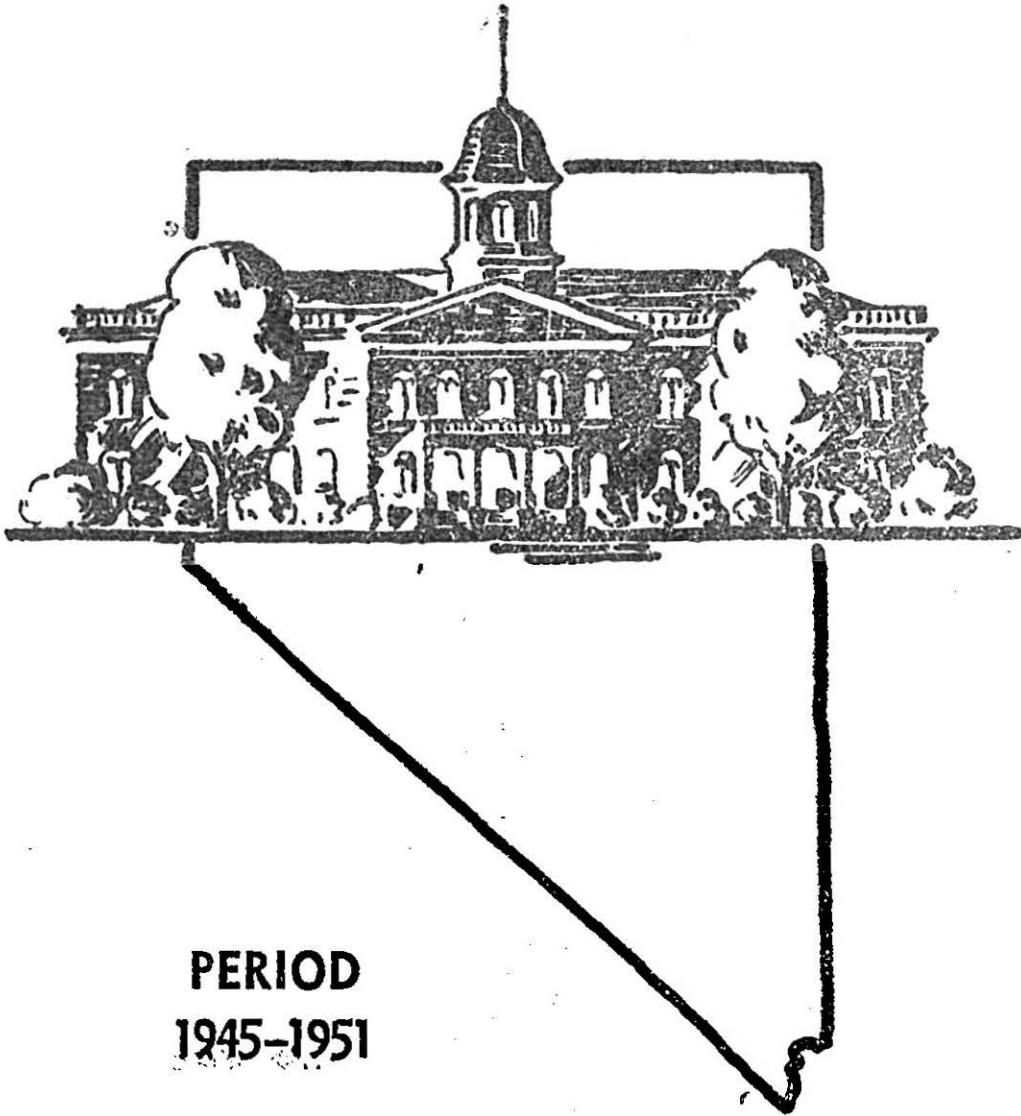


A SIX-YEAR PLAN
for the
**ECONOMIC AND SOCIAL
DEVELOPMENT OF THE
STATE OF NEVADA**



PERIOD
1945-1951

Nevada State Planning Board
Carson City, Nevada

A SIX-YEAR PLAN

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The planning, as represented in the efforts of the State Planning Board, is not in the sense of centralized operative decisions by the State or any of its departments. It is merely a gathering together from the people of those things that the people, through their duly elected representatives, might want to study and place in operation for their good. We who plan for the benefit of the State will be satisfied in our planning efforts if our people use any part or portion of our work for the more effective use of the human and material resources of the State.

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LETTER OF TRANSMITTAL

STATE OF NEVADA
OFFICE OF
NEVADA STATE PLANNING BOARD
CARSON CITY, NEVADA

HONORABLE E. P. CARVILLE, *Governor of the State of Nevada, Carson City, Nevada.*

DEAR GOVERNOR CARVILLE: We transmit to you herewith, the revised and streamlined plan for the economic and social development of the State of Nevada, as prepared by the State Planning Board for the period 1945-1951.

You will note that many of the statistical forms, charts and graphs have been deleted, sketches showing new plot plans and new structures have been added and the book made more readable. For those people interested in the statistical data which is now historic, they are respectfully referred to the first report of your State Planning Board.

This report is in conformity with the statutes creating the State Planning Board.

Sincerely,

NEVADA STATE PLANNING BOARD,
ROBERT A. ALLEN, *Chairman.*

LEGISLATIVE ENACTMENT

(The statutory authority and directive for this report are found in Chapter 102, Statutes of Nevada, Approved March 22, 1937)

SEC. 5. It shall be the function and duty of the state planning board:

(a) To make a comprehensive state plan for the economic and social development of the State of Nevada. To this end, it shall conduct research and studies relating to natural resources and to other factors in the progress of the state.

(b) To submit reports and to make recommendations relative to its findings to the governor and the legislature.

(c) To cooperate with other departments and agencies of the state in their planning efforts and to advise and cooperate with municipal, county, and other local planning commissions within the state for the purpose of promoting coordination between the state and the local plans and developments.

SEC. 6. The board is hereby authorized to participate in interstate, regional, and national planning projects for the purpose of conserving and promoting public health and the safety, convenience and general welfare of the people; and through its members or its staff the board is hereby authorized to confer and cooperate with federal officials and with the executive, legislative, or planning authorities of neighboring states and of the counties and municipalities of such states.

The board shall have the power to use all reasonable means to promote public interest in the problems of state planning, and to that end may publish and distribute copies of its reports and may employ other lawful means of publicity and education.

The board is hereby empowered to receive and accept, in the name of the state, grants of money or services to enable it to carry on its work under this act. In general, the board shall have such powers as may be necessary to enable it to fulfill its functions and to carry out the purposes of this act.

FOREWORD

This report is for the consideration of citizens of Nevada and brings to their elective representation a long-range program of public works scheduled in the present order of need and based on the State's anticipated financial ability to pay.

The period of six years is used as giving the maximum benefit of planning within the reasonable limits of prediction. It is necessary that the program be revised biennially, with the first two years of each six-year period being used as the basis for building the current capital budget.

The program may be adjusted and should be revised during each biennium period to meet the then current conditions, and at that time two additional future years should be programmed and included in the new six-year program.

In the developing of the study, due consideration was given to the past records and historic financial study, and tabulation is appended to the report. The tabulation covers a ten-year period of known receipts and commitment of funds beyond a two-year budget. At all times, however, there will be available for direction and guidance the future requirements for public works, and the funds anticipated to meet these requirements.

The report was prepared by the State Planning Board with the assistance of A. M. Mackenzie, Program Technician, and Edward S. Parsons, Architect.

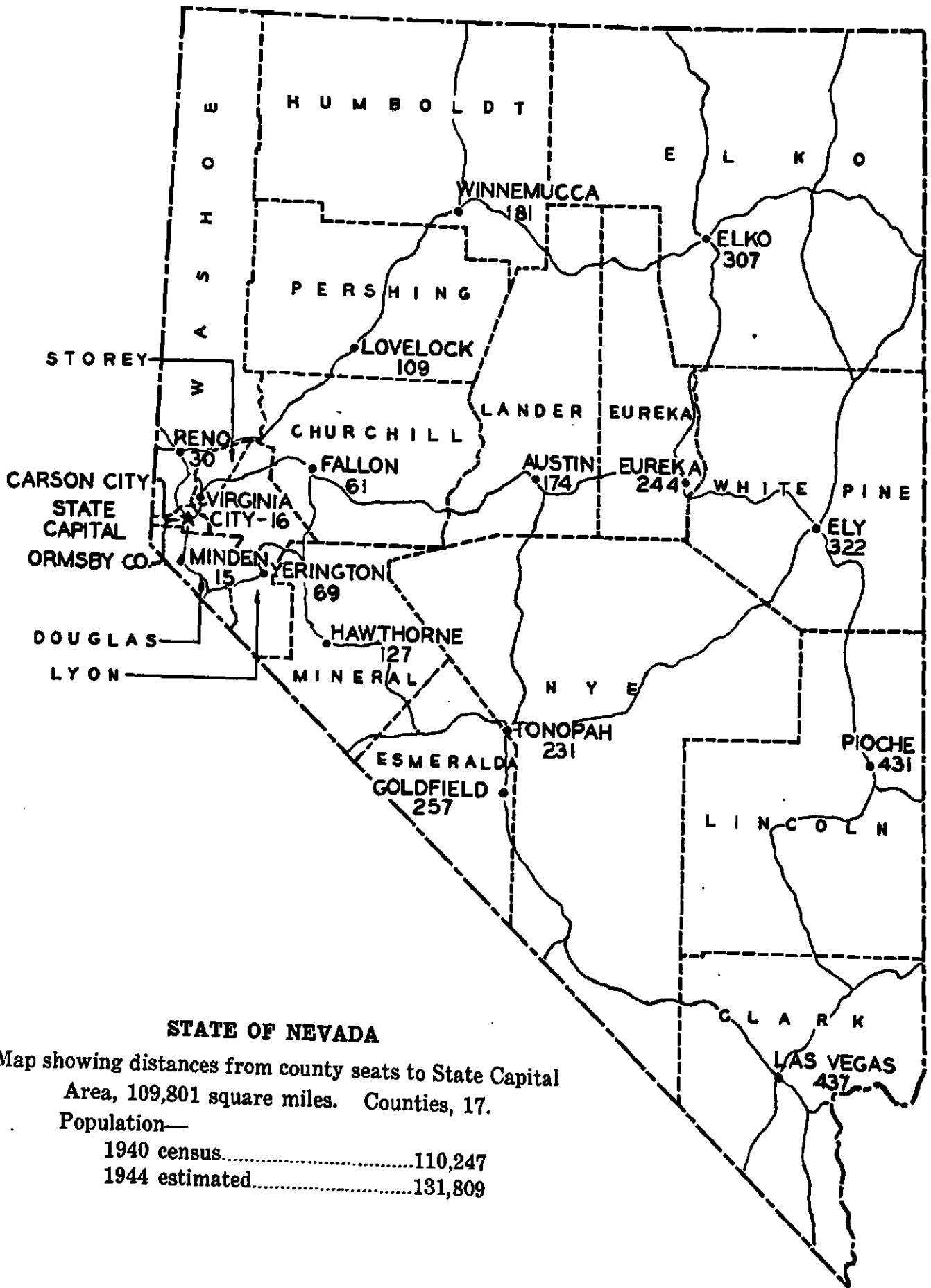
INTRODUCTION

Nevada was admitted to the Union on October 31, 1864, as the so-called Battle-born State. It is best known, however, as the Silver State, because of the immense amount of precious metal it has contributed to the wealth of the Nation.

It views the world through liberty-loving glasses; has always fought for liberty in every channel. It believes in doing the things necessary to preserve this freedom of action without inflicting a financial load on the future generations. Nevada has always planned to keep its government and its people free and able to work for the best interests of this State and the Nation. It realizes that at this time it is necessary to very definitely build a program of postwar activities that will be beneficial to the returning soldiers and give them something to do that will extend into the future the honorable pursuits that they have been carrying on for the Nation.

