Compliance %
2017	197	7	190	96%
2018	178	2	176	99%
2019	168	4	164	98%
2020	154	12	142	92%
2021	148	3	145	98%

Plant Pathogens.

PPC staff rendered 33 identifications for suspected plant pathogens in calendar year 2021. 30 identifications for suspected plant pathogens from Plant Quarantine activities from January 1, 2022 to the time of this writing.

Following reports by University of Hawaii extension agents on the island of Maui, PPC staff collected three diseases on oleander. Samples were sent to United States Department of Agriculture- Animal Plant Health Inspection Service- Plant Protection and Quarantine- National Identification Services (NIS). NIS identified one of the three specimens as oleander knot, a pest known to infect oleander and based upon laboratory studies, can have impacts on commercial olives. Infestations have only been found along Pukalani Highway. Broader surveys on Maui and in olive growing areas have not identified broader infestations of this disease. It is unknown how oleander knot was introduced into Hawaii as it likely would have arrived through infected plant material or infected tools.

Staff of the Plant Pest Control Branch also detected a fungal disease on *Parthenium hysterophorus*, a noxious weed. The disease was sent to the National Mycology Laboratory and identified as the fungal disease known as the winter rust. Winter rust has been released successfully in other parts of the world as a biological control agent for *Parthenium*. Due to staffing shortages the department has not been able to evaluate the winter rust for potential distribution in Hawaii to control *Parthenium* infestations within the state.

PPC staff coordinated with University of Hawaii (UH) staff to conduct surveys for the Orchid fleck virus on citrus plants at the UH research station in East Hawaii. The virus is vectored by a flat mite and is not known to occur elsewhere in the US. Citrus trees that were infected with the virus were treated with a miticide and cut down.

Insect Pests.

PPC engaged in statewide field surveys at nurseries, farms, and residences to delineate the banana lacewing bug, *Stephanitis typica*, a new US record. The banana lacewing bug was found

to be on Oahu only. Statewide surveys were conducted for the avocado lace bug, *Pseudacysta perseae*, a new State record. The avocado lace bug was found only on Oahu and Hawaii Island. Chemical/Mechanical Control staff conducted a limited pesticides trial to combat the avocado lace bug that was causing trees to drop their leaves and fruit. Branch staff consulted with University of Hawaii Cooperative Extension staff for control measures and on outreach to impacted growers.

New pests detected included *Ctenarytaina spatulata* and *Ctenarytaina longicauda*, both pests of the exotic trees *Eucalyptus robusta* and *Lophostemon confertus* (Brisbane box or vinegartree), respectively. Another pest recently detected and confirmed is *Tetraleurodes acacia*, a white fly found in Waikīkī, O'ahu, attacking urban and landscape trees, such as *Cassia* (shower tree) and *Bauhinia* (orchid trees) and native trees, including *Erythina sandwicensis* (wiliwili) and *Acacia koa* (koa). Another pest found in Oahu, *Thaumastocoris peregrinus*, is a serious sap-sucking insect pest infesting non-native eucalyptus plantations in Southern Africa, South America, and Europe. New pest alerts have been issued.

Apiary.

The Apiary Program continued to conduct quarterly inspections of honeybee queen breeders. Hawaii is the epicenter of honeybee queen production in the US, supplying an estimated 60% of honeybee queens to Canada and 40% to the continental United States. There are 11 registered queen producers in the state, 10 located on Hawaii Island and one located on Oahu. A total of 39 inspections have been conducted in 2022. Thirty-one of the inspections were for certifications allowing shipment of queens to other US states; the remaining 8 were for inspections to also approve shipments to Canada. Only one of the 280 hives inspected was found to be infested with a regulated pest, European foulbrood. Four inspections found varroa mite loads in excess of 1% of bees (the accepted rate for international shipment of queens is a mite load less than 1%).

Statewide biosecurity surveillance for incoming honeybee pests of significance (Africanized honeybees or AHB, *Varroa* mite, *Nosema*, *Tropilaelaps* mite, American and European foulbrood, and Asian and greater banded hornet) is an ongoing activity of our Apiary Program.

Statewide biosecurity surveillance for Africanized honeybees (AHB), AHB DNA diagnostic, surveillance, inspections for honeybee pests is ongoing. *Varroa*, *Nosema*, *Tropilaelaps* mites, American and European Foulbrood.

Funding of Personnel.

