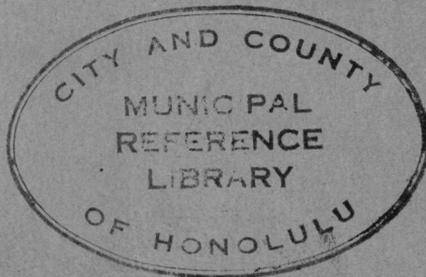
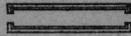


Report of the Mayor

OF THE CITY AND COUNTY OF
HONOLULU TO THE LEGISLATURE
of the TERRITORY OF HAWAII FOR
THE BIENNIAL PERIOD ENDING
DECEMBER 31, 1922

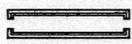


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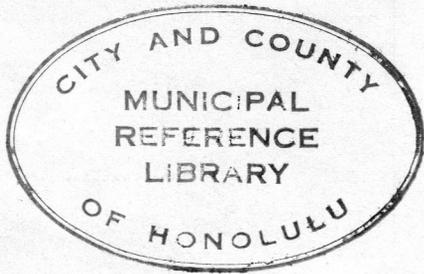
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Report of the Mayor

OF THE CITY AND COUNTY OF
HONOLULU TO THE LEGISLATURE
of the TERRITORY OF HAWAII FOR
THE BIENNIAL PERIOD ENDING
DECEMBER 31, 1922



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OFFICIALS
OF THE
CITY AND COUNTY OF HONOLULU
TERRITORY OF HAWAII

Term of Office: July 1, 1919, to December 31, 1923

MAYOR

JOSEPH J. FERN (Died February 20, 1920).
JOHN H. WILSON (Appointed by Board of Supervisors, Feb. 25, 1920)

BOARD OF SUPERVISORS

Charles N. Arnold	Eben P. Low
Ben Hollinger	William H. McClellan
Jonah Kumalae	Manuel C. Pacheco.
Lester Petrie	

ELECTED DEPARTMENT HEADS

Attorney	William H. Heen
Auditor	James Bicknell
Clerk	David Kalauokalani
Sheriff	Charles H. Rose
Treasurer	D. L. Conkling

HEADS OF DEPARTMENTS (Appointed)

Engineer	Frederick Ohrt
General Manager of Water and Sewers Department.....	W. A. Wall
Chief Engineer, Fire Department.....	C. H. Thurston
Building Inspector	Louis Cain
Superintendent of Electric Lights.....	W. L. Frazee
Superintendent, Parks and Playgrounds	F. C. Benevedes
Physician	Dr. A. K. Hanchett
Leader Hawaiian Band.....	Mekia Kealakai
Superintendent of Municipal Market.....	Fred Luning
Superintendent of Garbage Department.....	Samuel Lehua

BOARDS AND COMMISSIONS

CITY PLANNING COMMISSION—

J. D. McInerney, President
George P. Denison
Arthur R. Keller
H. R. Macfarlane
Philip E. Spalding
Mayor John H. Wilson
Engineer Frederick Ohrt

RECREATION COMMISSION—

Mrs. Julie Judd Swanzy, Chairman
A. L. C. Atkinson
Judge S. L. Desha, Jr.
Miss Margaret Mossman
Supervisor Manuel C. Pacheco
(Chairman of Parks Committee)

PENSION BOARD—

Mayor John H. Wilson, Chairman
Auditor James Bicknell
Treasurer D. L. Conkling
Clerk D. Kalauokalani, Secretary

CIVIL SERVICE COMMISSION—

David K. Trask, Chairman
John O'Connor
Palmer P. Wood
Clerk D. Kalauokalani, Secretary

SHADE TREE COMMISSION--

Miss Beatrice Castle, Chairman
John R. Cox
Charles S. Judd
Frederick Ohrt, City Engineer
F. C. Benevedes, Supt. Parks and Play-
grounds

Honolulu, Hawaii,
February 27, 1925

**THE PEOPLE
OF THE
CITY AND COUNTY OF HONOLULU**

BOARD OF SUPERVISORS
Seven Members
Elected at Large

LEGISLATIVE

HEADS OF DEPARTMENTS
APPOINTED BY THE MAYOR WITH
APPROVAL OF BOARD OF SUPERVISORS.

SUPERINTENDENT PARKS AND PLAY GROUNDS PUBLIC BATAS	ENGINEER Streets, Roads and Bridges. Municipal Garage and Machine Shop.	GENERAL MANAGER WATER & SEWERS Reservoirs, Pumps and Pipe Lines.
CITY PHYSICIAN Emergency Hospital Indigent Patients Food Inspection	BUILDING INSPECTOR Building Permits Construction and Maintenance of School Buildings	SUPERINTENDENT ELECTRIC LIGHTS Municipal Water Power Plant, Street Lighting, Police & Fire Alarm System
LEADER OF HAWAIIAN BAND Municipal Band	CHIEF ENGINEER FIRE DEPARTMENT	SUPERINTENDENT MUNICIPAL MARKET
FOOD INSPECTORS Milk, Fish, Poi and Meat.	SUPERINTENDENT GARBAGE DEPT. Street Cleaning Removal of Garbage Cleaning Storm Drains & Pumping Cesspools	PLUMBING INSPECTOR

ADMINISTRATIVE

MAYOR
Chairman Board of Supervisors
Ex-Officio Member of Pension
Board and City Planning Commission.

EXECUTIVE

PENSION BOARD
3 Members
designated by
Law, Mayor,
Auditor and
Treasurer.

**CITY PLANNING
COMMISSION**
5 Members
and Mayor
and
Engineer

**RECREATION
COMMISSION**
4 Members
and Chairman
Park Committee
of Supervisors

**CIVIL SERVICE
COMMISSION**
3 Members

**SHADE TREE
COMMISSION**
3 Members
and Engineer
and Supt. of
Parks and
Play Grounds

COMMISSIONS APPOINTED BY MAYOR
WITH APPROVAL OF BOARD OF SUPERVISORS

ATTORNEY

AUDITOR
Ex-Officio Member
Pension Board

TREASURER
Ex-Officio Member
Pension Board

CLERK
Designated by Law, Clerk
Board of Supervisors
Pension Board
Civil Service Commission

SHERIFF
Ex-Officio Coroner

**ORGANIZATION CHART
CITY AND COUNTY OF HONOLULU.**

NOTE:- RED LINES INDICATE ELECTION BY PEOPLE

REPORT OF THE MAYOR

Honolulu, Hawaii,
February 21, 1923.

To the Twelfth Legislature of the Territory of Hawaii,
Honolulu,
Hawaii.

Gentlemen:

It is both my duty and my privilege to present to you herewith a report of the affairs of the City and County of Honolulu and their progress for the biennial period of 1921 and 1922, together with detailed statements of the various departments of the municipal government during the space of these two years, and recommendations which are respectfully made by myself and the heads of these departments to the end that the future may mark longer and more determinate strides toward the goal of comfort, facility and wisdom in the conduct of the civic machinery of this commonwealth.

It so happens that this biennial report comes in the final year of the incumbency of the present administration of the City and County government. Therefore there have been included here more complete reports than required by law; reviews in some instances of the work accomplished and plans evolved through the experience gained in the complete four years of the administration. It is hoped that this more exhaustive report will be of assistance to your Honorable Body in its consideration of legislation which will work to greater advantage in the successful accomplishment of the City and County government in the future. To a very large and, I might say, primary extent, the municipal machinery is dependent on you for the improvements necessary for smooth and powerful revolution.

We must look to you for added facilities in its operation, for increased lubrication of its cogs and belts, for additional motive power to assure its capacity to meet the growing needs and demands of ever exacting requirements of normal and natural progress.

In many instances the City and County of Honolulu is endeavoring to meet these demands with archaic material facilities; in many instances there are parts of the municipal machinery which were designed for competently meeting a situation which has long since passed. These should be replaced by a modern and enlarged equipment, by modern and more elastic methods, in order that we may meet the requirements of a modern and growing community. In this report I assume it my duty, as chief executive of the City and County, to bring to your attention instances of these points of inadequacy, and respectfully to offer recommendations and suggestions for their improvement.

REPORT OF STEWARDSHIP

The Legislature of the Territory, since the creation of the City and County government of Honolulu, has consistently endeavored to assist the municipality in the work of making conditions more adaptable to the needs of the community. In the Special Session of 1920, and the regular Session of 1921, there were a number of Acts passed by your Honorable Body which had to do with municipal affairs. I deem it fitting and proper that I should herewith report on the stewardship of the City and County government in executing the provisions of these Acts.

Act 150 of the Session of 1921 authorized and empowered the Board of Supervisors to appropriate certain sums for the construction of an additional fire station for the adequate protection of the Kaimuki, Kapahulu and Wai-kiki districts, and for the erection of a fire station at Ka-

lihi. I beg to report that both these improvements are now under way and nearing completion.

Act 193 appropriated the sum of \$300,000 from the treasury of the Territory for the construction of a permanent road to the Waimanalo beach lots. This road work is now under contract construction and is progressing.

Act 205, which authorized the City and County to issue and sell bonds in the total sum of One Million Dollars for the purpose of providing extensions, betterments and replacements to the water system of the municipality, has been executed to the extent that the Board of Supervisors has issued and sold One-Quarter of a Million Dollars in bonds so far, and utilized the money thereby acquired in material improvements throughout various sections of the city and in the development of new sources. By this means the pumping capacity has been increased Fifty percent, and the new or tunnel-developed water, Two Hundred percent. The Board of Supervisors has also authorized the appointment of an expert to summarize the various reports made within the past 10 years on the water works system, and to prepare a comprehensive plan for extensions, replacements and development in which the remaining Three-Quarters of a Million Dollars in bonds, authorized by your Honorable Body, will be expended. This work is now being done by G. K. Larrison.

IMPRACTICAL PROVISIONS

In the matter of Act 47, amending Act 194, Session 1919, it is provided in Section 3 that in the construction of roads in the Alewa Heights district "no contract shall be entered into until such time as water mains shall have been laid and connected by the City and County for said tract." This provision cannot logically and practically be carried out. The situation in Alewa Heights is such that considerable grading is required for roads and if your provision should be acceded to, the laying of water mains, previous

to the preliminary grading for roads, could be accomplished only at an expense out of all proportion to the nature and extent of the work, and would probably result in the destruction of much of the improvement through blasting during the excavation work later by the road contractor. This provision should permit the letting of the contract simultaneous with the laying of the water mains, which latter improvement by the City and County could follow the grading.

Act 34 of the Special Session, providing for the organization of a Municipal Market, has been carried out, as well as Act 39 of the Special Session, providing for the transference of funds from the Territory for this purpose.