The State Planning Board advances herewith a plan to provide buildings, roads, reservoirs, and other activities that its members feel will be beneficial not only to the State but to the people of the State. The plan is not haphazard. It has been approached in the same manner by business people, with the thought in mind of getting our people a reasonable and just return for the moneys which will have to be expended to take care of the social adjustment necessary after the war.

Again, the recommendations made are based upon the ability to pay by the government and the people for those things which they need. The Six-Year Program advanced herewith also recognizes the changing times and the resultant changing needs in this program. In other words, it is as flexible and elastic as we can make it at this time. The very nature of the program is such that it can be changed from year to year and kept in tune with the needs of the time.



STATE OF NEVADA

Map showing distances from county seats to State Capital
 Area, 109,801 square miles. Counties, 17.

Population—

1940 census.....	110,247
1944 estimated.....	131,809

SUMMARY OF A SIX-YEAR IMPROVEMENT PROGRAM FOR THE STATE OF NEVADA

ESTIMATED EXPENDITURES FOR THE DIVISIONS OF STATE GOVERNMENT

Division of State Government	ESTIMATED EXPENDITURES			Total six-year period
	1945-1947	1947-1949	1949-1951	
General Government—Capitol Buildings.....	\$293,000	\$486,000	\$61,828	\$840,828
Protection—Persons and Property—				
Nevada National Guard.....	312,700	91,160	37,100	440,960
Health and Sanitation—State Department of Health.....	194,100	.....	50,880	244,980
Development and Conservation of Natural Resources—				
State Engineer.....	1,209,100	20,787,000	.....	21,996,100
State Board of Agriculture—				
Nevada State Agricultural Society.....	15,344	20,000	.....	35,344
Charities—Hospital and Institutions—				
Hospital for Mental Diseases.....	315,500	181,000	216,000	712,500
Orphans' Home.....	3,100	72,000	89,000	164,100
School of Industry.....	27,093	18,000	.....	45,093
Prison	235,000	26,664	.....	261,664
Education—				
University of Nevada.....	1,019,500	780,919	410,513	2,210,932
State Vocational Schools.....	190,000	190,000	.....	380,000
State of Nevada Department of Highways—				
Highway Construction.....	11,576,000	11,576,000	11,576,000	34,728,000
Total Estimated Costs.....	\$15,390,437	\$34,228,743	\$12,441,321	\$62,060,501
Method of Financing—				
General Obligation Bonds.....	\$2,345,985	\$1,240,657	\$834,626	\$4,421,268
General Funds.....	113,637	36,664	14,000	164,301
Outside Funds.....	1,354,815	21,375,422	16,695	22,746,932
Federal Aid (Highway)	9,708,000	9,708,000	9,708,000	29,124,000
State Funds (Highway)	1,868,000	1,868,000	1,868,000	5,604,000
Postwar Reserve .....	.....	.....	.....	.....
Total Funds	\$15,390,437	\$34,228,743	\$12,441,321	\$62,060,501

PREPARATION, JUSTIFICATION, AND FINANCIAL ANALYSIS OF THE SIX-YEAR IMPROVEMENT PROGRAM

PREPARATION OF THE PROGRAM

In April 1941, The Nevada State Planning Board, in cooperation with the National Resources Planning Board, prepared a suggested six-year capital improvement program, together with financial analysis predicated on past and anticipated future expenditures.

It now becomes necessary to revise and adjust the original program; in other words, to bring the program up-to-date and at the same time to program for two additional future years. This should enable the State to coordinate all proposed improvements and additions within the limits of reasonable prediction and at the same time keep pace with growth in an orderly and economic manner.

However, our biggest problem is to save something upon which to plan for the future. Unless we exert every ounce of effort we have to preserve our democracy and, incidentally, our civilization, it

will be of no avail to even think of planning to prevent the postwar depression. It is not to be construed that because of conditions that exist, we should not also plan on the future and ways and means to take care of our own people when they return from the battles of the world. The State itself must do its programming in a way that will permit and offer hearty cooperation with the Federal Government. Rights which have for the moment been surrendered to the winning of the war must be returned to the State and the State must plan for its economic future. A positive program approved by the people looking toward full employment would greatly stabilize private enterprise. A program to improve Capitol buildings, build irrigation reservoirs, roads, develop flood control projects, assist in soil conservation, reforestation, build parks—State, county, and city—all within the State's ability to pay, would assist private enterprise to operate at high output levels and make it a better land.

A well-conceived long-range program of useful and needed projects of the State, which may be prosecuted whenever economic conditions warrant is a step in the right direction, and it is with this thought in mind that the Nevada State Planning Board, after consultation with the Governor, has extended their programming under the "Six-Year Improvement Program."

In the continuation of the program, we have used the biennium 1945-1947 as the basis for the current capital budget. Projects proposed for construction during the years 1943 to 1945 and which, due to the war emergency, were not undertaken, have been scheduled for construction during the next biennium 1945-1947. Two additional years have been added—1949-1951. The program has been revised to meet current conditions.

Since the release of our last report the State Legislature has set up a Postwar Reserve Fund which now totals approximately \$1,500,000; however, as yet, no plan has been approved by the Legislature for the allocation or earmarking of this money. Until this is done, no comprehensive plan entailing the use of these reserve funds can be made.

The method suggested for financing the construction costs of the projects scheduled during the six-year period are as follows:

State government bonds.	Highway funds.
General fund appropriations.	Postwar reserve funds.
Outside funds.	

The procedure for "advanced programming" of the State of Nevada's capital expenditures, as developed in this report, has been prepared by the Nevada State Planning Board at the request of the Governor. The data used was secured from the records of the State government, with the aid and cooperation of its officials and staffs.

In such an undertaking, two elements are involved: one, large requirements will be indicated; two, funds for construction of major additions and improvements to the State's physical plant must be available, and increased revenues for maintenance and operation of expended facilities will be necessary. This, obviously, presents a problem of harmonizing the two elements so that public improvements might be provided in an orderly and economic manner, and in cooperation with a well-informed public.

The coordination of these elements should prevent lack of facilities when they are most needed, and avoid overexpansion of physical plant and properties, which could be maintained only through great effort. The "Procedure" to be of greatest value should be a practical operation. To accomplish this, it should be fitted into the routine administrations, budgeting and accounting methods of the State government. Thus the "program" may readily be adjusted to meet everchanging conditions.

JUSTIFICATION

The report contains the detailed programs for the various departments, wherein the necessity and description of the projects are set forth, also information relative to the activities and financial operations of the divisions of the State government are shown.

According to the latest estimate, the population of the State of Nevada has increased from 91,058 in 1930 to 131,809 in 1944. The property valuation for assessment during the past 25 years has varied from a low of 184 million dollars in 1935, to a high of 238 million dollars in 1943. The percentage of increase in population is considerably higher than the average for the country as a whole, and the percentage of decrease in property values is somewhat less. However, factors other than trends in population and wealth should be taken into consideration in justification for the whole program. Certain of these factors are as follows:

(1) During the past 20 years, the State's capital expenditures for buildings and major repairs have been very conservative. This particularly has been the case during the period 1931-1944, when these expenditures were as follows:

1931-1933.....	\$44,315	1941-1943.....	49,528
1933-1935.....	7,616	1943-1945.....	16,954
1935-1937.....	3,750		
1937-1939.....	141,277		\$493,263
1939-1941.....	229,823	Annual average	\$35,233

Furthermore, maintenance of existing physical property has been neglected to too great an extent which inevitably results in "piling up" building needs. The estimated book value of State property as of June 30, 1942, was as follows:

Heroes Memorial Building.....	\$86,000.00
State Capitol.....	407,204.00
Printing Office.....	90,000.00
Governor's Mansion	35,000.00
Orphans' Home	145,000.00
Prison	345,000.00
Prison Farm	41,000.00
State Armory.....	15,496.00
University of Nevada.....	3,113,667.63
Hospital for Mental Diseases.....	686,192.56
State School of Industry.....	126,564.90
Supreme Court and Library Building..	702,000.00
Agricultural Society.....	50,000.00
Highway Department.....	1,054,533.24
Museum Building	85,000.00
National Guard Equipment.....	6,000.00
State Hatchery (Verdi).....	17,250.00
State Property (Lehman Caves).....	1,300.00
State Welfare Department (Reno).....	4,500.00
Total.....	<u>\$7,011,708.33</u>

The normal depreciation (1½%) would amount to perhaps as much as \$105,000 annually, which indicates replacement needs.

(2) The period 1932-1944 witnessed great expansion of State government activities. The summary reveals that expenditures increased from \$5,677,845 during the biennium 1933-1935 to approximately \$11,000,000, estimated, for 1945-1947. This expansion presents the problem of additional office space to house increased personnel.

(3) Although the population of the State may not increase to any extent, experience of eastern and older States should indicate that in all probability the State government will be expected to furnish improved and expanded public services from time to time. In Nevada, these may include greater highway systems, and better hospital, sanitation, water, educational, and military facilities.

(4) The cost to the State for National Guard protection during the past has been negligible. The problem of National Defense during the immediately ensuing years probably will cause reappraisal of military needs in the State, thus adding another State requirement for general public welfare.

THE FINANCIAL ANALYSIS

The financial analysis included a study of the financial operations of the State government over a 10-year historical period and a six-year future period.

NOTE—The financial statistics submitted in this report have been carefully segregated and are believed to be sufficiently correct to serve the purpose of indicating trends of income and requirements. The financial analysis is not to be considered as an audit.

FINANCIAL STATISTICS GENERAL FUND

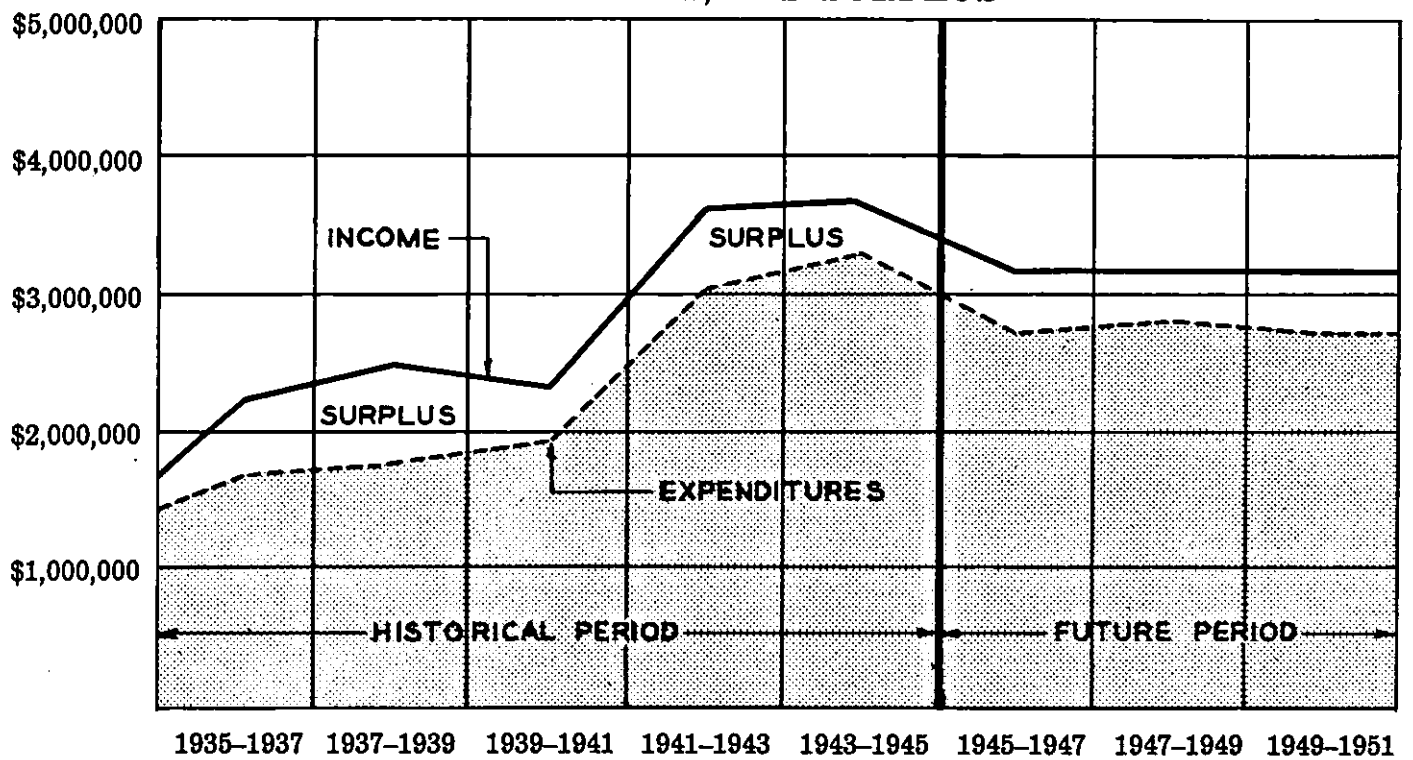
(Biennium Covers Two Fiscal Years, July 1 to June 30, Inclusive)