Prior to the COVID-19 pandemic, the PIQE was a significant source of funding (\$3.5 million) for PQB staff positions and used to support approximately half (42 of 90) of the PQB

positions. These positions were originally general funded but were lost during the RIF in 2009. Due to the negative economic impact of the COVID-19 pandemic contributing to reduced tax revenues to the State, all PQB positions were converted and funded by the PQIE special fund. The staff in these positions conduct the day-to-day inspection, permitting, certification, pest response activities, and special projects funded by PIQE which meet the mandates of ACT 236, SLH 2008. Additionally, all staff from the Plant Pest Control Branch and the Plant Industry Division Administrative positions were also funded by the PQIE special fund. These positions also play an integral part in enacting the State's Biosecurity program. In the 2022 legislative session, the legislature reversed personnel funding back to general funds.

Funded Projects.

Hawaii Ant Lab Core Funding. This statewide initiative focuses on the development and use of novel and proven technologies to prevent, detect, respond, and control little fire ant. Increased spread of the little fire ant due to tough terrain, non-cooperative land owners, and unique natural environments have allowed the little fire ant to spread to various locations throughout the State. To affect change, the Hawaii Ant Lab needs resources to address this invasive pest. The Hawaii Ant Lab at the University of Hawaii received \$378,835 in FY2020 to carry out this work and \$340,866 in FY2021. The funding was not renewed and ends December 2022.

Early Detection and Prevention of Little Fire Ant on Oahu. This project funds a trained research, survey and response team to provide monitoring of high-risk sites such as nurseries and landscape suppliers and to participate in response activities should little fire ant be found on the island. The Hawaii Ant Lab at the University of Hawaii received \$189,111 in FY2020 to carry out this work and \$170,938 in FY 2021. Funding will end in December 2022.

Diamondback Moth Management. In Hawaii, the total farm gate value of the crucifer industry is approximately \$4.55 million. The industry primarily consists of head cabbage, Chinese cabbage, mustard cabbage and kale. The most serious problem facing the crucifer industry in Hawaii is the control of an insect pest called the diamondback moth (DBM), *Plutella xylostella*. In collaboration with University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR), a \$49,500 FY2019 contract funds field monitoring and workshops to provide crucifer growers a resistance management program and develop other sustainable management strategies for the control of diamondback moth and other lepidopteran pests on crucifers. The contract was extended to end in June of 2022.

Two-Lined Spittlebug. The two-lined spittlebug (TLSB), *Prosapia bicincta*, has caused severe impacts to key pasture grasses. In response to the recent invasion and the severe impact of the two-lined spittlebug to the Big Island of Hawaii, immediate actions to restrict its further spread

and to prohibit establishment on the other non-infested Hawaiian Islands is necessary. The University of Hawaii received \$333,086 in FY2020 to address rancher education, surveillance, biology and ecology research, integrated pest management, and biological control. Additional funding of \$340,903 was awarded and the project was completed in June FY2022.

Coffee Berry Borer and Coffee Leaf Rust Subsidy. The coffee berry borer (CBB), *Hypothenemus hampei*, has caused severe impacts to coffee growers since its discovery in Hawaii in 2010. A subsidy program was begun in 2015 that reimburses coffee growers up to 50% of the costs of purchasing an organic microbial pesticide to help reduce CBB damage. The County of Hawaii received \$260,000 in FY2019 to fund this ongoing program. Funding for this program was extended to include the newly detected coffee leaf rust, *Hemileia vastatrix*, and was supplemented by general funds from the Chairperson's account to expire in June 30, 2023.

HIAGPESTCOM 22. Approximately 85% -90% of the food consumed in Hawaii is imported from elsewhere. This overreliance on imports increases the risk associated with the unwanted importation of non-native invasive species and can cause food shortages if the supply chain is disrupted, as happened to some commodities during the recent COVID-19 pandemic. This project uses traditional communication techniques and social media to build awareness of invasive species and encourages innovation within the agriculture community for import replacements. This ultimately builds capacity within the farming community, strengthen existing markets, and reach new ones, making Hawaii's agricultural sector more resilient. The Hawaii Farm Bureau received \$90,000 in FY 2022 and will end June 2023 to conduct this outreach campaign.

Plant Quarantine/Invasive Species Awareness at the Daniel K. Inouye International Airport and neighboring islands airports. In 2018, an initiative by PQB personnel was launched to promote awareness of the impact of invasive species on our environment and the promotion of the PQB as the first line of defense in combatting invasive species in Hawaii. The effort includes 10-second videos on a 1-minute loop with other products or organizations. The videos appear on all the television monitor screens above the escalators going down to the baggage claims for all domestic arrivals, including the escalator going down to baggage claim at the interisland terminal for a total of 4 video monitors. The videos are also be displayed on both sides of the new arrival and departure board at the Hawaiian Airlines/interisland ticket lobby. It also includes a static, back-lit, tension fabric display in the Hawaiian terminal near the food court. This is a 7-year project, ending in January 2027, funded with up to \$585,233.