THE MUNICIPAL MARKET

In the matter of the Municipal Market I beg to refer to Act 62 of Session 1919 in which the sum of \$44,000 is set aside for improvement and extensions in the market. There now remains \$11,691.95 unexpended of this amount, and according to Act 62, "any unexpended balances after the execution of the respective purposes heretofore designated, said board (of Supervisors) is hereby authorized, empowered and directed to appropriate and expend any such residue and accumulating balances for playground equipment or improvements of public parks."

It is my opinion that this amount of \$11,691.95 should remain for the use of the Municipal Market, as improvements urgently necessary there have not been completed, and there is need for this amount of money in extensions and new equipment.

The Municipal Market has been the subject of much discussion by the Board of Supervisors and in the newspapers for the past twelve months. Governor Farrington has also discussed it in his message to your Honorable Body.

The Governor refers to panaceas for the present unsatisfactory condition of the independent producer of perish-

able merchandise throughout the Territory, and I believe he has hit upon the remedy for the market situation in his support of the proposal to inaugurate a system of county agricultural agents to educate the small farmer in the requirements of the market. As the Governor says: "the County Agent System is a modern method of practical assistance" which has worked with success throughout the mainland. Such a system, operated in conjunction with the Municipal Market would eradicate the present unsatisfactory condition which exists there through the tendency of the small producers to unload their over-production on the Municipal Market after having disposed of the best of their produce to the private dealers.

The Municipal Market has not been a paying proposition if measured by its financial return to the municipality, but in terms of the assistance it has been to the public it is a success. As is shown by the report of the superintendent herein contained, the butcher shop has greatly increased in extent and amount of business done, and material decreases in the retail cost of meats have been the result. There have been reductions throughout the city of from 15 to 30 per cent in meat prices through the operation of the Municipal Market, and this reduction has been maintained. And while the buyer has profited, so also has the producer; the margin of selling profit having been reduced through the increase in the wholesale price to producers and the reduction of the retail price to consumers.

I have faith in the present superintendent of the market and honestly believe that if given a fair opportunity, and the equipment necessary, he will put the market on a self-supporting basis as well as continue to save the public money in its purchases of meat and produce. The market is also a means of employment to a number of Hawaiians who are now operating as jobbers of merchandise there.

MUNICIPAL BUILDINGS

Act 195 of Session 1921 authorized the issuance of

bonds in the sum of \$150,000 for the purchase of the Kapiolani Building, now housing the municipal government offices. In my report to the Legislature of 1921 I endeavored to set forth the serious problems facing the municipality in regard to a permanent home for the departments of the City and County. I called attention at that time to the fact that we were in 1921 paying a rental of \$900 a month for the Kapiolani Building, and that in 1923 we would pay \$1,000 a month or \$12,000 a year. We are paying that sum this year.

No advantage was taken of the authority granted us by the Legislature of 1921, but instead the Cooke property at Punchbowl and King streets was purchased for the sum of \$90,000. This property is returning us in rentals approximately \$200 a month, or \$2,400 a year, which is less than 3 per cent on the value, or cost, and the property is far too small for any practical use for municipal structures commensurate with the needs of the very near future. It is approximately 54,000 square feet in area, and even with property which could be acquired adjoining the site, would not be sufficient for acceptable municipal buildings for a city the size of Honolulu.

We are now paying, therefore, approximately \$15,000 a year rental for a municipal home. This is 5 per cent of \$300,000, a sum in excess of which it might be possible to acquire the Kapiolani Building until we can provide a site and permanent municipal structures. I have been informed, however, that the sum of \$150,000, for which the building could have been purchased two years ago, will not now acquire it. Our lease expires with the close of this year. What the rental will be hereafter, should the owners consent to re-leasing it, is not known at this time.

We need not only a permanent city hall, but new and permanent quarters for the police department, emergency hospital, and should have a municipal auditorium. It would require grounds equal in size to the Capitol grounds, which are about 475,000 square feet in area, to provide a suitable site for municipal buildings. I call your attention to the report of Dr. A. K. Hanchett, city and county physi-

cian, in regard to the need of a municipal hospital, and I repeat my statement of two years ago, that no city of Honolulu's size in the United States is without a government-owned municipal building appropriate to the size and importance of the municipality.

I believe that the people should decide this very important matter of a proper site and the construction of proper and adequate buildings for the municipal government. I believe that the people should be given an opportunity to vote on proposals for financing such a necessary improvement. This should be accomplished by the appointment of a commission which would prepare descriptions and merits of various sites for submission to the people at a special election called for the purpose.

I cannot too strongly urge some action taken for the permanent housing of the municipal government. With the passing of each year the property values are going up and what we could have bought for one dollar a foot ten years ago would cost many times that amount today, and will cost many times the present price in the next ten years.

WAIKIKI RECLAMATION

Permit me to call attention to the work being done by the Territory in the Waikiki Reclamation project. The dredging of the initial canal has progressed rapidly and satisfactorily, the entire canal now almost completed. But the dredgings are being used exclusively for the filling of privately-owned property, nothing being done in the filling of the government-owned land adjacent to the canal and which is designed as a lateral park and boulevard to border the canal its entire length. It is especially desirable that this filling be done as soon as possible in order that the city may push forward the plans for the highway which is also to border the canal and Territorial Fair Grounds. Government improvement of this nature should not always await the completion of private enterprise.

COLLECTION OF GARBAGE

In the matter of the collection of garbage the City

and County has taken a decisively progressive step in the past two years. The present municipal administration has inaugurated a system of free collection of garbage, and although the additional expense has been in the neighborhood of \$70,000 a year, the service is complete and gratifying to the public. The city has also inaugurated a free cess-pool pumping system.

The problem of the disposal of garbage is now looming as a perplexing one. At present the board of health is permitting the use of the new McKinley High School site as a dumping ground as the refuse helps to fill in the land, but this cannot continue much longer and a permanent means of disposing of garbage must be found.

There are two alternatives: one, the carrying of the garbage out to sea on scows, and the other, the construction of an incinerator plant for consuming it. Some cities on the Pacific Coast use the method of carrying the garbage to sea and in most instances this is satisfactory, although the city of Oakland, California, has been having difficulties with San Francisco over this method as the garbage is sometimes carried back into the bay. The incinerator system would seem to be the most satisfactory as a permanent method.

SEWERS

Another serious problem not yet removed is that of sewers. Although a bond issue was carried in 1920, and \$100,000 provided for Kalihi sewers and \$500,000 for Wai-kiki, and the Kalihi sewers already installed, it is now necessary to take up the matter of the system in the main section of the city. This system was designed for a city of not more than 50,000 population and it is now painfully inadequate. As a result we have the constantly recurring Nuuanu stream menace. The sewers back up into this stream and create a dangerous sanitary situation, and yet, if they did not do so, the entire sewer system in the main part of the city would be hopelessly clogged.

A gravity system for the higher levels is necessary to relieve the present situation. As the system now is, all the sewage is carried by the same system of pipes to the outfall sewer pump. It should not be necessary to carry sewage from the higher levels to this pump, thereby making impossible demands on the lower level system through which it runs. A gravity system for the higher levels is necessary, permitting the sewage to reach the sea without pumping and without connection with that from the lower levels which must be pumped. It is the sewage from the lower levels which backs up into the Nuuanu stream when that from the higher levels overloads the system.

It is estimated in the report of the engineers who outlined the plan for sewer improvement under which the Kalihi and Waikiki projects were inaugurated, that the sum of \$165,000 would relieve the present unsanitary situation in the Nuuanu stream. This sum would probably affect a temporary relief, but the gravity sewer system is a permanent one. It is the estimate of the general manager of the sewer department that to make a gravity system in all sections of the city above a twenty-foot level would cost in the neighborhood of \$650,000, and a new outfall, approximately \$90,000. This would make a total of \$750,000, but as is always the case with improvements of this nature, additional funds are necessary for additional necessary improvements in connection with the initial project, and I estimate that the sum of One Million dollars would be required to give Honolulu a permanently adequate system in the main section of the city.

In the authorization of such a bond issue, it would be advisable to permit the Board of Supervisors the authority to utilize sums in necessary sewer installation in Aiea, Waialua, or any of the outside growing communities which are an integral part of the City and County.

I cannot go on record as deciding whether this money

should be raised through a bond issue submitted to the people, or through an issue authorized by your Honorable Body. I do not wish it implied that I am unfavorable to, or fear, a plebiscite at any time on a matter of public improvement and expenditure of public funds, but in a case such as this, when the improvement is plainly necessary, and undoubtedly would meet with public favor, it would be wise to issue bonds without the necessity of expending sums contingent on a bond issue election.

WAIPAHU SEWERS

Rights of way are now being acquired for the Waipahu sewers as provided in Section 2 of Act 218, Session 1921, and it is expected that construction will be commenced this summer. There are two plans, both of which have been submitted to the Board of Health. One is for a gravity system which would carry the sewage into the middle of Pearl Harbor. This would cost in the neighborhood of \$190,000. There is some complaint against such a system as it would probably result in sewage being carried to the shores on the Ewa and mauka side where there are salt works and fishing rights. The other plan is for the installation of a pump to carry the sewage to cane lands on the waikiki side of the harbor, where the plantation would dilute it with water and use it for irrigation and fertilization. This plan would cost about \$140,000. The Legislature has already authorized the issuance of bonds in the sum of \$110,000, but about \$30,000 additional is needed.

ROADS

There have been marked improvements made in the matter of roads throughout the City and County during the past two years. The Kakaako district road plans have been completed, and Ala Moana is now a permanently-improved highway as far as Keawe street. The details of these improvements are contained in the very exhaustive report of the City Engineer submitted herewith.

Bids for the construction of the asphaltic concrete paving of Kamehameha Highway from the Nuuanu Pali two miles this way, have been advertised and will be opened in March of 1923. Construction on this section of the highway will probably begin in April. Under Section 24 of Act 19, Session 1921, the sum of \$150,000 was appropriated by the Territory for this purpose. A like amount would bring the asphaltic paving of the highway to the end of the Pali section at the Oahu Country Club road, or the head of Nuuanu street.

I should like to bring to your attention the matter of the present method of providing the funds necessary for public improvement work.

Under the existing law the Board of Supervisors must make available all necessary funds for improvement contracts when the work is begun in the final fiscal year of their term of office. I agree with the City Engineer that this law should be amended "to permit the Board to award contracts without having the specified amount of the contract price available but with having 33 1-3 per cent available, and to permit the Board to allow the balance of the contract price to be assumed by a succeeding Board in the event that the contract cannot be completed with the last fiscal year of their term of office."

And the Board of Supervisors should also have the authority, when conditions make it necessary, to make the necessary funds available through bonds, as the share of property owners is obtained. This would not be necessary in all cases, but the Supervisors should have such authority when it is necessary. In the present instance we could go ahead immediately with the widening of Bishop and Bethel streets if we could raise the money for the purpose through permanent improvement bonds, to be paid for over a period of 10 years. As it is, we cannot raise the money necessary from our permanent improvement fund as the demands on this fund for other necessary improvements are too great.