Revenues and Source—	HISTORICAL PERIOD					FUTURE PERIOD (Estimated)		
	1935-1937	1937-1939	1939-1941	1941-1943	1943-1945	1945-1947	1947-1949	1949-1951
State Property Tax.....	\$1,372,496	\$1,236,734	\$812,870	\$1,118,665	\$427,646	\$427,646	\$427,646	\$427,646
Interest	8,136	1,482						
Licenses	280,910	340,770	431,233	564,931	720,400	720,400	720,400	720,400
Fees	11,656	13,066	17,064	17,143	26,048	25,000	25,000	25,000
Institution Income.....	50,732	44,097	32,474	48,481	39,968	40,000	40,000	40,000
Total Revenues.....	\$1,723,930	\$1,636,149	\$1,293,641	\$1,749,219	\$1,214,062	\$1,213,046	\$1,213,046	\$1,213,046
United States Subvention Funds.....	\$95,234	\$194,712	\$175,374	\$129,021	\$103,328	\$130,000	\$130,000	\$130,000
Offsets, Transfers, etc.	121,698	132,579	48,103	193,316	868,214	860,000	860,000	860,000
Sale of Bonds (Special).....			76,500					
Boulder Dam Grants.....				1,260,000	900,000	600,000	600,000	600,000
Total Income.....	\$1,940,862	\$1,963,440	\$1,593,618	\$3,331,566	\$3,085,604	\$2,803,046	\$2,803,046	\$2,803,046
Balance Forward	220,118	602,583	712,883	331,544	594,528	372,012	393,421	347,467
Total	\$2,160,980	\$2,566,023	\$2,306,501	\$3,663,100	\$3,680,132	\$3,175,058	\$3,196,467	\$3,150,513
Requirements and Expenditures—								
General Government	\$500,963	\$536,251	\$574,302	\$595,705	\$506,466	\$530,000	\$530,000	\$530,000
Protection—Persons and Property.....	184,640	233,711	212,182	155,926	208,106	220,000	220,000	220,000
Health and Sanitation.....	18,099	27,301	34,024	77,260	123,702	140,000	140,000	140,000
Development and Conservation of Natural Resources	181,424	220,296	247,516	255,221	211,956	215,000	215,000	215,000
Charities, Hospitals, and Institutions.....	475,445	491,159	583,175	604,940	662,240	700,000	700,000	700,000
Education	186,003	188,608	227,482	217,235	203,134	225,000	225,000	225,000
Recreation	500	5,000	5,000*	255	5,800	5,000	5,000	5,000
Miscellaneous	7,573	9,538	4,505	633,076	4,886	8,000	8,000	8,000
Postwar Reserve Fund†.....				500,000	1,300,000	600,000	750,000	700,000
Total Maintenance and Operation.....	\$1,554,647	\$1,711,864	\$1,888,186	\$3,039,618	\$3,226,290	\$2,643,000	\$2,793,000	\$2,743,000
Repairs and Betterments.....	3,750	141,277	86,771	28,954	81,830	138,637	56,000	35,000
Total Expenditures.....	\$1,558,397	\$1,853,140	\$1,974,957	\$3,068,572	\$3,308,120	\$2,781,637	\$2,849,000	\$2,778,000
Balance	\$602,583	\$712,883	\$331,544	\$594,528	\$372,012	\$393,421	\$347,467	\$372,513

*Transferred to Bond Interest and Redemption Fund of \$614,075 to clear outstanding debt.

†Estimated Postwar Reserve Fund balance June 30, 1945, \$1,800,000; June 30, 1951, \$3,950,000 (unless allocated before then).

GRAPHIC REPRESENTATION OF THE GENERAL FUND SHOWING INCOME, EXPENDITURES, AND SURPLUS



NEVADA'S BONDED DEBT AS OF JUNE 30, 1944
STATEMENT BASED UPON REPORT OF STATE CONTROLLER

	Year authorized	Amount authorized	Amount outstanding	Amount unissued June 30, 1944
University of Nevada Heating Plant, 3 percent.....	1941	\$75,000.00	.....	\$29,500.00
Nevada Prison Building.....	1941	265,000.00	.....	225,000.00

The above indicates that Nevada has at the present time no outstanding bonded indebtedness.

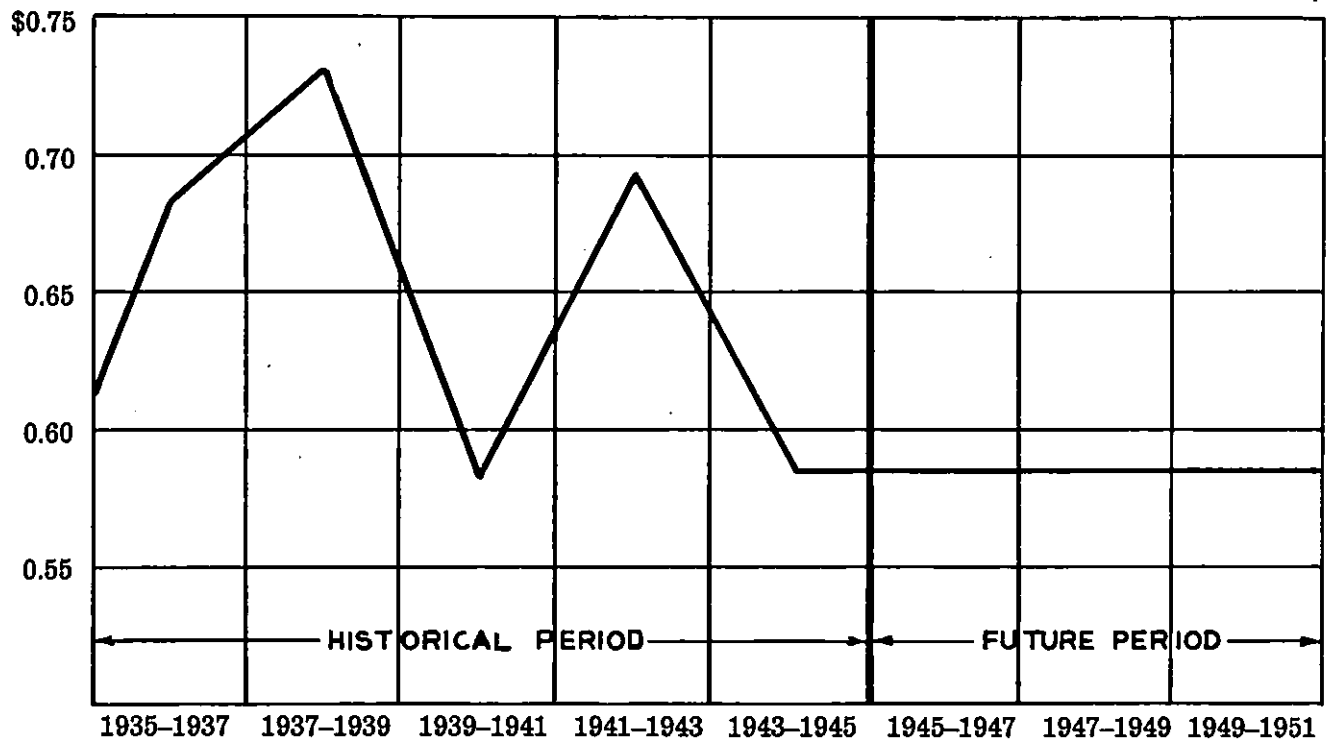
PROPERTY VALUATION AND TAX LEVY

	HISTORICAL PERIOD				
	1935-1937	1937-1939	1939-1941	1941-1943	1943-1945
Property Valuations.....	\$188,000,000	\$193,500,000	\$193,500,000	\$200,000,000	\$238,000,000
Fund or Purpose, with Rate of Tax Levy—					
General Fund.....	.385	.3335	.19	.265	.05
State Distributive School.....	.11	.11	.11	.13	.21
Public School Teachers.....	.005	.015	.015	.015	.02
Old-Age Assistance.....	.....	.08	.11	.12	.09
University Public Service.....	.02	.02	.02	.02	.015
State Farm Bureau.....	.01	.01	.01	.01	.01
University.....	.09	.09	.09	.09	.125
Bond-Interest-Redemption.....	.06	.055	.035	.045	.....
State Aid Rural Schools.....	.....	.....	.....	.....	.005
Postwar Reserve Fund.....	.....	.....	.....	.....	.04
Board of Control Repair Fund.....	.....	.....	.....	.....	.005
University Retirement Fund.....	.....	.....	.....	.....	.01
Miscellaneous.....	.....	.0165	.....	.....	.....
Total Tax Rate.....	.68	.73	.58	.695	.58

	FUTURE PERIOD (Estimated)		
	1945-1947	1947-1949	1949-1951
Property Valuations.....	\$240,000,000	\$240,000,000	\$240,000,000
Fund or Purpose, with Rate of Tax Levy—			
General Fund.....	.05	.05	.05
State Distributive School.....	.21	.21	.21
Public School Teachers.....	.02	.02	.02
Old-Age Assistance.....	.09	.09	.09
University Public Service.....	.015	.015	.015
State Farm Bureau.....	.01	.01	.01
University.....	.125	.125	.125
Bond-Interest-Redemption.....	.04	.04	.04
State Aid Rural Schools.....	.005	.005	.005
Postwar Reserve Fund.....	.....	.....	.....
Board of Control Repair Fund.....	.005	.005	.005
University Retirement Fund.....	.01	.01	.01
Miscellaneous.....	.....	.....	.....
Total Tax Rate.....	.58	.58	.58

The tax levy of 58¢, based on a property valuation of \$238,000,000, would bring in only a portion of the moneys necessary to carry out the six-year program as outlined. It might be expedient to use a portion of the revenues derived from the use of Boulder Dam by the Federal Government. Since the program is postwar in nature to a marked degree, part of the financing could very properly come from the Federal Government on the same basis as the Public Works Administration functioned during the depression; that is, 70 percent Federal Funds, and 30 percent State funds. Then the State would be called upon to raise funds only to the extent of the 30 percent. While there is no assurance at this time that the Public Work Administration's activities will be extended, still it is reasonable to anticipate the use of Federal funds in the postwar period for worthwhile public works projects.