Hawaii Administrative Rule amendments.

PQB administers Hawaii Administrative Rules (HAR) that directly apply to biosecurity. These rules are continually being reviewed and updated as needed. This is a multi-tiered

process which involves staff, various Advisory Subcommittees, the Advisory Committee on Plants and Animals, and Board of Agriculture review followed by the public hearing process. The process was initiated for the following changes:

HAR Chapter 4-72, Plant Intrastate Rules. Chapter 72 is currently being reviewed to add a permanent rule to regulate host material of the coconut rhinoceros beetle (CRB). The Board of Agriculture approved an Interim Quarantine rule on July 1, 2022 to regulate intra and inter-island movement of host material that could spread the invasive pest, coconut rhinoceros beetle, which will end on June 30, 2023. A permanent CRB rule will be added to Chapter 72.

HAR Chapter 4-70, Plant Import Rules. Chapter 70 is currently being reviewed to add a permanent rule regulating the import of firewood and citrus plants to Hawaii. Hawaii is one of the few states in the US without a firewood quarantine.

SECTION III

Description of Proposed Projects and Activities to be funded by the PIQE Fund

Funded Projects.

Plant Quarantine Branch Database and e-Manifesting.

Plant Quarantine Database Development. The Department will continue to utilize, improve, and expand the use of Kupono, the new Statewide, modern, automated, data collection, reporting, permitting, and eManifest system, and extend its availability to additional users. The work will address system design and implementation to meet PQB biosecurity efforts.

Nursery Certification and Compliance Project.

This project will continue as described in Section II.

Christmas Tree Inspection Project.

This project will continue as described in Section II.

Plant Pathogens, Insect Pests, and Apiary.

These projects will continue to perform surveillance and response to detections of invasive agricultural plant pests.

Funding of Personnel.

This will continue as described in Section II with funding more PQB positions with the replacement of General Fund with PIQE special fund in FY2022.

Hawaii Administrative Rule amendments.

The review and amendment process for Hawaii Administrative Rules is a dynamic process. The activities will continue as described in Section II.

SECTION IV

Act 243, Session Laws of Hawaii 2016 Report

The Department of Agriculture provided a report to the 2018 Legislative Session regarding Act 243, SLH 2016. The Act calls for annual reporting based on expenditures from general funds appropriated for FY2016-2017. General funds were not provided for additional years and as such there are no expenditures to report on regarding Act 243, SLH 2016.

SECTION V

Financial Plan

YEAR	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Beginning Fund Balance (Special Fund)	4,643,716	4,825,486	4,477,464	3,600,692	6,006,977	6,239,884	2,382,907	2,890,455	3,576,955	4,093,455	4,479,955
REVENUE											
Fees	6,644,219	6,074,598	5,809,187	6,035,717	5,400,882	6,122,439	6,000,000	6,200,000	6,200,000	6,400,000	6,400,000
Investment Pool Interest	76,287	43,205	88,984	158,150	35,908	35,316	45,000	45,000	45,000	45,000	45,000
Other	562	6,255	-	175	4,282	1,402	8,950	1,500	1,500	1,500	1,500
TOTAL REVENUE	6,721,068	6,124,058	5,898,171	6,194,041	5,441,071	6,159,157	6,053,950	6,246,500	6,246,500	6,446,500	6,446,500
EXPENDITURES											
Personnel Costs	3,272,574	3,273,310	3,413,983	3,272,574	3,224,422	8,642,906	3,750,000	3,750,000	4,000,000	4,250,000	4,250,000
Other Current Expenses	3,176,525	2,993,157	2,983,992	461,151	1,667,907	1,143,227	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Equipment	33,520	205,613	205,382	54,031	315,836	230,000	296,402	230,000	230,000	230,000	230,000
Motor Vehicles	56,679		171,586					80,000		80,000	80,000
TOTAL EXPENDITURES	6,539,298	6,472,080	6,774,943	3,787,756	5,208,165	10,016,133	5,546,402	5,560,000	5,730,000	6,060,000	6,060,000
BALANCE	4,825,486	4,477,464	3,600,692	6,006,977	6,239,884	2,382,907	2,890,455	3,576,955	4,093,455	4,479,955	4,866,455