A great assistance could be rendered public improvement through an Act of the Legislature which would decrease the percentage of available funds necessary by the city for public improvement work, and an Act authorizing the Board of Supervisors to raise the city's share through bonds when deemed necessary.

The frontage improvement law also works a hardship on the city in the matter of property purchased from public funds for street widening and extensions previous to the actual formation of the improvement district. Under the law the city cannot charge this cost against the property owners in the subsequently created district, although it was purchased for the improvement for which the district is created.

There are times when it is absolutely necessary for the city to make these purchases of property previous to the creation of the district. For instance, it is the intention to widen Beretania street and King street ultimately. A set-back line has been established on these streets where the widening is contemplated, and all new construction on private property must conform to this set-back line. It is necessary, however, whenever such private improvement is contemplated, for the city to purchase that portion of the property outside the set-back line. In the long run this is a saving to the property owners in the district, as the property is cheaper than it will be at the time of the formation of the improvement district and the letting of the contract for the improvement, and there are no damages to pay for buildings removed, but under the law this expenditure cannot be charged to the district until it is actually created.

This condition should be remedied.

CONDEMNATION PROCEEDINGS

At present the laws regarding condemnation proceedings work a distinct hardship on taxpayers. Under the

present system, the city finds itself met by prohibitive and excessive property values when it announces the intention to widen streets or extend them, or purchase parks or school sites. As a result condemnation proceedings are necessary, and the work must be delayed until the courts decide on the fair cost of the land necessary. This sometimes means a delay of months, or years, with a result that in improvement district work an entire new estimate must be made on the entire work when it is possible to begin.

It might be of advantage to the Territory if a law should be enacted similar to that in New Zealand, where the government is permitted to condemn any property desired for public improvement and pay the owner not more than 10 per cent of the assessed valuation. This would at least have the effect of increasing the assessed valuation materially and we would collect taxes more in conformity to what we should collect from large property owners.

NUUANU STREAM MENACE

The menace of the Nuuanu stream would exist to a certain extent, even though the proposed gravity sewer system should be constructed and the present backing up of the sewers into the stream eliminated. As long as this open body of water flows through a well-populated residence district and a business section it will always be an unsightly thing owing to the tendency of those on its shores to throw refuse into its waters.

I believe Nuuanu stream should be covered. An estimate of \$2 a square foot is given me as the cost of a concrete covering for the stream. When it is considered that property in that neighborhood is valued at \$6 a square foot, it can be seen that such an improvement would not only remove an eye-sore, but would result in newly acquired land at a saving of about \$4 a foot. The resultant property could be parked, used for public markets, or as parking

place for automobiles, and to a large extent result in revenue to the city.

PENSIONS FOR PUBLIC EMPLOYEES

I believe that the powers of the Pension Board should be extended to permit the pensioning of all employes of the City and County government who are incapacitated in the service of the city, or who have given a long term of years in that service. At present the Board is permitted to pension only members of the police and fire departments and Hawaiian Band. Surely other employes, whose service is as great, should come under the helpful provisions of the pension law.

PARKS

The gratitude of the citizens and taxpayers of the City and County is hereby extended to former Governor Charles J. McCarthy and Governor Wallace R. Farrington for the executive orders which conveyed to the municipality the titles to parks in the country districts, namely: Waimanalo, Nanakuli, Keaweula, Kailua, Hauula, Pupukea, Lualualei and Kaneohe.

As a result of these executive orders, and gifts from Mrs. Julie Judd Swanzy of Kaaawa Park, and from W. R. Castle of Kawaihapai Park, the City and County now has a chain of parks and public camping grounds extending around the island.

It has been the policy of this administration to acquire as much parking space as possible throughout the city, and I am in favor at all times of acquiring more and more land for the parks, not alone in the country districts, but in the congested districts of the city proper as well.

I believe that the Board of Supervisors should be empowered to float bonds to a certain limit for the acquisition of land for new parks, or extensions to present parks where

the public interest is unquestionably to be benefitted thereby.

CITY PLANNING COMMISSION

The Planning Commission of the City and County has done admirable work during the past two years in its diligent and painstaking effort to eliminate the present maze of undesirable and health-menacing lanes and alleys in the congested district of Palama, and in laying out a comprehensive plan for the streets and thoroughfares in the reclaimed Waikiki area. It has also devoted much of its time and energy to correcting existing conditions in other portions of the city and planning for improvements in street widening and extensions for the future.

The City and County is to be congratulated in having the services of men of the ability and character of James D. McInerney, George P. Denison, Philip E. Spalding, Dr. A. R. Keller and Harry R. Macfarlane, who are giving their time and services to the municipality without compensation and who, because of their private responsibilities, could not otherwise be obtained by the government at any price. They are making a tangible and direct contribution to the advancement of this community and no praise is too great for their unselfish service.

That such a commission is valuable is unquestionable, and in every important city of the mainland a similar organization in governmental affairs has come to be a vastly important and increasingly contributing function of public service.

ARMY AND NAVY CO-OPERATION

It is with deep gratification that I convey the thanks of the officers of the city government, especially that of the City Engineer, to the Army and Navy, for the goodwill manifested and the assistance freely granted in the work of the City and County government in material betterments.

DETAILED REPORTS

With these suggestions and recommendations, respectfully made, I submit herewith the detailed reports of the various departments of the City and County government, together with several graphic charts and photographs which show more plainly than can words the conditions to which they refer.

These charts show the rapid growth of the city and the certainty and degree of growth in the future. It is not alone to meet the present conditions, but to provide for those which will arise later, that recommendations from the various departments and my own are made. Foresight is necessary in the conduct of a municipal government even more than in a private corporation. We are met with increasing demands which are a natural corollary of passing time. In Honolulu this natural growth is becoming abnormal through the peculiar position of the Island of Oahu in the very center of the Pacific Ocean, across which the roads of the new world dominion are net-worked. In many ways we have peculiar situations to meet here, not the least of which is the predominantly foreign population, not only of people of different color and blood, but of different creed and tradition. Although to some it may seem nebulous, the responsibility of the city government is accentuated by these conditions, and the future promises still further demands along the line of Americanization in which the City and County must make distinct and permanent contribution.

It is then with a feeling of deep responsibility that I have endeavored to maintain my office to the best interests of the people regardless of caste or color, and I offer the record of the present municipal government as a demonstration of our sincerity of purpose and fidelity to trust.

Yours very truly,

(s) JOHN H. WILSON,
Mayor of the City and County of Honolulu.

MUNICIPAL EXPENSES

Showing the amount actually expended by the City and County of Honolulu to meet the necessary and imperative current expenses for the ten years beginning January 1, 1913

Year	General Government	The Courts	Protection to Life and Property	Sanitation and Health	Parks and Bands	Street Lighting	Grand Totals
1913	\$ 73,831.42	\$ 59,527.85	\$215,701.15	\$ 66,881.51	\$ 46,726.27	\$24,147.67	\$ 486,815.87
1914	80,259.16	59,494.57	216,428.38	66,741.44	49,984.73	20,781.54	493,689.82
1915	85,799.97	68,739.84	232,698.26	72,270.51	56,685.26	25,959.94	542,153.78
1916	81,116.08	54,609.42	274,269.21	76,782.42	60,044.40	26,999.44	573,820.97
1917	87,824.73	60,580.58	260,607.37	92,716.80	69,827.62	28,400.16	599,957.26
1918	96,000.65	73,546.92	310,835.73	97,651.05	78,387.89	32,104.72	688,526.96
1919	114,453.27	96,262.60	347,739.64	154,530.58	97,576.60	35,504.89	843,058.38
1920	133,273.44	109,332.12	373,808.10	217,026.86	100,999.43	38,406.00	972,845.95
1921	154,894.00	106,442.27	389,349.31	250,322.52	111,852.65	53,971.94	1,066,832.69
1922	153,199.12	137,603.19	413,352.37	285,039.93	124,601.84	46,736.87	1,160,533.32

Increase 1922 over 1913, 138.39 per cent.

REPORT OF THE CITY ENGINEER

To the Honorable,
the Mayor and Board of Supervisors of
the City and County of Honolulu.

Gentlemen:

In compliance with the provisions of Section 1762 of the Revised Laws of Hawaii, 1915, I submit herewith my annual report including a report from August, 1919, when J. H. Wilson was appointed City Engineer, and from March, 1920, when I was appointed City Engineer, to date, thus presenting a brief resume of the work of this Department under the administration of the present Board of Supervisors during the three and one-half years of the Board's term of office.

A two-year term of office for a Board of Supervisors is not sufficient for that body to properly analyze major problems, digest and approve of preliminary studies and see the successful execution of the work before they are diverted by an impending election.

Therefore, it is impossible to over-estimate the advantage of the four-year term in planning and executing the work of this Department.

This report is divided into five main parts:

Part 1. General.

Part 2. Engineering Department.

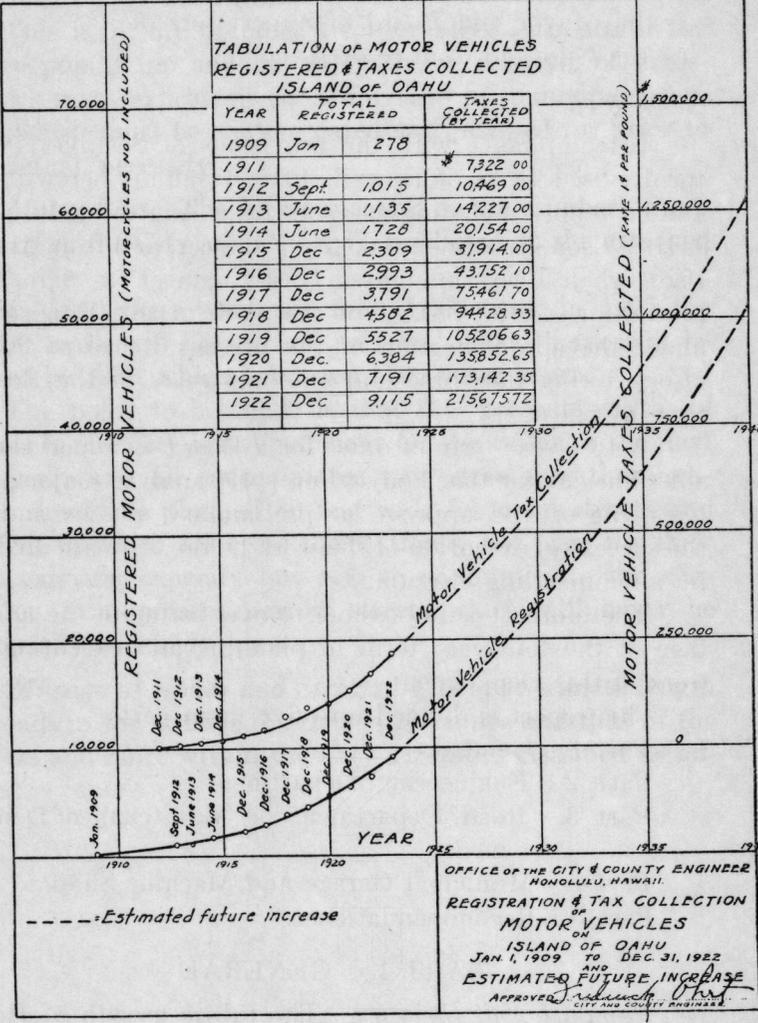
Part 3. Road Department or Maintenance Department.