RATE OF TAX LEVY PER \$100 ASSESSED VALUATION



GENERAL GOVERNMENT

CAPITOL BUILDINGS GROUP, CARSON CITY, NEVADA

Major Repairs and Betterments—Necessity and Description

SIX-YEAR IMPROVEMENT PROGRAM

(1)	Proposed Improvements and New Construction	(2)	ESTIMATED EXPENDITURES			Total six- year period
			1945-1947	1947-1949	1949-1951	
1.	Nevada State Capitol Building Improvements.....	GF	\$50,000	-----	-----	\$50,000
2.	Nevada State Capitol Building Extensions.....	GO	198,000	\$198,000	\$61,828	457,828
3.	Addition of Third Story to Supreme Court and Library Building.....	GO	45,000	-----	-----	45,000
4.	Nevada State Department of Highways Build- ing—New	GO	-----	288,000	-----	288,000
Total Construction Costs.....			\$293,000	\$486,000	\$61,828	\$840,828

(1) Suggested Priority Listing. (2) Method of Financing.
GO—General Obligation Bonds. GF—General Fund Appropriations.

The present Capitol group consist of the following buildings:

- The Nevada State Capitol.
- Supreme Court and Library.
- Heroes Memorial.
- Highway Department Laboratory.
- State Printing Office.
- Governor's Mansion.

Improvements are recommended at this time for the following:

- Nevada State Capitol Building.
- Supreme Court and Library Building.
- Highway Building. (New Construction.)

The Capitol—The central section, which comprised the Capitol at the time, was erected in 1872. In 1907 a large two-story octagonal structure to house the State Library was erected to the east of the Capitol Building, being connected to the Capitol by covered approaches. In 1915, two wings were added to the main structure. The building stands in a square area, 440 x 440 feet, surrounded by a grove of trees, all embraced within a wrought iron picket fence. The construction is of native cut sandstone. The columns used are Doric in style, and the imprint of Colonial Days is stamped upon the exterior.

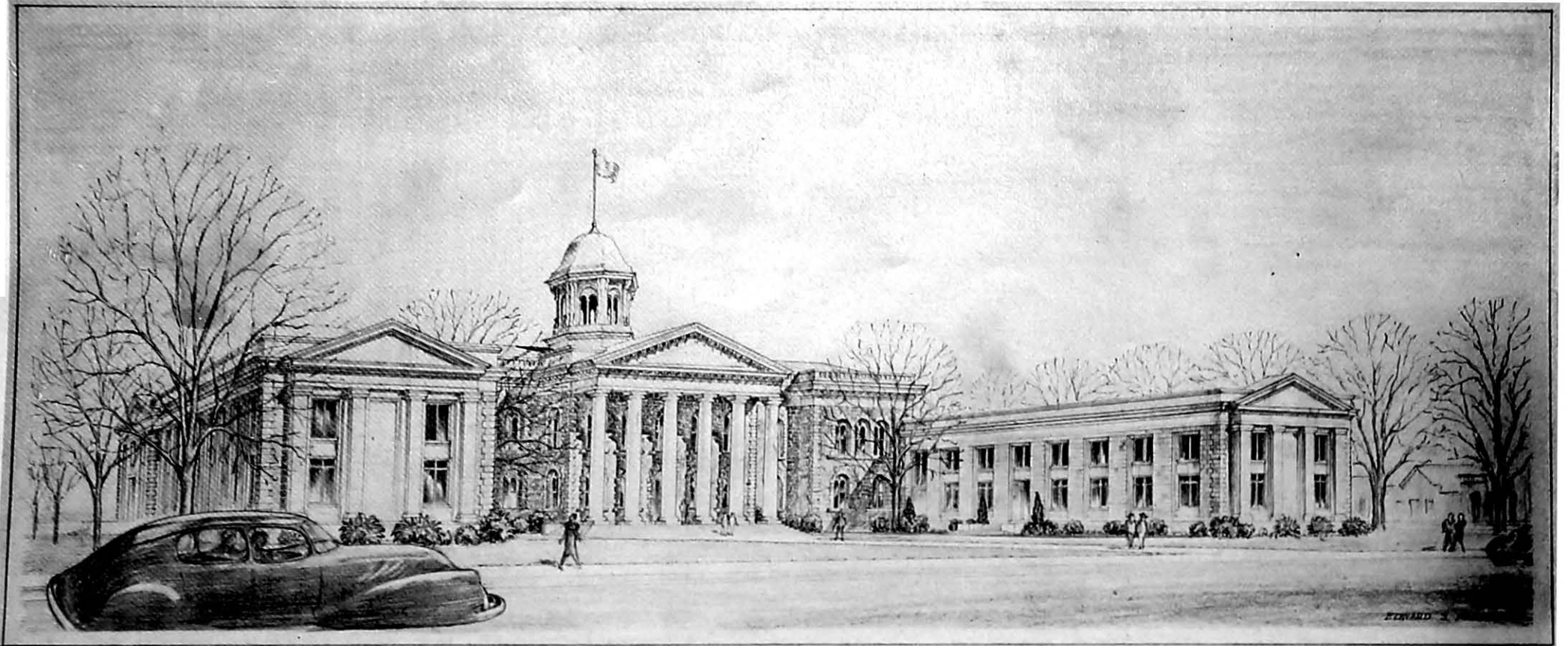
The interior with large rooms, high ceilings, and great arched windows is Continental in design and appearance. The Capitol Building and grounds preserve the atmosphere of the golden age, when millions poured out of the great mines of Western Nevada. In all the West, no public structure more typifies the period following the Civil War, and the early twenties of the present century.

The building in its seventy-third year is growing old, and during recent years maintenance has been deferred to too great an extent. The need for additional office space is a growing one. The Six-Year Improvement Program suggests that two additional wings might be added over a period of years, beginning during the biennium 1945-1947.

1. NEVADA STATE CAPITOL BUILDING IMPROVEMENTS, \$50,000 (1945-1947)

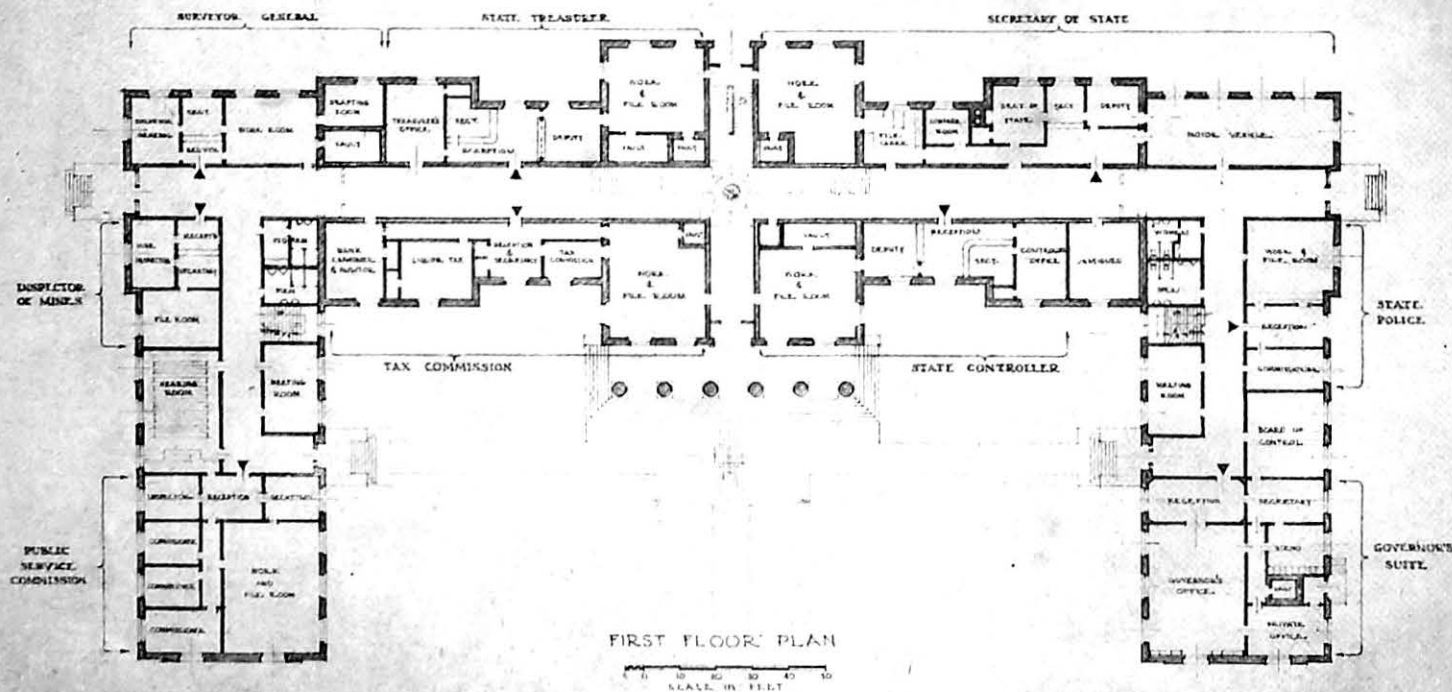
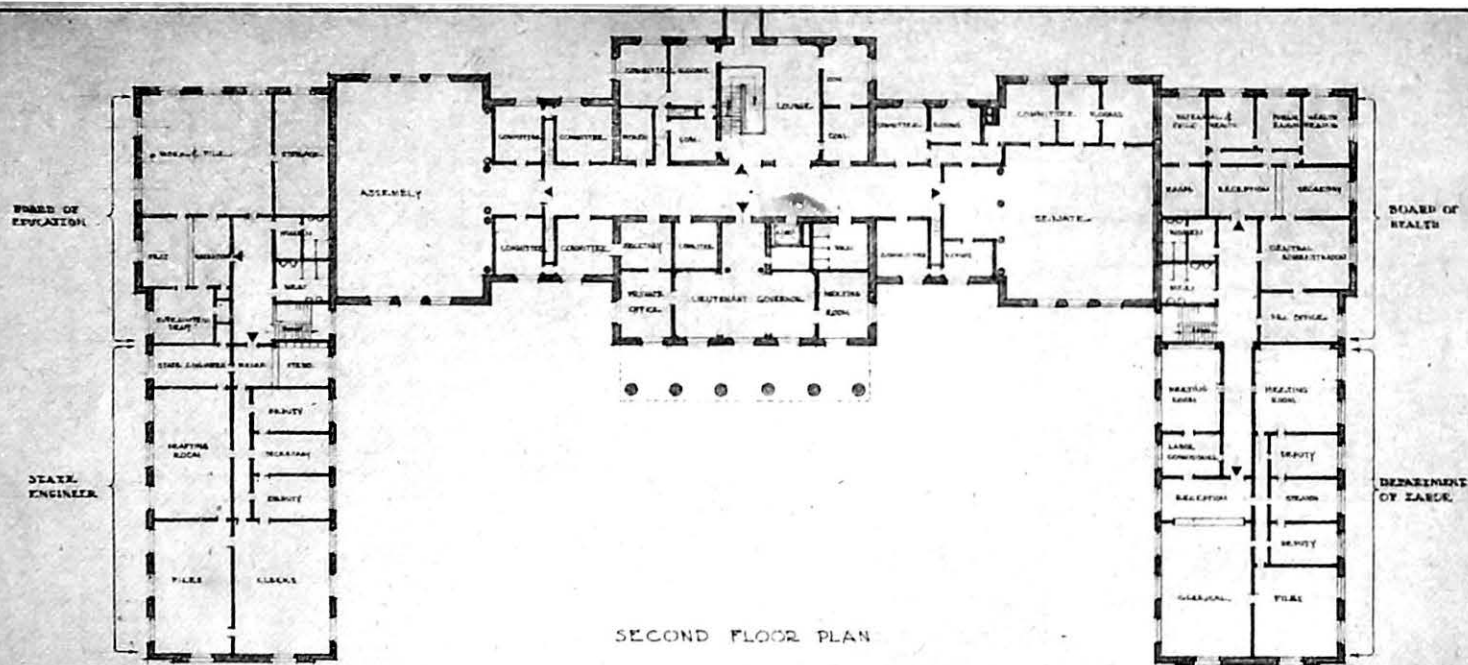
Necessity—The long wooden stairways extending from first to second floors are inconvenient and to some extent dangerous. Some repairs, redecorating, etc., were made during the last two years; however, additional improvements are necessary.