Part 4. Municipal Garage and Machine Shop.

Part 5. Recommendations.

PART 1. GENERAL

Population of the City. The future growth of Honolulu is predicted on the basis of the growth of the other cities shown on the attached graph.



OFFICE OF THE CITY & COUNTY ENGINEER
HONOLULU, HAWAII.
**REGISTRATION & TAX COLLECTION
OF
MOTOR VEHICLES
ISLAND OF OAHU
JAN. 1, 1909 TO DEC. 31, 1922
AND
ESTIMATED FUTURE INCREASE**
APPROVED: *J. J. [Signature]*
CITY AND COUNTY ENGINEER

In 1910 Honolulu's population was slightly in excess of 50,000; in 1925 the 100,000 mark will be reached and the 200,000 mark will be passed by 1943, which is but twenty (20) years into the future.

This is, in my opinion, a conservative estimate of the future population and, all things being relative, of necessity we must expect an equal increase in municipal problems which must be contemplated and planned for prior to the actual necessity.

Motor Cars. The future increase in the number of motor cars in the City and County is predicted on the attached graph.

In 1910 there were less than 1,000 cars; in 1925 the 14,000 mark will be reached and the 30,000 mark will be passed by 1933, which is but ten (10) years hence.

The point to be made is that the present width of streets in the City is not sufficient for the traffic of the next ten years and all contemplated new streets or thoroughfares should be planned 80 feet wide for main streets and 70 feet in width for cross town streets, not only for their own carrying capacity but also to accommodate the congestion from present narrow streets which will never be materially widened.

Mileage of Roads and Streets. The approximate length of roads in the outside districts is 205 miles and that of the streets and lanes within the City 218 miles classified as follows:

CLASSIFICATION OF STREETS AND HIGHWAYS
WITHIN THE CITY AND COUNTY
OF HONOLULU

Type of Pavement	Honolulu District	
	Dec. 31, 1910	Dec. 31, 1922
Bitulith'c and		Miles
Asphaltic Concrete		11.7
Warrenite4
Concrete		15.5
Asphalt Macadam		51.1
Oiled Macadam	24.7	30.0
Water Bound Macadam	44.5	10.0
Coral	6.7	10.3
Palolo Cinders	7.5	12.0
Dirt Graded		51.0
Conglomerate	13.8	
Sand Clay	4.3	
Unimproved	(Not included)	26.0
		218.0
		Outside Districts
		Miles
Concrete		10.3
Asphalt Macadam		23.0
Oiled Macadam		48.0
Coral		44.0
Dirt Graded		79.7
		205.0
Total for City and County		
December 31, 1922		423.0

PART 2. ENGINEERING DEPARTMENT

Policies and Engineering Organization. The main policy of the present Board in undertaking large improvement projects is a laudable one and monumental to its record.

The Kakaako Improvement is an example of a major project in which two years of time were consumed in preparing proper plans and specifications and acquiring necessary lands and rights-of-way, etc., while but one year was consumed in actual construction.



Ala Moana from Richard Street Prior to Kakaako Improvement

The expenditures by years were as follows:

August to December 31, 1919.....	\$ 14,112.43
Year 1920	23,691.79
Year 1921*	252,685.91
Year 1922, ending Aug. 1, 1922†	526,889.25
Total	\$817,379.28
Reserved on contract for unfinished work	530.50
Total cost of project	\$817,909.78

*Contract dated August 1, 1921.

†Final payment August 29, 1922.

The items of cost and percentage of the total work for the major project were as follows:

	Amount	Percentage of total
Land acquired and damages settled	\$ 53,486.45	6.5%
Contract for street construction.....	703,030.00	86.0%
Preliminary Engineering to date of contract	29,415.39	3.6%
Construction Engineering and inspection	31,977.94	3.9%
Total cost of project*	\$817,909.78	100.0%
Assessed against private property.....	303,951.02	37.1%
Paid by City and County	513,958.76	62.9%

* Total cost does not include new sewers, water mains, street lights, Transit Company's work, Gas and other public utility expense.

The engineering expense up to the time the contract was signed was 3.6 per cent of the total cost and the engineering and inspection expense from the beginning of construction to the completion of the work was 3.9 per cent.

A word of praise is due the Hawaiian Contracting Company for its high standard of work on this project.

These large projects consume more time in proper preparation and thereby save time in construction, and time spent in carefully preparing plans and saved in construction means money saved both ways.

To expedite the large projects it is necessary to maintain branch offices on the site of the work where men em-

ployed report directly at 7:00 A. M., rather than at the City Hall at 8:00 A. M.

At present a sub office is maintained at Kaneohe for the staff working on the Kamehameha Highway and Waimanalo Road projects; a sub office is maintained in Puunui for the staff working on the Puunui Improvement project and one is maintained in Kaimuki for the staff working on the Kaimuki Improvement.

CONSTRUCTION WORK COMPLETED, UNDER CONTRACT AND PROPOSED

Work Under Contract August 1, 1919. On August 1st, 1919, there were two (2) projects under contract—The Alewa Heights Improvement and the First Unit of the Kamehameha Highway.

Work Under Contract During 1922. During the past year, the combined values of highway and bridge work under contract totaled \$2,756,300.00, which includes estimates for engineering on uncompleted work.



Ala Moana from Richard Street, after Kakaako Improvement

SUMMARY OF PROJECTS COMPLETED AUGUST
1919, TO DECEMBER 31, 1922

Work Completed. Construction projects completed during the period of this report, together with the dates of acceptance and their value are itemized as follows:

Improvement [†]	Date Completed	Total Cost	Remarks
Improvement District No. 6— Alewa Heights	Jan. 1920	\$122,669.75	Includes main contract, extras and additional drain.
Improvement District No. 9— Kakaako District	Aug. 1922	817,909.78	\$530.30 retained for incomplete work.
Frontage Improvement No. 10, Beretania St., Punahou to King St. Extension	May, 1920	83,896.50	
Frontage Improvement No. 17— Liliha St. Judd to Wyllie Sts.	June, 1922	37,883.48	
Frontage Improvement No. 20— Hotel Street	Oct. 1922	49,707.50	No Contract. Acquisition of land and damages only.
		\$1,112,067.01	

(B) OTHER STREET IMPROVEMENTS COMPLETED.

Frear and Perry Sts.....	Dec. 1920	7,618.25	\$5,500 territorial appropriation.
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(C) HIGHWAY PROJECTS COMPLETED.

1. Kamehameha Highway, first unit	Sept. 1921	*\$455,103.73	
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*This includes cost of 476,736 sq. ft. reinforcing mesh and steel for several bridges not included in this unit.

2. Waimanalo Road, 1st unit	May, 1921	78,495.21	
		\$533,598.94	

(D) BRIDGES COMPLETED.

Laimi Bridge	Jan. 1921	7,869.85	
Hasting St. Bridge	Jan. 1921	} 3,765.25	
Dominis St. Bridge	Jan. 1921		
Anahulu Bridge	July 1921	71,383.47	Includes materials furnished by C. and C.
Keeau Bridge	July 1921	3,154.00	
		\$86,172.57	

(E) MISCELLANEOUS PROJECTS COMPLETED.

Ward St. Drain Cover.....	April 1921	\$14,049.15	
Iwilei Drain	July 1921	7,172.56	
Kapiolani Park Fill.....	May 1921	37,025.50	
New McKinley High School Fill	Jan. 1922	12,000.00	\$.25 per cu. yd.
Alapai Street Stairway.....	Aug. 1922	1,968.17	
Frear Street Stairway	Nov. 1922	1,845.50	
Concrete Walk, Halekulani..	Nov. 1922	937.58	
Concrete Walk, Moana	Dec. 1922	737.00	
		<u>\$75,735.46</u>	

(F) PROJECTS COMPLETED BY ROAD DEPARTMENT FORCES.

Project.	Date Completed.	Cost
Kaukonahua Gulch Realignment and Parapet wall	December, 1919	\$16,262.47
Raising Concrete Bridge No. 3, Kaneohe	August, 1921	8,738.89
Kipapa Gulch Realignment and Paving....	December, 1921	37,092.70
Waikakalaua Realignment and Paving	December, 1922	44,713.29
Halawa Gulch Realignment	June, 1922	10,566.01
Kalauāo Realignment	August, 1922	6,258.82
Halekou-Waikaluakai Homestead Roads	September, 1922	9,698.69
Lualualei Homestead Roads	September, 1922	9,393.22
Pupukea-Paumalu Beach Lots—Roads	December, 1922	32,288.24
Grading Territorial Fair Grounds	August, 1922	11,879.82
E. Manoa Retaining Wall	December, 1922	2,580.68
Grading Garage Lot	July, 1922	12,000.00
Realignment and Paving Puuloa Junction Moanalua	December, 1922	13,429.39
Repair and Reconstruction of Bridges (18 new bridges)		60,037.11
		<u>\$274,939.33</u>

SUMMARY OF PROJECTS COMPLETED AUGUST, 1919, TO
DECEMBER 31, 1922

	No. of Projects	Contract Price
A. Improvement Projects	5	\$1,112,067.01
B. Other Street Improvements	1	7,618.25
C. Highway Projects	2	533,598.94
D. Bridges Completed	5	86,172.57
E. Miscellaneous Projects	8	75,735.46
F. Projects completed by Road Depart- ment Forces	13	274,939.33
Total		<u>\$2,090,131.56</u>

Work Under Contract. On December 31, 1922, there were eight (8) projects under contract, the contract prices, specified dates of completion and percentage complete being as follows:

TABLE SHOWING IMPROVEMENTS UNDER CONTRACT DECEMBER 31, 1922
 IMPROVEMENT PROJECTS UNDERTAKEN UNDER PROVISIONS OF IMPROVEMENT STATUTES

Improvement	Date Contract Signed	Contract Price	Percent Complete Dec. 31	Date to be completed
Improvement District No. 8—Puunui.....	Aug. 25, 1922	\$405,452.00	21.2	Dec. 31, 1923
Improv't Dist. No. 10, Bingham Park Tract (Contract awarded Dec. 28, 1922)		94,339.00	0.0	June, 1923
Frontage Imprvt. No. 18—King St., Alapai Street to Punahou St.	Dec. 27, 1922	194,677.00	12.8	June, 1923
		\$694,518.00	16.0	
B. HIGHWAY PROJECTS.				
Waimanalo Road 2nd Unit	Feb. 4, 1922	\$566,571.83	34.9	June 30, 1924
Kamehameha Highway, 2nd Unit— Section One	Dec. 10, 1921	407,337.45	80.0	June 30, 1923
Section Two	May 6, 1922	127,432.85	37.0	June 30, 1923
		\$1,101,342.13	46.5	
C. BRIDGES.				
Ukoa Bridge	July 27, 1922	\$18,856.00	15.0	February, 1923
D. MISCELLANEOUS PROJECTS.				
Kewalo Storm Drain		\$66,900.00	Not started	Sept., 1923

To be awarded and signed early in January

SUMMARY OF PROJECTS UNDER CONTRACT DECEMBER 31,
1922, SHOWING PERCENT COMPLETE

	Contract Price	% Complete Dec. 31, 1922
A. Improvement Projects	\$694,518.00	16.0
B. Highway Projects	1,101,342.13	46.5
C. Bridge Projects	18,856.00	15.0
D. Miscellaneous Projects	66,900.00	0.0
	\$1,881,616.13	33.0

The above figures do not include cost of acquiring land or cost of engineering, which can only be estimated at this time.