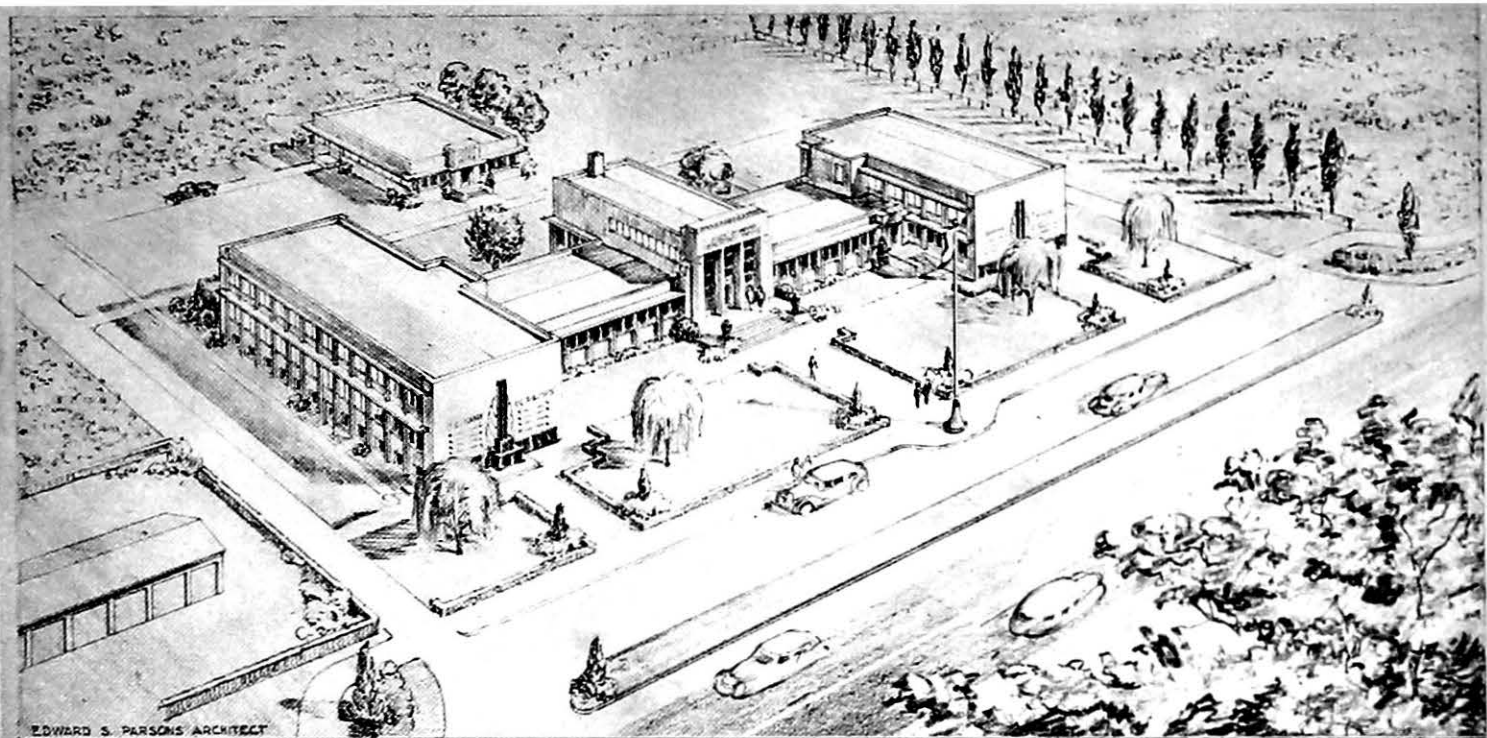
Description—It is proposed to install an elevator to eliminate the hazard caused by present stairways, recondition heating plant, and to increase size of water supply line in order to provide adequate pressure for fire protection.



PROPOSED ADDITIONS TO THE NEVADA STATE CAPITOL

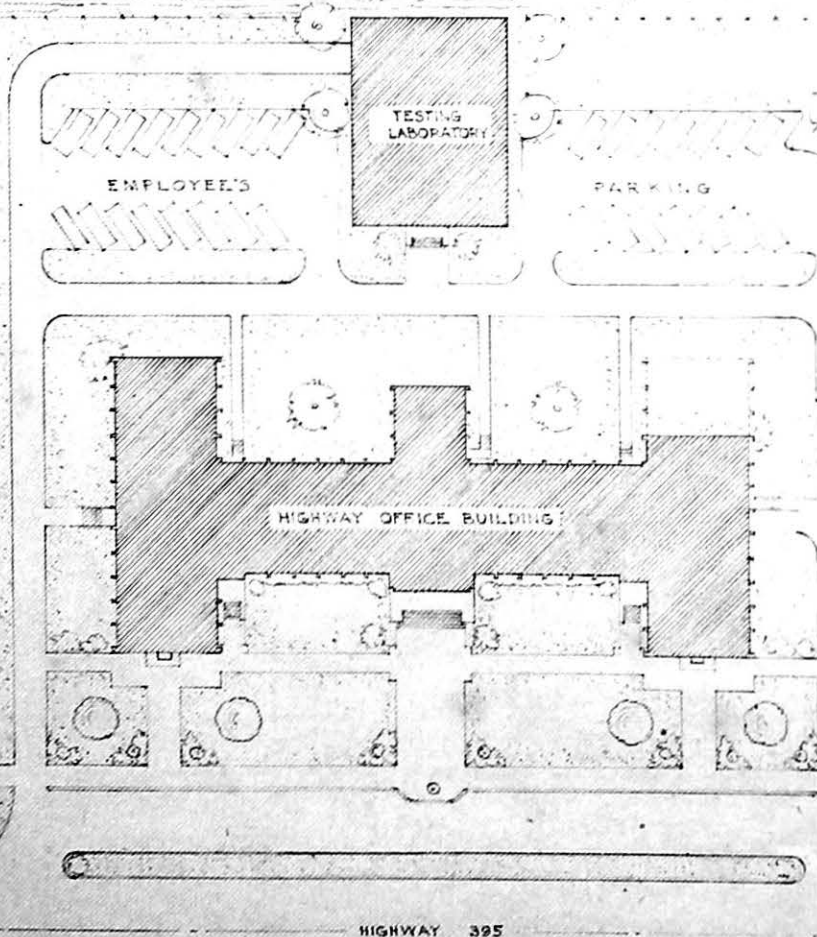
PREPARED BY • THE NEVADA STATE PLANNING BOARD • CARSON CITY, NEVADA • AUGUST 1942





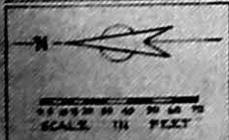
EDWARD S. PARSONS ARCHITECT

AERIAL VIEW



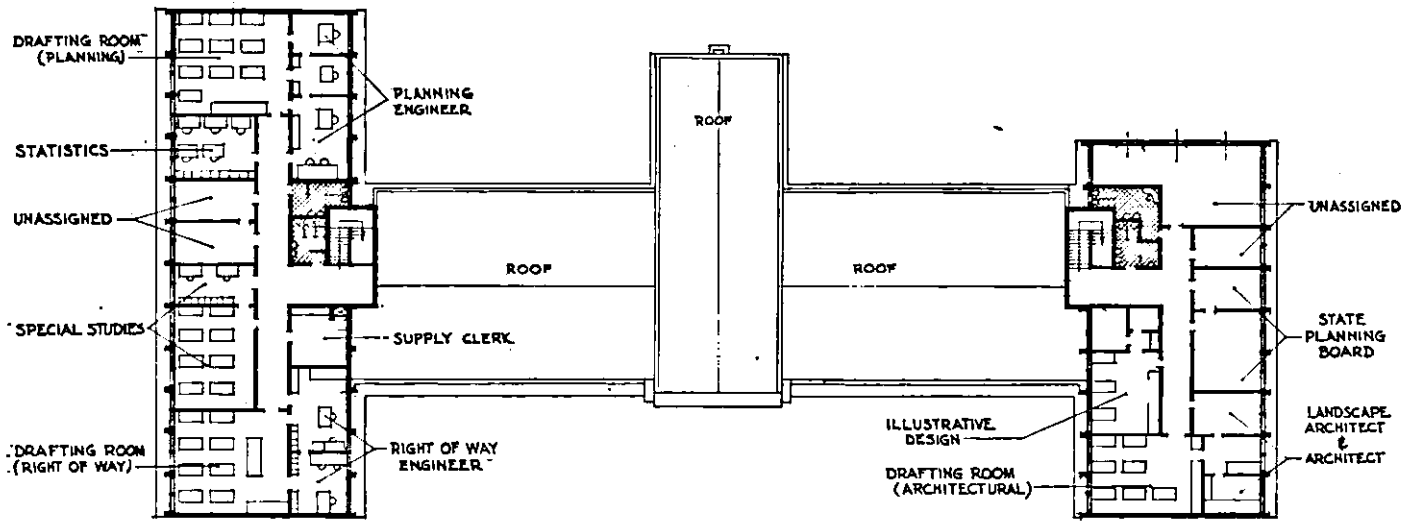
HIGHWAY 395

• PLOT PLAN •

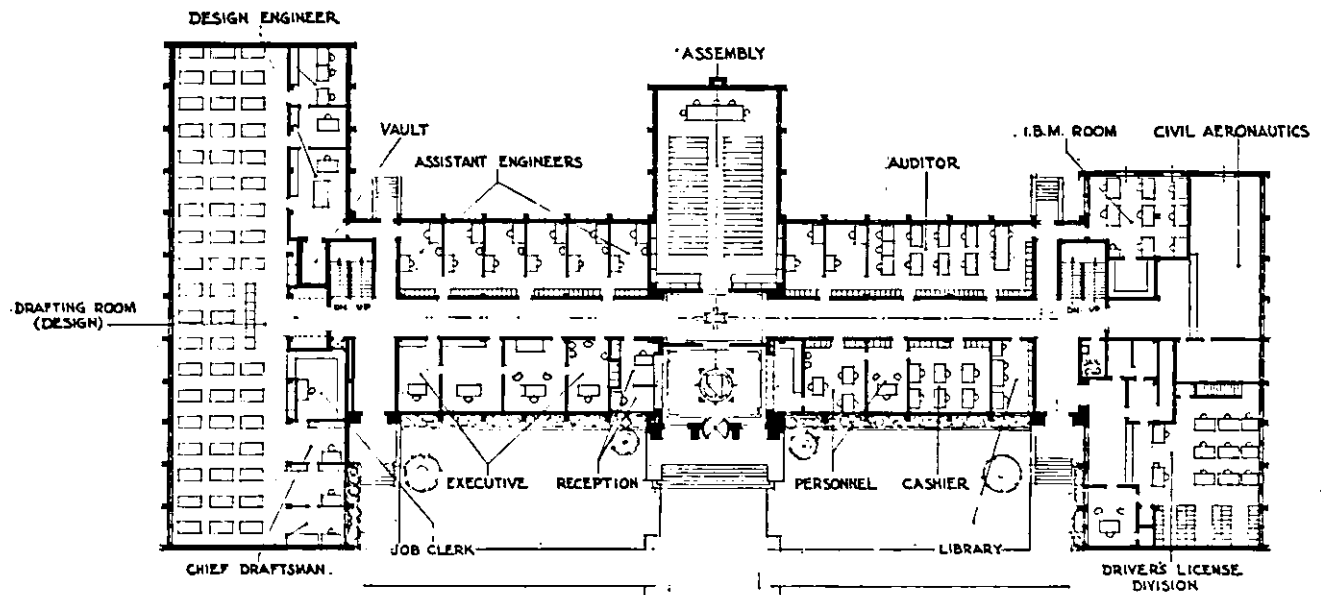


~ Proposed ~
NEVADA STATE HIGHWAY BUILDING

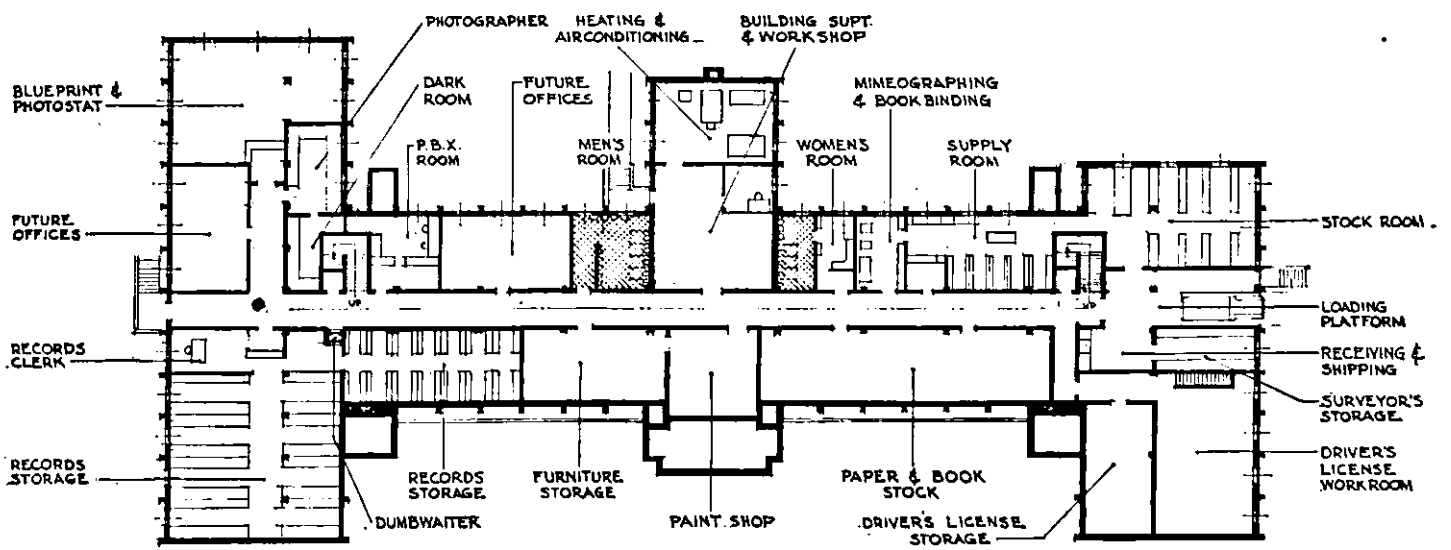
PREPARED BY:
NEVADA STATE
PLANNING BOARD
CARSON CITY, NEV.
SEPTEMBER 1934
EDWARD S. PARSONS ARCHT.



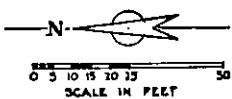
SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

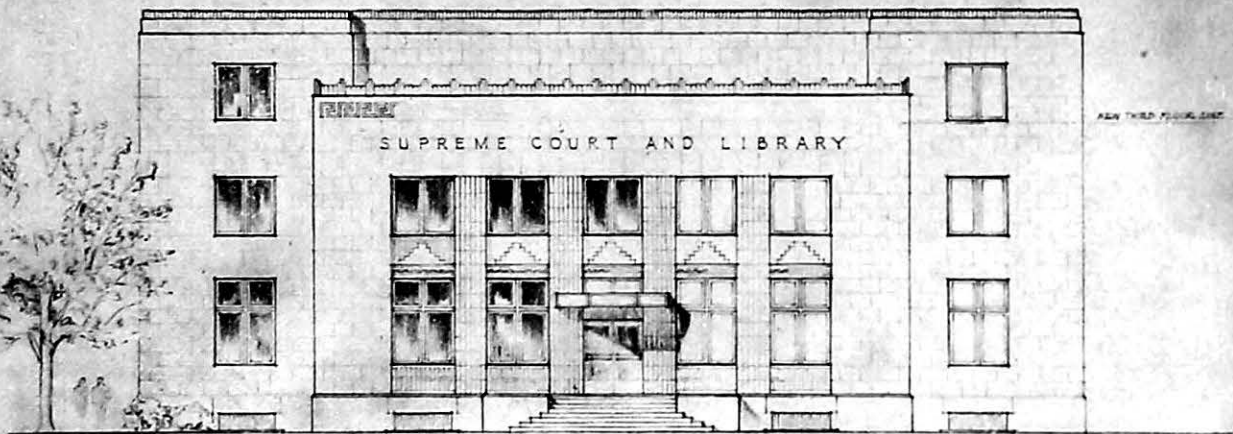


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NEVADA STATE HIGHWAY BUILDING

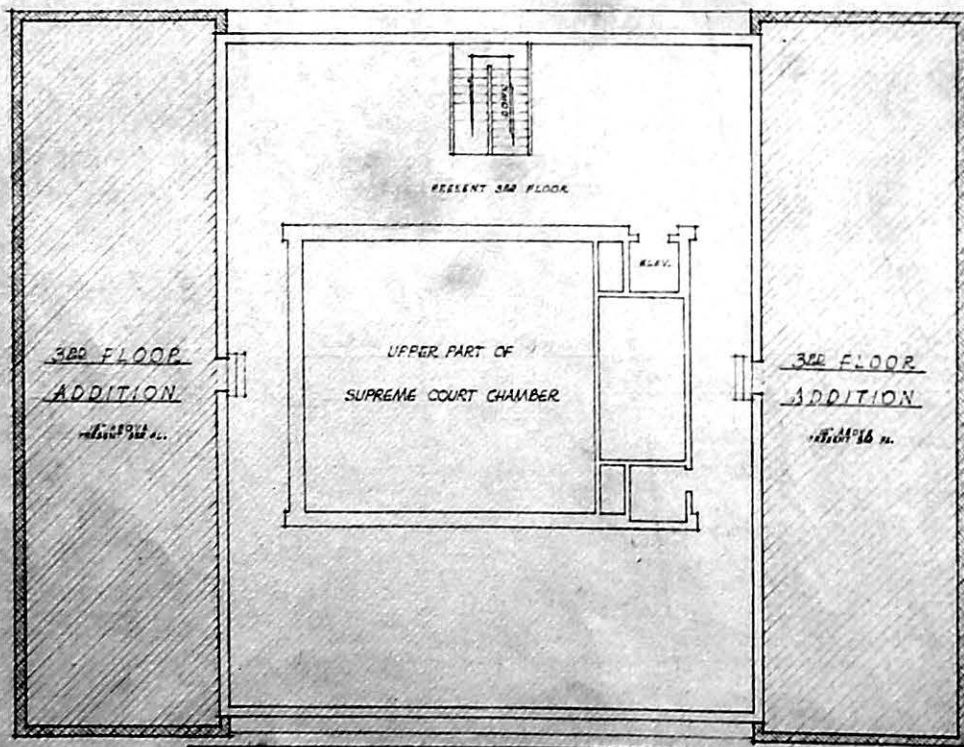
PREPARED BY...

NEVADA STATE PLANNING BOARD
 CARSON CITY, NEVADA
 SEPTEMBER, 1944.

EDWARD S. PARSONS - ARCHITECT



FRONT ELEVATION



THIRD FLOOR PLAN



PROPOSED ADDITION
TO
SUPREME COURT & LIBRARY BLDG.

2. NEVADA STATE CAPITOL BUILDING EXTENSIONS, \$198,000 (1945-1947); \$198,000 (1947-1949); \$61,828 (1949-1951)

Necessity—There is increasing need for additional office space. In two instances, mezzanines in existing building were constructed, and have been found unsatisfactory and uneconomical. The interior construction and arrangement is not suitable for this type of remodeling.

Description—(See proposed design)—Extensions in the form of "wings" should be added. The exterior construction should be of native cut sandstone to conform with the architectural style of existing structure, and the interior walls, floors, and roof framing of reinforced concrete. It is contemplated that the interior for the most part would be three (3) stories of office space. Construction in units extending over a period of years is recommended.

Effect On Operating Costs—The maintenance and operating expenses for Capitol buildings would be increased in proportion to the extent of additional space provided.

3. ADDITION OF THIRD STORY TO SUPREME COURT AND LIBRARY BUILDING, \$45,000 (1945-1949)

Necessity—This building houses Supreme Court and State Library, also provides office space for the three Supreme Court Judges and the Attorney-General and his staff. Erected in 1937 at a cost of \$225,000. The building is already approaching an overcrowded condition, and there is a pressing need for increased facilities.

Description—It is proposed to construct a partial third story to the existing structure, making available an additional 37,268 cubic feet of space. The addition to be so constructed that it will conform with the present building, which is of reinforced concrete with waterproof tile and of modernistic design. Maintenance and operation cost will be increased approximately \$1,100 per year.

4. NEVADA STATE DEPARTMENT OF HIGHWAYS BUILDING (New), \$288,000 (1947-1949)

Necessity—The Heroes Memorial Building constructed as a memorial to State heroes of World War I has been utilized to house State Highway Administrative departments, State Engineer, Drivers' License Bureau and State Planning Board, in addition to auditorium used as a meeting and recreational center for American Legion and Veterans of Foreign Wars. The space afforded is inadequate to properly serve these expanding departments of Government.

Description—It is proposed to construct a modern fire-resistant building near the site of the present highway equipment plant south of Carson City limits on Highway 395, with sufficient capacity to house the State Highway administrative offices and all its related departments. (See proposed sketch pages 24 and 25.)

PROTECTION—PERSONS AND PROPERTY

NEVADA NATIONAL GUARD

(1) Proposed New Construction and Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
		1945-1947	1947-1949	1949-1951	
1. Reno—Armory and Garage.....	GO	\$71,709	.....	.....	\$130,380
Armory and Garage.....	OF	58,61	.....	.....
2. Elko—Armory and Garage.....	GO	50,138	.....	.....	91,160
Armory and Garage.....	OF	41,022	.....	.....
3. Winnemucca—See Description.....	GO	.....	\$50,138	.....	91,160
See Description.....	OF	.....	41,022	.....
4. Las Vegas.....	GO	50,138	.....	.....	91,160
See Description.....	OF	41,022	.....	.....
5. Carson City.....	GO	.....	.....	\$20,405	37,100
See Description.....	OF	.....	.....	16,695	
Total Construction Cost.....		\$312,700	\$91,160	\$37,100	\$440,960

(1) Suggested Priority Listing. (2) Method of Financing. GO—General Obligation Bonds. OF—Outside Funds.

NECESSITY AND DESCRIPTION

A Federal report as of June 30, 1937, rated the Nevada National Guard as No. 48, thus placing the organization at the bottom of the list of all States. This in itself is an indication of the deplorable condition of housing and lack of facilities to properly train and equip Nevada guardsmen previous to our entering World War II.