Proposed Work for which Plans are Complete or about to be Completed. On December 31, 1922, the Department was calling for bids on three (3) improvements and working upon plans and specifications for six (6) projects.

Their estimated value and present status are as follows:

TABLE SHOWING STATUS OF PROJECTS FOR WHICH CONTRACTS SHOULD BE LET DURING 1923

A. IMPROVEMENTS UNDER IMPROVEMENT STATUTES.

Project	Total Estimated Cost	Present Status	Probable Time of Completion	Remarks
Improvement District No. 10—Kaimuki District	\$1,737,505.00	Plans 80% complete	Dec. 1925	
Improvement District No. 12—Punchbowl and Miller Streets	113,066.88	Bids to be received Feb. 9, 1923	Sept. 1923	
	<hr/> \$1,850,571.88			

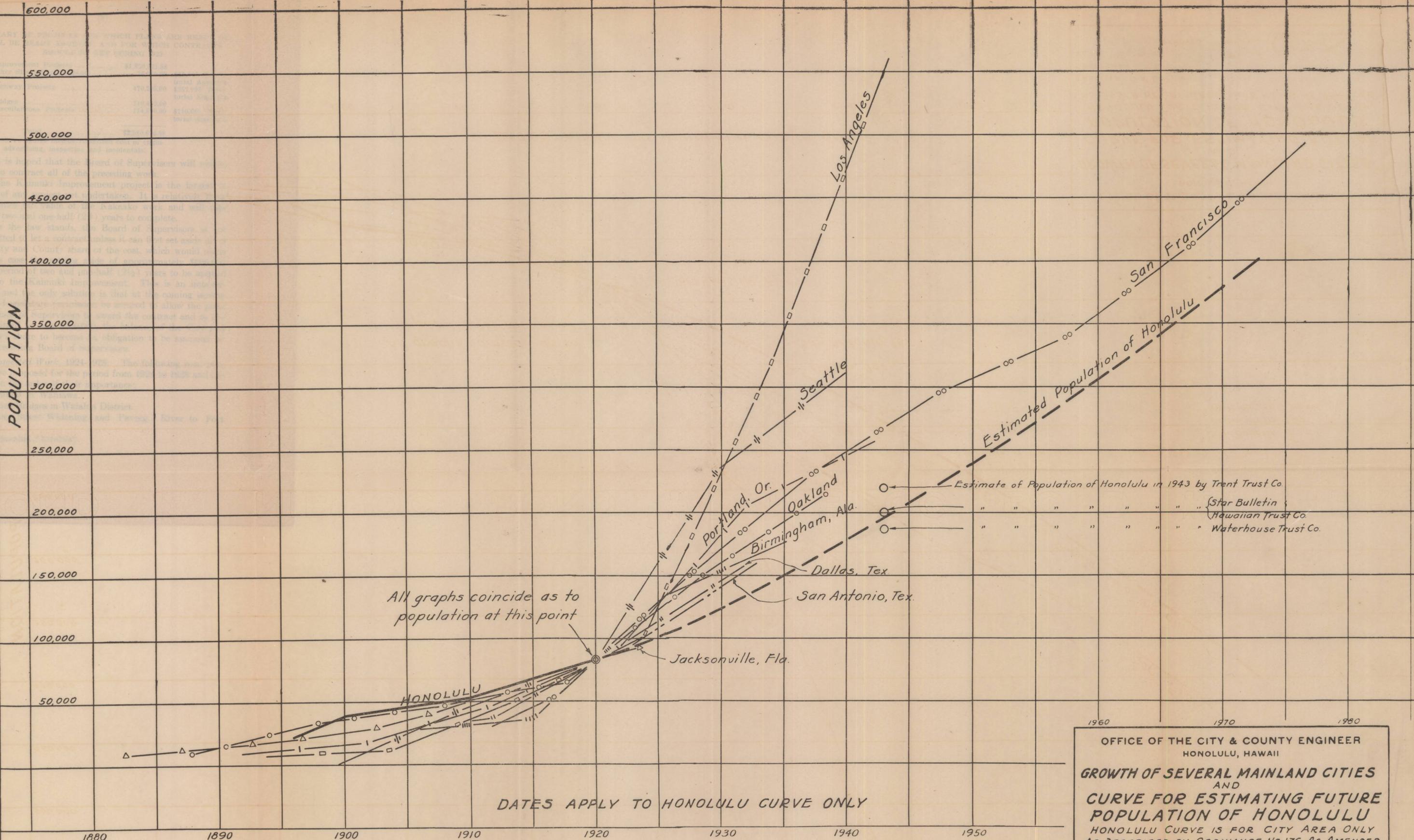
B. OTHER STREET IMPROVEMENTS.

Alewa Heights Lots, 2nd Series*	35,000.00	Plans completed early in 1922	Sept. 1922	Water mains must be installed before street improvements are made.
*Territorial appropriation, Engineer's estimate, \$45,000.00.				
Kamehameha Highway, Puuloa to Red Hill	77,705.00	Bids will be received for this job Jan. 5th.	Oct. 1923	Cost given is amount of low bid plus engineering
Realignment of Kamehameha Highway at Hairpin Turn at Waialua	17,000.00	Plans 90% complete		

TABLE SHOWING STATUS OF PROJECTS FOR WHICH CONTRACTS SHOULD BE LET DURING 1923 --Continued.

Project	Total Estimated Cost	Present Status	Probable Time of Completion	Remarks
Waianae Road*	200,000.00	Plans completed in November	Feb. 1924	No bonds sold for this job yet Money allotted by Gov'r for this job from bond sales Present territorial appropriation of \$7995.00 insufficient
Pali Road*	150,000.00	Plans 90% complete	Dec. 1923	
Palolo Belt Road	25,500.00	Plans completed in 1919	Depends on Legislature	
	<u>\$470,205.00</u>			
D. BRIDGES.				
King Street Bridge	80,000.00	Plans 95% complete	Dec. 31, 1923	Cost given is amount of low bid submitted Jan. 3rd, 1923, plus engineer's
Kipapa Bridge and Approaches	30,400.00	Bids to be received Jan 3rd, 1923	July 1923	
	<u>\$110,400.00</u>			
E. MISCELLANEOUS IMPROVEMENTS.				
Improvement	Estimated Cost	Status on Dec. 31, 1922		Remarks
Waipahu Sewers*	110,000.00	Bids to be received Jan. 30, 1923		Cost given is amount of territorial appropriation. Money allotted by Gov. for this job from bond sales.
Kaneohe Courthouse Approach	4,500.00	Plans 95% complete		
	<u>\$114,500.00</u>			

*Territorial Appropriation.



All graphs coincide as to population at this point

DATES APPLY TO HONOLULU CURVE ONLY

1960 1970 1980

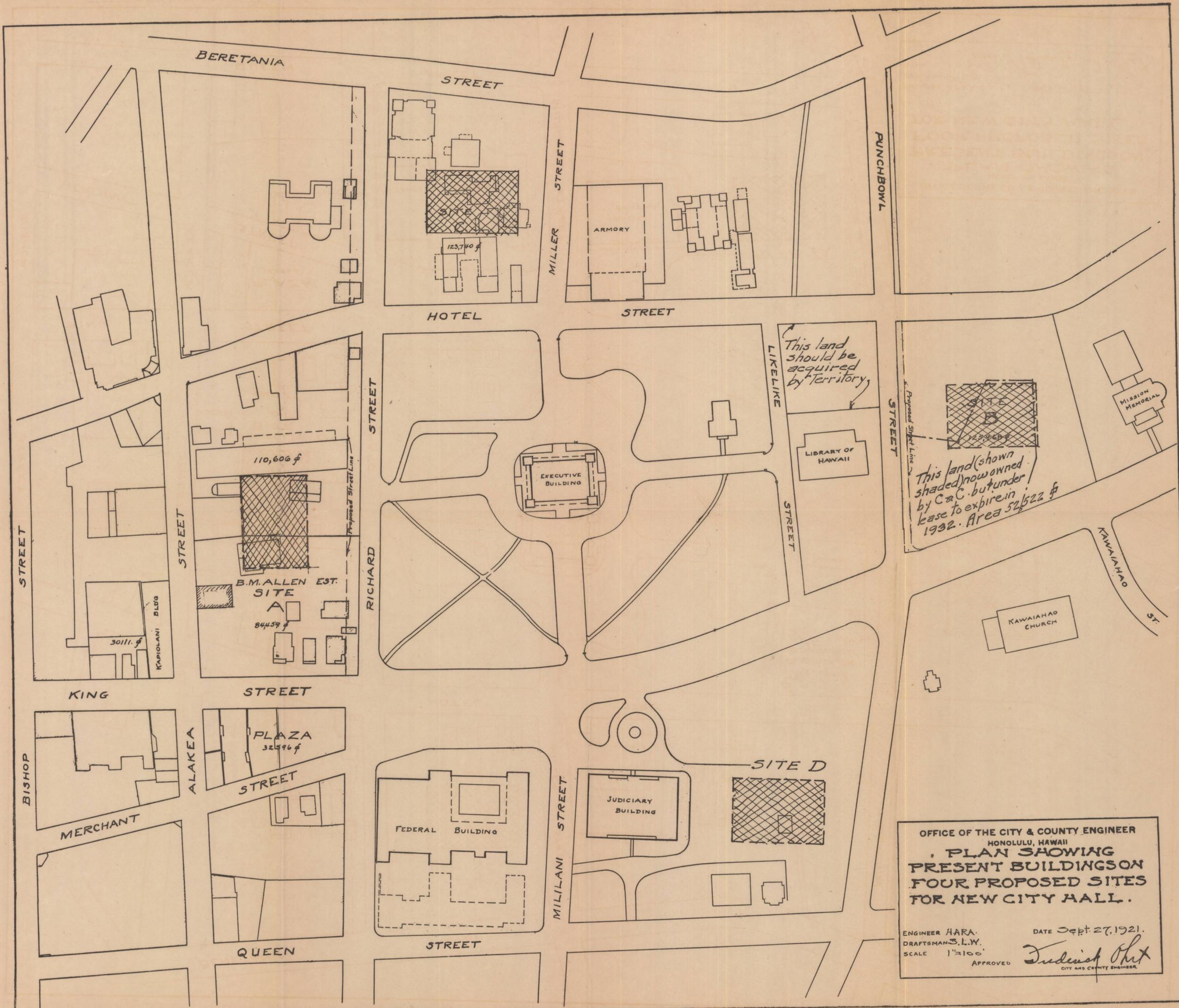
OFFICE OF THE CITY & COUNTY ENGINEER
HONOLULU, HAWAII

**GROWTH OF SEVERAL MAINLAND CITIES
AND
CURVE FOR ESTIMATING FUTURE
POPULATION OF HONOLULU**

HONOLULU CURVE IS FOR CITY AREA ONLY
AS DESCRIBED BY ORDINANCE NO. 176 AS AMENDED

ENGINEER G.K. Larrison DATE December 30, 1922
DRAFTSMAN E.K.T.P.
SCALE As Shown

APPROVED: *Fred P. ...*
CITY AND COUNTY ENGINEER



OFFICE OF THE CITY & COUNTY ENGINEER
 HONOLULU, HAWAII
**PLAN SHOWING
 PRESENT BUILDINGS ON
 FOUR PROPOSED SITES
 FOR NEW CITY HALL.**

ENGINEER HARA.
 DRAFTSMAN S.L.W.
 SCALE 1"=100'

DATE Sept. 27, 1921.
Judith Pitt
 APPROVED
 CITY AND COUNTY ENGINEER

SUMMARY OF PROJECTS FOR WHICH PLANS ARE READY OR
WILL BE READY SHORTLY, AND FOR WHICH CONTRACTS
SHOULD BE LET DURING 1923

A. Improvement Projects	\$1,850,571.88	
B. Other Street Improvements	35,000.00	\$35,000 Terri- torial Approp'n.
C. Highway Projects	470,205.00	\$357,995 Terri- torial Approp'n.
D. Bridges	110,400.00	
E. Miscellaneous Projects	114,500.00	\$110,000 Terri- torial Approp'n.
Total.....	\$2,580,676.88	

The above figures include estimated cost of engineering, advertising, inspection and incidentals.

It is hoped that the Board of Supervisors will undertake to contract all of the preceding work.

The Kaimuki Improvement project is the largest in value of any project yet undertaken. It is relatively three (3) times the value of the Kakaako work and will take about two and one-half (2½) years to complete.

As the law stands, the Board of Supervisors is not permitted to let a contract unless it can first set aside all of the City and County share of the cost, which would mean in this case the setting aside of approximately \$600,000 for a period of two and one-half (2½) years to be applied only to the Kaimuki Improvement. This is an impossibility, and the only solution is that at the coming session of the Legislature permission be secured to allow the present Board of Supervisors to award the contract and to obligate itself to only \$200,000, the balance of the City and County's share to become an obligation to be assumed by the succeeding Board of Supervisors.

Suggested Work, 1924-1928. The following road projects are proposed for the period from 1924 to 1928 and are listed in the order of their importance:

Bridges in Wahiawa.

Three Bridges in Waiialua District.

King Street Widening and Paving. River to Fort Shafter.

Moanalua Causeway.

Queen Street Extension from King to Liliha.

Extension and Paving of Bethel Street.

Widening, Extension and Paving of Bishop Street.

Purchase of corner at South Street and King Street to control entrance to Kapiolani Boulevard.

Kalakaua Avenue Extension King to Beretania.

Widening and Paving of Liliha Street, King to Judd Street.

Paving of Ala Moana to Beach.

Diamond Head Boulevard with proper retaining walls Kapiolani Boulevard South to Kalakaua Avenue.

Waianae Road, Waimanalo, Kamehameha Highway.

Paving Manca Hill and Judd Street Hill.

Set Back Lines. Since August, 1919, this Department has made a number of surveys, descriptions and prepared ordinances establishing set-back lines on several streets.

Under these ordinances, building permits are issued only on conditions that the new buildings are constructed back of the new street lines.

The ordinances and their numbers are as follows.

Nuuanu Avenue from Beretania Street to School Street—Ordinance No. 156.

Beretania Street—Nuuanu Avenue to Alapai Street—Ordinance No. 167.

Emma Street—Lusitania Street to Nuuanu Avenue—Ordinance No. 174.

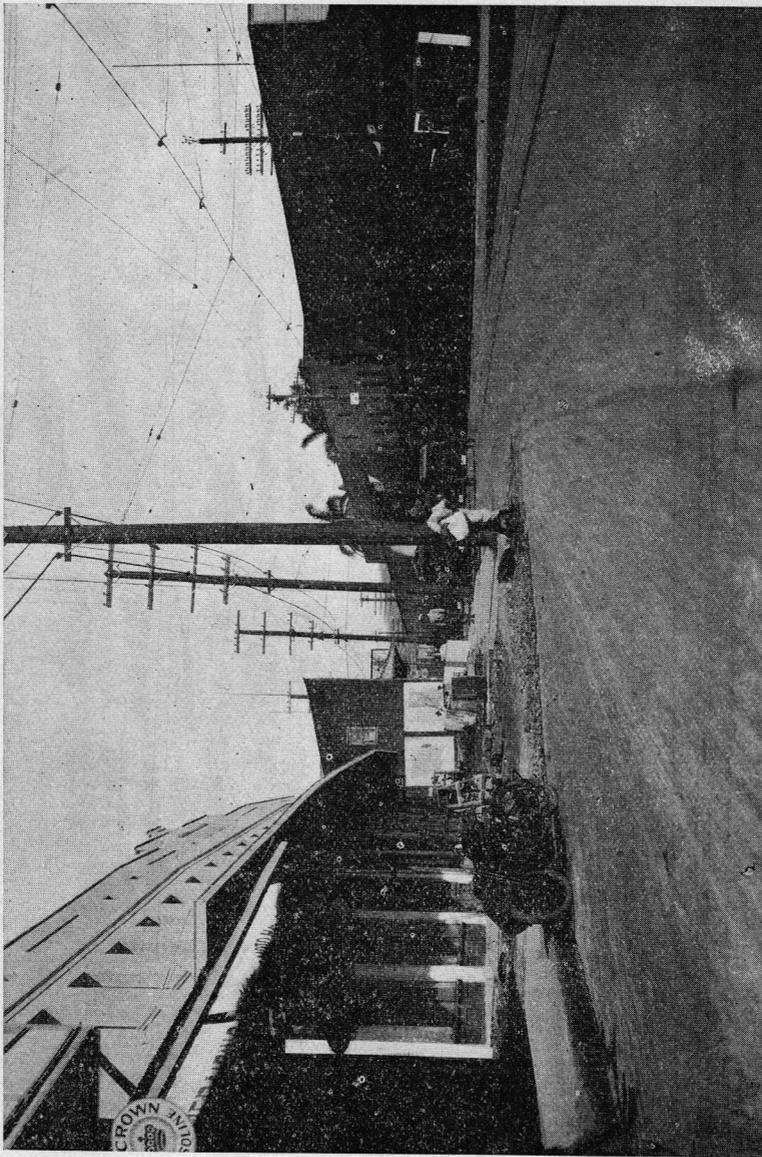
Queen Street—Fort Street to Keawe Street—Ordinance No. 189.

Kapiolani Boulevard—King Street to Kalakaua Avenue—Ordinance No. 191.

Hart Avenue—Puuhale Road to shore line of Kalihi Bay—Ordinance No. 193.

King Street—Junction of North King Street and Beretania Street to the Moanalua—Kahauiki Boundary—Ordinance No. 218.

Liliha Street—King Street to Judd Street—(This Ordinance prepared but has not been submitted to the Board of Supervisors up to the present time).



King Street Set Back Line, at Junction with Beretania Street

New Sub-Divisions. During the period covered by this report several new sub-divisions of property have been made, the most important being the Diamond Head Terrace and the Bingham Park Tract, the specifications for which were approved by this Department. There were also several other residential tracts in preparation to be placed upon the market, submitted to this Department for approval as to width of streets and pavements, which, in our opinion, were inadequate. These were disapproved. However, these properties were placed upon the market in direct violation of Ordinances 85 and 97 covering sub-divisions.

At present the requirements of these ordinances as applying to types of paving make it difficult for Real Estate holders to secure what they consider an adequate percentage return on lots if expensive pavements, proper street widths and the installation of utilities are insisted upon.

In the opinion of this Department, proper width of streets and the installation of utilities are of more community importance than the expensive type of pavement, and it is suggested that an ordinance be drafted that will satisfactorily meet conditions all around.

Eighty and seventy feet rights-of-way, properly graded, drained, curbed, guttered, with the installation of all water pipes should be compulsory, except in special instances where the streets cannot be extended, and the pavement modified as to type and cost, according to the local conditions of the street.

The cost to the City and County of acquiring, at some future time, land for street widening purposes, or draining after a tract is developed, would be many times greater than the cost of the initial paving. As an illustration, it cost the City and County \$49,707.50 to acquire the necessary land to widen Hotel Street between Union and Fort Streets, while the actual cost of the construction of the pavement was \$243.91.

Kamehameha Highway. If this main highway is of sufficient importance to warrant its completion within the next few years, serious consideration must be given to the problem of financing it.

In 1917 the first issue of half a million dollars' worth of bonds was authorized by the Legislature. In 1919 the second issue of half a million was authorized by the same body, both issues stipulating concrete construction.

The construction under these issues extends from the Waimanalo Junction to and including the Waiahole Bridge, a distance of 10.9 miles, the final two miles of which will be completed by June 30, 1923.