During recent years, repeated attempts have been made to arouse wide public interest in the affairs of the Guard. Appeals have gone to the State and Federal governments for increased allotments to bring about a satisfactory standing of the Nevada Guard organization.

These appeals have been answered to some degree, as is evidenced in that State government expenditures for fiscal years 1931-1933, for maintenance of the Guard, amounted to \$2,993, while expenditures during subsequent years have averaged about \$9,000 annually. The Federal government matches this outlay at the rate of approximately 10 to 1.

Since the Nevada National Guard and Antiaircraft Unit have been mustered into the regular armed forces of the Nation, the organization has lost its identity to a certain extent; however, it is anticipated that upon cessation of hostilities it will again become necessary to provide adequate facilities for maintaining the Guard at a new high standard, and it is with this thought in mind that we recommend the following:

RENO ARMORY AND GARAGE, \$130,380 (1945-1947)

Necessity—The National Guard units of Reno in the past have been housed under very unsatisfactory conditions, utilizing a portion of the basement in the Washoe County Library Building for their activities. Adequate storage space for military supplies and equipment was sadly lacking.

Description—Armory. It is proposed to erect a building with steel frame, having metal walls and roof. Foundations and floors will be concrete. The buildings will have a 70' x 100' drill hall with lavatory, locker room, supply room, recreation room, kitchen, and headquarters office. The building will be used by both Headquarters Battery and the Searchlight Battery units.

Headquarters Battery Garage. This building will be of the same type construction as the Armory, 158' x 50', and provide space for storage and field equipment, a shop, and heating plant.

Searchlight Battery Garages. The garages will be necessary to house the units to be supplied the Searchlight Battery. One building will be 254 feet long by 50 feet wide with storage space, shops, heating plant, and office. The other structure will be 101 feet long by 44 feet wide and will provide space for storage and offices, all buildings to be of same type construction as Armory.

ELKO ARMORY AND GARAGE, \$91,160 (1945-1947)

Necessity—The National Guard Headquarters formerly occupied the Woman's Exhibit Building at the Fair Grounds one mile from the center of the city. A vault 8' x 8' x 8' was constructed of reinforced concrete for storage of arms, ammunition and other valuable military property adjacent to the exhibit building. The city needs a building large enough to adequately house all National Guard activities.

Description—It is proposed to duplicate the Reno Armory at Elko, except for office requirements, and to construct one garage 254' x 50', same type as Searchlight Battery Garage proposed for Reno.

WINNEMUCCA ARMORY AND GARAGE, \$91,160 (1947-1949)

Necessity—Prior to July 1, 1937, the basement of the grammar school was occupied by the State National Guard, but on this date they were ordered to vacate by the school trustees as the space was needed for school purposes. The National Guard then acquired the Old Winnemucca State Bank Building which is still available, but not suitable for a full program of Guard activities.

Description—It is proposed to duplicate the Armory and Garage designated for Elko.

LAS VEGAS ARMORY AND GARAGE, \$91,160 (1945-1947)

Necessity—The National Guard unit at Las Vegas has in late years occupied the basement of the Veterans Memorial Building, however, this building is not adequate to house all activities of the Guard. It will also be necessary to construct a garage for the storage and repair of trucks and field pieces.

Description—It is proposed to practically duplicate the Armory and Garage structures at Elko.

CARSON CITY—STATE ARMORY, \$37,100 (1949-1951)

The Adjutant General recommends that careful thought be given to the desirability of making necessary repairs to and completely rehabilitating the State Armory, located at Carson City, with the view of utilizing the same as headquarters for the Nevada National Guard, including the office of the Adjutant General and also to remove the State Arsenal from Reno thereto.

The Adjutant General in his Biennial Report of 1940-1942 states that plans have been drawn and are now available for the structures listed above, and that considerable correspondence with Nevada's Congressional representatives lead to the conclusion that it may be possible to secure a considerable portion of the cost from the Federal Government, leaving the balance to be furnished by State of Nevada.

He also states that communities in which the Armories are erected will be directly benefited thereby in that such buildings will not only be used for military purposes, but for recreational, educational, and other community activities.

HEALTH AND SANITATION

STATE DEPARTMENT OF HEALTH

(1)	Proposed New Construction	(2)	ESTIMATED EXPENDITURES			Total-six- year period
			1945-1947	1947-1949	1949-1951	
1.	Hospital for Tuberculosis.....	GO	\$178,500	.....	.....	\$178,500
2.	Hospital for Crippled Children Building.....	GF	10,600	.....	.....	10,600
	Equipment	OF	5,000	.....	.....	5,000
3.	Department of Health Administration Building.....	GO	.....	.....	\$50,880	50,880
Total Construction Cost.....			\$194,100	.....	\$50,880	\$244,980

(1) Suggested Priority Listing. (2) Method of Financing.

GO—General Obligation Bonds. GF—General Funds. OF—Outside Funds.

MAJOR REPAIRS AND BETTERMENTS—NECESSITY AND DESCRIPTION

The State Department of Health consists of the State Board of Health and State Health Officer. During very recent years, State activities in the interest of public health and sanitation have greatly expanded. In 1936, there were two persons employed, whereas at the present time, there are forty-seven employees in the department.

The efforts to gain better control of disease through regulation and education have been well received throughout the State, and the department is receiving cooperation on the part of the various official and nonofficial agencies, clubs, and welfare groups. The activities of the Board of Health are divided into eight divisions; four divisions located in Carson City, and four in Reno, as follows:

1. Administration, Capitol Building, Carson City.
2. Vital Statistics, Capitol Building, Carson City.
3. Local Health and Epidemiology, Capitol Building, Carson City.
4. Dental Hygiene, Capitol Building, Carson City.
5. Public Health Engineering, Fordonia Building, Reno.
6. Maternal and Child Health, Fordonia Building, Reno.
7. Venereal Disease Control, Fifth and Sierra Streets, Reno.
8. Laboratories, Fifth and Sierra Streets, Reno.

1. HOSPITAL FOR TUBERCULOSIS, \$178,500 (1945-1947)

Necessity—Nevada has a high tuberculosis death rate and there is no provision in the State for proper and adequate hospitalization of tuberculosis patients to augment the efforts now being extended to combat the disease. Although the tuberculosis death rate is slowly declining in the United States, and in Nevada as well, it is clearly shown that where States have proper facilities for segregation and treatment for the disease, the decline is accelerated. This prevents spreading the disease, and often results in rehabilitation of the patient.

In the State of Nevada, there are many cases of silicosis, often resulting from disregard of State laws enacted for prevention of the disease. Some have the erroneous idea that tuberculosis and silicosis are closely related, and that tuberculosis is the natural end of silicosis. The two diseases are entirely different, but individuals afflicted with silicosis are more susceptible to tuberculosis. As nearly as can be determined, silicosis predisposes the individual to the disease of tuberculosis, but contact with tuberculosis is a prerequisite to contracting the disease. In making comparisons of the tuberculosis death rate in the States of Colorado and Arizona, it should be remembered that those States have many private sanitariums which advertise the advantages of climate and treatment. From the economical standpoint, this is a long-term program. During first years of operating, great results should not be anticipated, rather the long-term effect should be considered. To illustrate, a young man of family contracts the disease, resulting in his hospitalization. The care of his wife and children may, in the interim, fall to the county. However, this method, if taken in time, more often than under present conditions, should result in restoring the patient to a good state of health and to his position of

responsible citizenship. It is recognized that a fifty (50) bed hospital would not immediately care for all patients. It may, within a reasonable length of time, prove adequate with better control of the disease.

Description—It is proposed that a fifty (50) bed hospital be provided.

Effect on Operation—It is estimated that the cost of operating such a hospital will be \$1,000 per bed per year. At the present time, counties within the State are expending from \$1 to \$2.50 per day for care of each patient requiring assistance. Arrangements probably could be made whereby counties would contribute \$2 per day for each person hospitalized, and would result in little, if any, increase in cost of county government. The State's share would be about 75 cents per day or approximately \$13,500 annually.

2. HOSPITAL FOR CRIPPLED CHILDREN—BUILDING, \$10,600 (1945-1947); EQUIPMENT, \$5,000 (1945-1947)

Necessity—Aid to Crippled Children in Nevada has been in effect for about four years. At the present time there are two hundred forty children listed on the rolls of crippled children within the State, thirty of whom should have orthopedic surgery now. The service of this division is undertaken with State, local, private, and Federal cooperation, and consists of furnishing many forms of treatment for alleviating the afflicted child which should assist him to responsible adult citizenship. Corrective surgery, braces, X-ray, supplies, etc., are offered with expert advice. In a number of instances during recent years it has been necessary to send the child out of the State for treatment. However, at the present time, the services of an accredited orthopedic surgeon are available in the city of Reno. Under existing arrangements, children coming to Reno for surgery are hospitalized at the Washoe County General Hospital, provided there are unoccupied beds at the hospital. Often there are no beds at the time the child is ready for the operation, therefore, there is great need for overcoming this difficulty in order that results might be fully comparable with expenditures.

Description—In discussing the problem of proper facilities for the hospitalization of crippled children with the officials of Washoe County General Hospital, it has been agreed that an 8-bed adjunct to the general hospital might be provided for about \$15,000, of which \$5,000 would be required for equipment. The money for equipment can be secured from sources other than the State funds.

Effect on Operating Costs—Under present arrangements, the sum of approximately \$10,000 is required for nonhospital costs, such as surgeon's salary, administration expenses, braces, X-ray materials, etc., the major portion of which is fixed.

It is estimated that there would be little, if any, increase to counties under such a program.

3. DEPARTMENT OF HEALTH ADMINISTRATION BUILDING, \$50,880 (1949-1951)

Necessity—Four divisions of the Department of Public Health are located in Reno, all occupying rented quarters in two different buildings. This project is proposed for construction during 1949-1951 biennium as a measure of convenience and economy.

Description—At the present time, it is estimated that a single building of Class A construction having a floor area of 6,000 square feet, including office space, clinic rooms, and laboratory would be a suitable structure.

DEVELOPMENT AND CONSERVATION OF NATURAL RESOURCES

STATE ENGINEER

(1)	River Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
			1945-1947	1947-1949	1949-1951	
1.	Muddy River and Its Tributaries.....	OF	\$1,032,000	.....	.....	\$1,032,000
2.	Humboldt River.....	OF	.....	\$3,522,000	.....	3,522,000
3.	Little Humboldt River and Its Tributaries.....	OF	177,100	.....	.....	177,100
4.	Truckee and Carson Rivers.....	OF	.....	12,200,000	.....	12,200,000
5.	West Walker River.....	OF	.....	5,065,000	.....	5,065,000
Total Construction Cost.....			\$1,209,100	\$20,787,000	.....	\$21,996,100

(1) Suggested Priority Listing. (2) Method of Financing. OF—Outside Funds.

1. MUDDY RIVER AND ITS TRIBUTARIES, \$1,032,000 (1945-1947)

General Description—Muddy River is formed by a large group of springs rising mainly in portions of Section 16, Township 14 S., Range 65 E., M. D. B. & M., on the property known as the Home Ranch. The river flows easterly and southeasterly through the Moapa Indian Reservation and crosses the Union Pacific Railroad near Moapa. Near Glendale the Muddy River is joined by the Meadow Valley Wash, and continues a southeasterly course, passing through what is known as the "Narrows" near the center of Section 7, Township 15 S., Range 67 E. In the NW¼NE¼ of Section 21, Township 15 S., Range 67 E., a diversion earthfill dam was constructed by the U. S. Forest Service by its CCC division in cooperation with the Muddy Valley Irrigation Company. This dam is 677 feet long, 140 feet wide, and 29½ feet high. The spillway has a capacity of 10,000 c.f.s. into the old channel, and a canal of 1,000 c.f.s. capacity delivers water to Bowman reservoir about 1½ miles westerly from the course of the river. The main river channel continues in its general course and confluences with Lake Mead in approximately the SE¼ of Section 29, Township 16 S., Range 68 E.