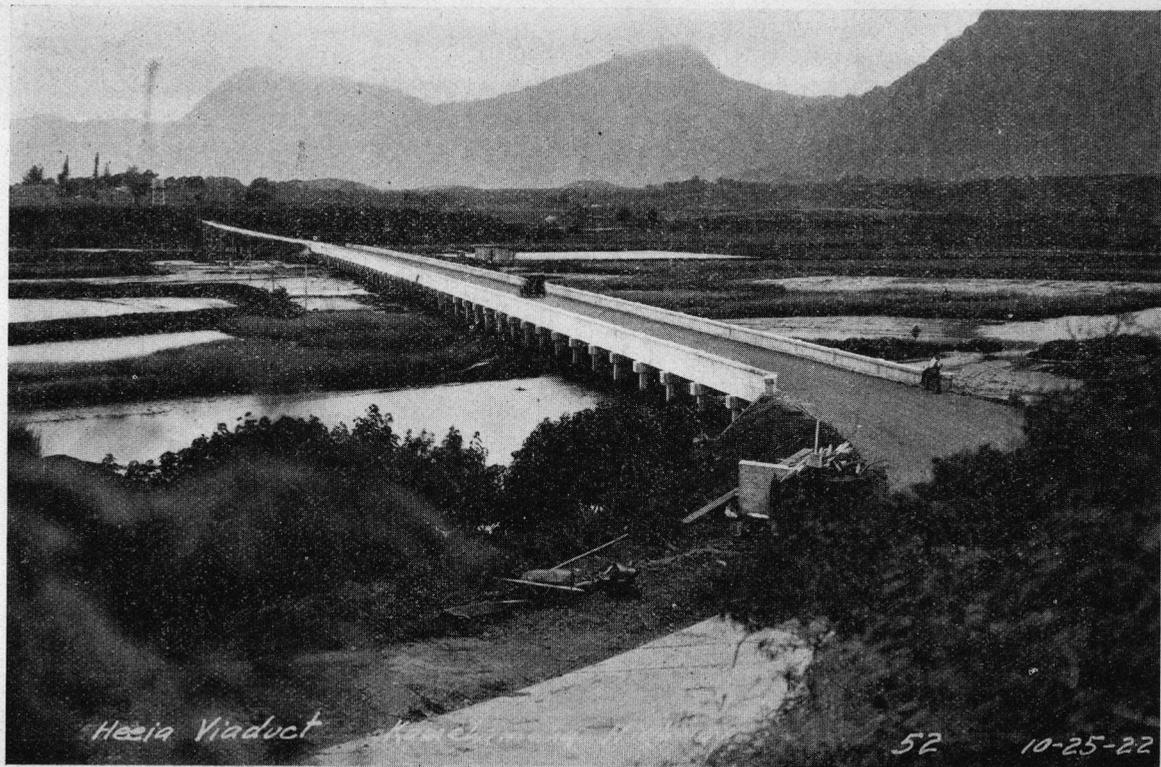
There still remains a stretch of 32 miles of coral and sand road on this highway, from the northern end of the Waiahole Bridge to Haleiwa.

Based upon the rate of progress of the work, the cost per mile and the present scheme of financing the completed section, it will take approximately eighteen (18) years and \$3,000,000 to permanently pave with concrete the section from Waiahole to Haleiwa.

It is not reasonable to suppose that the community will be willing to wait eighteen years, nor is it reasonable to suppose that the Legislature at this time will make a special appropriation of \$3,000,000 for a concrete pavement.

There are approximately 19 miles of coral road that would act as a splendid base for an asphalt macadam pavement. The remaining 13 miles of sand and dirt road could be graded and paved with coral and later with asphalt macadam. If this were done, the section from Waiahole to Haleiwa would be in the same class as from Haleiwa to Honolulu.

This would make it possible to reduce the time consumed in construction from eighteen years to approximately four or five years and the cost of construction from approximately \$3,000,000.00 for concrete paving to \$1,500,000.00



Heeia Viaduct, Kamehameha Highway
(Constructed by E. J. Lord)

for an asphalt macadam road on a coral base. It has been demonstrated that the latter type of construction is adequate and will reduce the cost of maintenance.

In the face of the already authorized bond issue it is not possible to ask the Legislature for another issue that could become available before 1926. Therefore, two solutions are suggested:

(1). The bond issue method, which is to ask the Legislature to make the necessary amendments in the various laws that would enable the Board of Supervisors to place before the people, for their voted approval, the \$1,500,000.00 special issue for the construction of the Belt Road from Waiahole to Haleiwa.

(2). The pay-as-you-go method, which would require asking the Legislature to amend Act 177, S. L. 1919 specifying concrete or a concrete base for road improvements, and to permit of the use of the Permanent Improvement fund for asphalt macadam construction, provided the same is recommended by the City and County Engineer.

Completed Sections Kamehameha Highway

At various places on this highway between Haleiwa and Moanalua the width of the road has been increased and the shoulders extended.

In Kaukonahua Gulch retaining walls were constructed and in Waikakalaua and Kipapa Gulches large cuts were made that have eliminated several dangerous curves. Curves have been materially widened at Aiea and Halawa.

Thanks are due to Major General C. G. Morton, Major General C. P. Summerall and Rear Admiral Edward Simpson for their co-operation in the lending of equipment materially expedited the work in cuts and on the construction of the Puuloa Road.

In addition to the completion of the road around the Island, there will still be a demand for the extension and completion of the following projects:

	Estimated Cost
Extension Waimanalo Road from Mill to Beach Lots.....	\$100,000.00
Kailua Road Extension	130,000.00
Extension Waianae Road to Waianae	500,000.00
Total.....	\$730,000.00

It does not appear to me that traffic upon these roads justifies these expenditures in the immediate future.

Palola Belt Road. Act 130 S. L. 1917 and Act 35 S. L. 1919, appropriated a total of \$7,995.00 for the completion of the Palolo Belt Road.

At the request of the Commissioner of Public Lands plans were prepared for 5,200 lineal feet of gravel road with a telford base. The only bid received, when proposals were opened on February 17, 1920, was for the sum of \$25,500.00 and was rejected for lack of funds. As the Territorial Appropriation could only be spent on the completion of the entire work, and as the Board of Supervisors were not inclined to appropriate sufficient funds to finish the entire project, nothing has been done. The funds on hand for the project are still available and should be lapsed or additional funds appropriated to let the entire contract.

Alewa Heights Lots, Second Sub-Division. In 1921 the Legislature appropriated \$35,000.00 for streets within this tract. Plans were completed early in 1922, but the law provides that water mains shall be constructed before pavement construction starts, and as sufficient funds were not available in the treasury of the Territory for this project at that time, bids were not called for. Nothing has been done on the project but the plans are ready so that at any time that the water mains are constructed and money is available, bids can be advertised for this project. The Act appropriating the money should be amended to provide sufficient funds to allow the water mains being installed at the same time that the street improvements are made.

Bridges. During the period covered by this report de-

signs were prepared and contracts let for the construction of the following bridges:

Laimi Bridge	Jan., 1921	\$7,869.85
Hastings and Dominis	Jan., 1921	3,765.25
Anahulu	July, 1921	71,383.47
Bridges in Kamehameha and Waimanalo		
Bridges in Kamehameha and	June, 1922	112,460.00
Waimanalo Contracts	June, 1922	76,604.75

On December 31, 1922, one bridge was under contract.

Ukoa Bridge.....	February, 1923	\$18,856.00
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At the request of the Commissioner of Public Lands prepared for the construction of the King Street bridge across Nuuanu Stream at an estimated cost of \$80,000.00. The present bridge is in a very dangerous condition and the new bridge should be constructed at the earliest possible date.

Damage to Bridges, January Storm, 1921. On the morning of 16th of January, 1921, a rainfall, the heaviest in approximately twenty years, caused all the small streams on the Island to rise and a large amount of damage was done to roads and bridges all over the Island.

A wooden bridge above Kaneohe was carried out and the debris lodged in back of the new concrete bridge. Scour under the center pier of this bridge caused it to drop six feet and turn on its vertical axis about 30 degrees from its position. The two concrete bridge spans were in no way damaged and were raised on a new center pier at a cost of \$10,000.00.

Other bridges washed out by this same storm were the Maunawili Bridge; Woodlawn Bridge, Manoa; Waialele Bridge, Kalihi; and a small 20 foot wooden bridge in Upper Manoa Valley. Besides the damage to these, one abutment of the Kahaluu Bridge settled about two feet, one abutment was washed out from under the Malamalama Bridge in Koolaupoko and Shingle Bridge in Manoa Valley and one parapet wall of the Waiawa Bridge was broken off.

Temporary foot bridges were immediately built at the sites of the Woodlawn and Waialele Bridges and by the end of February, these two bridges were replaced at a cost of about \$7,500.00. In both cases a larger waterway under the bridges was provided.

The Waiawa Bridge and approaches were temporarily repaired at a cost of \$2,500.00. The opening under the present bridge is entirely too small for heavy storm waters.

Need For a Bridge Department. Because of the increased amount of work for bridges on this Island, it will be necessary to establish a Bridge Department, under the City Engineer, in the near future. During the period of this report thirty-five (35) bridge plans have been prepared and most of them constructed.

Sidewalks. Honolulu may well be termed a City limited in and of limited sidewalks for the reason that with the exception of one or two Improvement Districts, many sections of the City are without sidewalks, and in districts where sidewalks occasionally occur, they are so limited in width as to be practically of no use.

Much has been said about enforcing the sidewalk ordinance. Under the law this is impossible until the City establishes by ordinance, permanent lines and grades. The only sections in the City where permanent lines and grades have been established are those in the recent Improvement Districts. Too much cannot be said in favor of solving this sidewalk problem.

Miscellaneous Work. In addition to the Improvements listed above, this Department prepared Preliminary Engineer's Reports on the widening and paving of Richards Street, extension of Bethel Street and the Extension of Bishop Street.

The first of these improvements was dropped for lack of funds; the Attorney's Department has instituted condemnation proceedings for the acquisition of the land for the second project and a second report on the widening and



Improper Street Alignment, Nuuanu Street, below Pauahi Street—Due to lack of permanent line and grade plans.

extension of Bishop Street from Allen Street to Beretania Street, based on a street width of seventy feet instead of sixty feet, as first contemplated, has been prepared and will be submitted to the Board of Supervisors in the near future.

During the period covered by this report, this Department has also checked a large number of Land Court Applications insofar as they affect the interests of the City and County; furnished grades and lines for the Honolulu Rapid Transit Company and checked up their designs for the construction of new extensions and relocations in the Kakaako Improvement District, on King Street, from Alapai Street to McCully Street and King Street from the Palama Fire Station to the Kamehameha Schools on Nuuanu Street and on Keamoku Street; have made a large number of miscellaneous surveys and descriptions and furnished grades and lines for much of the construction work done by the Road Department.

City Plan. Honolulu has reached the stage where a City Plan is absolutely essential to its future development along proper lines for the greatest benefit to the entire community.

In the very nature of a plan is found the ultimate attainment of economy and efficiency in construction of any sort and the day is past when anyone of intelligence will attempt construction in any form without a plan. This should be more profoundly true of the City for the reason that the duty of the City is to provide its citizens with fire and police protection, with lights—in the interest of safety and mortality, drainage and sewers—in the interest of health, water and school facilities.

In caring for these provisions, STREETS ARE PRIMARILY ESSENTIAL. Since all community necessities are paid for by the tax payer, the criminal practice of City Governments waiting until a community has developed along haphazard lines to point where it is necessary to straighten out problems at greatly increased expense to the

tax payer, must and can only be corrected, and eventually eradicated, by a plan that will from the first guide the installation of these necessities and thereby attain a large measure of economy in the final cost.

Honolulu has its glaring examples of unregulated street layouts, building lines and buildings; of instances of land development exploited to yield the last penny to its promoters regardless of public welfare; of community eyesores; streets made over, whole sections changed because too long has it been allowed to develop without the guidance of a plan.

Now is the time to formulate and finance a plan that will give to Honolulu of the future the advantage that can only be acquired by this method.

In the first analysis, a City thus developed affords for its citizens the highest standards for safety, health, education and general welfare.

An expenditure of \$25,000 a year for two (2) or three (3) years will enable a properly qualified staff to study conditions and prepare a plan that could be officially adopted to meet the present and future needs of Honolulu, and go far towards modifying the tax burden of the future.

Honolulu must have, and some day will have a plan, and the sooner it is made the less it will cost and the sooner it will become effective.

PART 3. ROAD DEPARTMENT

There has been a remarkable and steady increase in the work of this Department. Some of this increase can be grasped by a glance at the population and building statistics.

The total expenditures for maintenance and new reconstruction work in each district, not covered by contracts, for the past two years, are shown in the following table:

District	1921	1922
Honolulu	\$253,040.99	\$275,497.53
Ewa	67,123.83	77,449.12
Waianae	19,167.62	19,105.07
Wahiawa	12,601.00	20,971.78
Waialua	24,442.93	32,921.09
Koolauloa	24,068.87	30,290.78
Koolaupoko	39,911.05	29,484.93
Kailua-Waimanalo	4,005.16	6,045.74
Total	\$444,361.45	\$491,755.04

Street Openings. On October 11, 1921, Ordinance No. 202, regulating the digging of trenches in paved streets was passed, and with the requirements now in force it has been possible to keep in closer touch with the openings of these trenches, but there is much to be said about the backfilling of trenches by those permitted to open them. It is

TABLE SHOWING NUMBER OF PERMITS ISSUED DURING 1922
FOR STREET OPENINGS WITH AREA

Public Utility	Number of per- mits issued	Area of trenches covered by per- mits square yards	Area of street paved square yards	Repair Charges
Honolulu Gas Co., Ltd.....	362	4,104.5	1,265.0	\$2,671.59
Honolulu Water and Sewer Department	438	10,876.5	1,176.5	2,816.92
Mutual Telephone Co.	14	77.5	21.0	63.76
Miscellaneous	26	1,462.5	35.0	87.39
Totals	840	16,521.0	2,497.5	\$5,639.66

seldom done in a manner to properly support, for any time, the pavement afterwards laid by this department. In almost every case, "settling" occurs, which makes it necessary to frequently repave.

The only remedy is to amend the ordinance which now specifies that the private corporation or public department shall backfill their trenches and by amendment place the backfilling, as well as the paving, in the hands of properly

trained gangs under the supervision of the Road Department, the expenses to be borne by the Utility making the trench.

Maintenance Engineer. In my opinion, the annual expenditure of funds in maintenance work has reached the point that merits a maintenance Engineer, under the control of the City Engineer.

To maintain roads economically in a first class condition, the maintenance must be systematic and continuous. Systematizing the work requires a careful study of all activities in the field and the relation of one to the other.

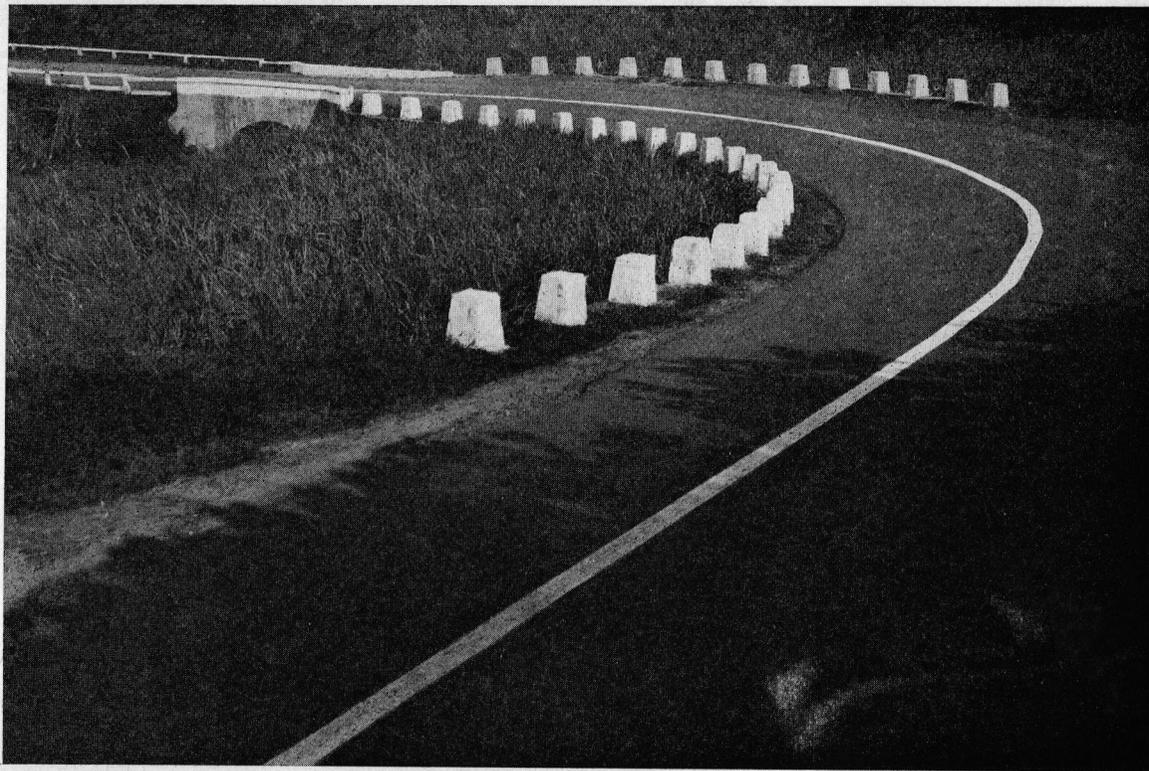
A maintenance engineer's principal concentration would be upon systematizing and economizing. He would be at all times in control of all field work, whether in or out of the City. He would be in control and direct touch with the road overseer or maintenance foreman in each district. He would insist upon and secure the proper patrolling of each section of the road. Previous to important improvements in any certain section, he would establish lines and grades. He would keep a careful check upon the various equipment throughout the Island .

PART 4

Municipal Garage and Machine Shop

During the period covered by this report, the Board of Supervisors have appropriated the sum of \$49,595.00 for the garage site, itemized as follows:

Purchase Ernest Machado Lot	\$ 8,000.00
Purchase J. S. Bailey Lot	6,000.00
Grading Garage	12,000.00
Contract New Storage Garage	23,595.00
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Total	\$ 49,595.00



Halawa Curve, Showing Type of Reconstruction on Curves—Kamehameha Highway

The Board of Supervisors authorized the purchase of the following new motor equipment, itemized as follows:

TABLE SHOWING YEAR OF PURCHASE AND COST OF AUTOMOBILES AND TRUCKS FOR THE CITY AND COUNTY OF HONOLULU

New No.	Make	Year Purchased	Price	Department
269	Ford	1919	\$ 560.00	Garbage
233	Federal	1919	3,750.00	Road
252	Ford	1919	838.93	Engineer
253	Ford	1919	838.93	Engineer
203	Ford	1919	975.00	Police
251	Chevrolet	1919	975.00	Engineer
294	Ford	1919	701.93	Bldg. Inspector
254	Chevrolet	1920	995.00	Engineer
235	Federal	1920	4,100.00	Road
283	Chevrolet	1920	1,010.00	Juvenile Court
200	Cadillac	1920	4,595.00	Mayor
271	Mack	1920	5,600.00	Garbage
261	Buick	1920	1,975.00	Electric Light
264	Ford	1920	750.00	Electric Light
236	Federal	1920	4,100.00	Road
272	Moreland	1920	4,775.00	Garbage
273	Moreland	1920	4,775.00	Garbage
230	Packard	1920	7,500.00	Road
231	Packard	1920	7,500.00	Road
238	Klieber	1920	3,055.00	Road
239	Doane	1920	4,200.00	Road
224	Denby	1920	3,800.00	Parks and Playgrounds
289	Studebaker	1921	1,825.00	Treasury
255	Ford	1921	672.52	Engineer
206	Buick	1921	2,375.00	Police
265	Denby	1921	2,895.00	Electric Light
217	Ford	1921	1,204.87	Water Works
241	Federal	1921	4,100.00	Road
274	Moreland	1921	4,675.00	Garbage
275	Moreland	1921	4,675.00	Garbage
288	Buick	1921	2,050.00	Attorney
242	Ford	1921	984.84	Road
282	Ford	1921	705.97	Juvenile Court
284	Ford	1921	679.52	Juvenile Court
285	Ford	1921	679.52	Juvenile Court
293	Dodge	1921	1,745.00	Bldg. Inspector
220	Ford	1922	740.00	Water Works
243	Packard	1922	6,400.00	Road
244	Packard	1922	6,400.00	Road

207	Dodge	1922	1,240.00	Police
219	Studebaker	1922	1,325.00	Water Works
268	Elgin	1922	8,500.00	Garbage
205	Essex	1922	1,445.00	Police
276	Moreland	1922	4,632.50	Garbage
277	Moreland	1922	4,632.50	Garbage
228	Packard	1922	6,300.00	Road
232	Packard	1922	6,300.00	Road
256	Ford	1922	650.00	Engineer
295	Ford	1922	641.29	Bldg. Inspector
245	Packard	1922	6,300.00	Road
Total			\$152,143.32	

The total number of motor vehicles now owned by the City and County is seventy-eight (78), and their gross valuation without depreciation is \$203,277.80.

TABLE SHOWING NUMBER OF CARS IN EACH DEPARTMENT OF THE CITY AND COUNTY, AND THEIR TOTAL VALUE WITHOUT DEPRECIATION

Department	No. Cars	Total	
			First Cost
Shop	2	\$	2,025.00
Attorneys	1		2,025.00
Building Inspector	3		3,088.22
Engineers	6		4,970.38
Electric Light	5		7,365.42
Garbage	10		45,178.00
Mayor's	1		4,595.00
Parks	2		4,900.00
Police	7		16,644.35
Probation Officer	4		3,075.01
Road	21		94,315.84
Treasurer	1		1,825.00
Water and Sewer	12		9,770.58
Municipal Market	3		3,500.00
Total	78		\$203,277.80