Above the Home Ranch the Muddy Canyon extends northeasterly and westerly for more than ten miles, and is dry except during heavy rains on its watershed, at which time a river volume of water flows down the canyon. Four miles north and above Warm Springs the canyon walls converge closely, forming a narrow gorge with almost vertical walls. This is Arrowhead Canyon, and in its upper end a rubble masonry arch dam known as the Arrowhead Dam was constructed in 1934 by the CCC under supervision of the Forest Service. The dam is 35 feet high with a crest width of 10 feet and a crest length of 45 feet. The drainage area above the dam is about 1,000 square miles. The storage capacity of this reservoir is about 300 acre-feet.

The canyon extends northwesterly, and about six miles above Arrowhead Canyon its walls converge forming Double Canyon. Beyond Double Canyon the canyon divides into two canyons, one named Elgin Wash, which continues northerly and drains part of Pahranaagat Valley below Maynard Lake, and the other branch turns westerly and catches the Sheep Mountain run off.

Meadow Valley Wash has its confluence with the Muddy River at Glendale and extends northerly from there about 72 miles to Caliente. At Caliente the creek divides, one branch known as Clover Creek extending successively southeasterly and northerly, and enters Utah a few miles northeast of Crestline. In Township 5 S., Range 69 E., the drainage from Pine and Mathews Canyon are tributary to Clover Creek. Pine Canyon is also known as Sawmill Canyon. The Union Pacific Railroad follows the wash to Caliente and then along Clover Valley Creek. The other branch, which retains the name Meadow Valley Wash, extends in a northerly direction, passing near Panaca and through Ursine to its origin in the White Rock Mountains, approximately in Township 6 N., Range 69 E., a distance of about 60 miles from Caliente. Just north of Delmues in about Section 5, Township 1 S., Range 69 E., the flood drainage from Patterson Wash confluences with Meadow Valley Creek. The headwaters tributaries are Camp Valley Creek and Burnt Canyon Creek. The branch line of the Union Pacific to Pioche follows the wash to Dry Valley, immediately above Delmues.

The drainage area of Meadow Valley Wash above Glendale is about 2,660 square miles.

Land and Population—The main farming area within this watershed is in the Lower Moapa Valley where 2,500 acres of land are farmed around Overton. On the Moapa Indian Reservation above Glendale on the Muddy River there are at present about 300 acres being irrigated, which could be increased some if storage is provided.

Along the Meadow Valley Wash between Glendale and Caliente, there are scattered farms or small acreages, the total farming land being 300 acres. On Clover Valley Creek the farming land probably does not exceed 300 acres.

There is considerable farming land in the vicinity of Panaca and farther north on Meadow Valley Creek above Caliente, Delmues, Dry, and Eagle Valleys, probably aggregating 2,000 acres, including meadow land.

The population within the watershed is about 2,500.

Flood Control—All of the irrigated land within this watershed as well as the railroad lines are subject to damage from floods. Since 1905 the damages from floods to the Union Pacific Railroad lines has amounted to more than seven million dollars. The damage in the Lower Moapa Valley since 1910 have approximated five hundred thousand dollars. There are yearly damages to lands on the Moapa Indian Reservation never less than one thousand dollars, and also damage to the lands near Panaca.

Irrigation Practice—The lands of the Lower Moapa Valley are irrigated in a fairly satisfactory manner, made possible by the construction of the Wells Siding diversion dam and the Bowman reservoir. The ditches are kept in yearly repair and there is little waste of water.

The lands of the Moapa Indian Reservation are irrigated by an inadequate system, insofar as the yearly flood menace has discouraged the proper use of the land. The diversions are primitive and the water used when needed without much consideration to the lower users.

Lands along the Meadow Valley Wash below Caliente are irrigated by means of direct diversion out of the creek and by use of long ditches over porous gravelly fills resulting in great loss of water. The land below Panaca is also watered from the wash by direct diversion, but is now being supplemented by pumping water. Several deep well pumps have been installed in this area with the assistance of the Soil Conservation Service.

Studies Made—In 1940, a comprehensive study and report was made on the Muddy River, Clark County, under the direction of the State Engineer. The report recommended the construction of a dam and reservoir at White Narrows upon the Nevada Indian Reservation providing that engineering and natural conditions would permit its reasonably economical construction. It was further recommended that a Congressional appropriation of \$10,000 be made available to the U. S. Office of Indian Affairs to be used in making an engineering study of the Upper Muddy River. This appropriation was obtained for use by the Office of Indian Affairs, which made a complete survey of the White Narrows damsite and also of the Arrowhead and Double Canyon damsites some miles upstream from White Narrows. In connection with this survey the geological conditions of the area were examined and reported upon.

In 1939, the U. S. Soil Conservation Service investigated the Lower Moapa Valley, and the work has been continued in detail since the foundation of a Soil Conservation District there. In 1944, aerial photographs and surveys were made.

Beginning about 1939, the U. S. Army Engineering Office made extensive surveys and investigations of all proposed damsites on the Muddy River, also on Clover Creek and Upper Meadow Valley Wash, and exhaustively studied a damsite at a point south of Glendale called "The Narrows." The Narrows damsite was rejected due to absence of bedrock at a reasonable depth. Subsequently, the Army engineers made other studies and reports which covered the Delmues, Pine Canyon, and Mathews Canyon damsites on Meadow Valley Wash and the Double Canyon damsite on the upper Muddy River.

In 1944, an additional appropriation of \$25,000 was made available by the United States Government to the Office of Indian Affairs for the purchase of lands and rights-of-way for the White Narrows project.

Proposed Development Program for the White Narrows Project—There is necessity for a water conservation and land development program on the Muddy River and its tributary in order to conserve and expand present agricultural resources. The construction of a dam at White Narrows on the Indian Reservation of a size sufficient to create a reservoir of about 7,500 acre-feet capacity is recommended. It would provide supplemental irrigation for 2,500 acres of presently cultivated land and full irrigation for 600 acres of land in the Indian Reservation, and also provide about 2,500 acre-feet

for flood and silt control. Rehabilitation of the present inclusion of a water supply system is being considered for inclusion in the project, although construction of the White Narrows dam alone is being seriously considered as the first step of a continuing program.

The present dam at Arrowhead Canyon is useful as a silt collector and its capacity can be greatly increased at small expense by raising the dam in the very narrow gorge at the outlet.

The construction of a dam at Double Canyon for flood control and silt collection has favorable features which have been studied by the Army Engineering Office. The site is excellent, although the run-off area above is limited. The area is subject to violent summer storms and cloudbursts which supply large volumes of water in very short periods of time. Students of the U. S. Forest and Range services have expressed the opinion that such a reservoir might contribute much to range conservation.

The elimination of destructive floods down the Meadow Valley wash, which in the past have caused very great damage to the main-line tracks of Union Pacific Railroad, and which have become a serious hazard to the town of Caliente, is a matter of prime importance. The construction of flood control dams at Delmues Canyon, Pine Canyon, and Mathews Canyon will be necessary to remedy these hazards. It will also be necessary to add realignment and enlargement of the natural channel both in and near the town of Caliente.

It is the general opinion that the major floods originate in Pine Canyon, a tributary to Clover Creek. Therefore, in any construction program this dam should be constructed first. It is estimated that a dam 45 feet high, having a crest length of about 220 feet, will cost approximately \$100,000. Such a dam would create a storage capacity of over 3,000 acre-feet.

The Mathews dam site is next in importance, and is located a few miles easterly from the Pine Canyon site. A dam 55 feet high with a crest length of 140 feet would cost in the neighborhood of \$125,000, and would create storage capacity of over 6,000 acre-feet.

A dam in the vicinity of Delmues is also of great importance. Due to the branch line of the Union Pacific Railroad to Pioche passing through the canyon, the cost of a dam here would be considerable, for the railroad would have to be completely relocated for several miles. A dam 50 feet high would cost about \$125,000, and to this must be added the cost of the railroad relocation of about \$250,000, making a total cost of \$375,000.

These figures are purely rough estimates. The results of the Army Engineers' investigation may alter the picture considerably. As for instance, the construction of a dam at Condor Canyon below Delmues would mean the reconstruction of a much greater portion of the railroad and might increase the cost \$250,000 or more. All structures excepting White Narrows would be primarily for flood control.

The following program is suggested for planning purposes:

1945-1947—Construction of the White Narrows dam.....	\$170,000
1945-1947—Construction of Double Canyon dam.....	150,000
1945-1947—Construction of Pine Canyon dam	100,000
1945-1947—Construction of Mathews Canyon dam.....	125,000
1945-1947—Enlargement of channel in vicinity of Caliente.....	25,000
1945-1947—Construction of Delmues dam and rerouting of railroad.....	375,000
Adjudication, engineering, supervision, etc.	87,000

2. HUMBOLDT RIVER, \$3,522,000 (1947-1949)

General Description—The Humboldt River originates in Elko County, northeastern Nevada, and follows a westerly course across the State, terminating in the Humboldt Sink in Pershing County. It is fed by various tributaries on the north and south. It is about 800 miles long and follows a tortuous, winding course, but if shown in broad curves a length of about 300 miles is indicated. The fall of the river between Deeth and Palisade is about 500 feet, between Deeth and Humboldt Sink about 1,400 feet. From Palisade to Lovelock it is 840 feet; between Beowawe and Humboldt House, 567 feet. The channel has an average width of approximately 70 feet. Between Beowawe and Humboldt Sink the grade is 1.6 feet per mile. For long stretches the river flows sluggishly, and except at flood seasons is a small stream. The average annual run off for 34 years is 258,000 acre-feet. Average low flow is about 10 second-feet, and average flood stage about 2,000 second-feet, measured at Palisade.

Land and Population—All cultivated and irrigated lands in Humboldt, Eureka, Lander, Elko, and Pershing Counties receive water from the river or its tributaries, which occupy a drainage basin of 9,000,000 acres. About 3,950,000 acres of the basin is privately owned, of which more than 2,000,000

acres is railroad grant land, owned by Southern Pacific Company through its subsidiary, the Central Pacific Land Company. There are also 1,294,000 acres of land in the Humboldt National Forest. The total irrigated area is 286,013 acres, of which 207,050 may be rated as first- and second-class cultivated lands, and 78,963 as third-class pasture.

About 300,000 acres of land have decreed water rights of 643,000 acre-feet distributed among 600 water users, who are served by as much water as is available in the order of the priority of rights. Profitable crops cannot be grown without irrigation.

The population of the Humboldt Basin is about 20,000, or roughly one-fourth of the State of Nevada. All of these people depend on the river directly or indirectly as the source of income, with the exception of a comparatively small number engaged in mining.

The population of the principal towns in the basin, census of 1940, is as follows:

Elko.....	4,094
Winnemucca.....	2,500
Lovelock.....	1,290
Battle Mountain.....	368
Carlin.....	838
Wells.....	833
	9,923

The population of the counties (in which the towns are included) is as follows:

Elko County.....	10,912
Eureka County.....	1,361
Lander County.....	1,745
Humboldt County.....	4,743
Pershing County.....	2,713
	21,474

These counties, which contain one-fourth of the population of the State, are almost entirely dependent upon the Humboldt River, without which they would be uninhabited desert.

Flood Control—Approximately 100,000 acres of land are flooded during the peak run-off periods in normal years. A portion of the lands so flooded are not entitled to water at all; other lands are entitled to it only at a later period of priority right. The consequences of this uncontrolled flooding is a diminution and loss of water to lands then entitled to it in valleys below, and also poorer crops of hay on land excessively irrigated by such flooding. Such losses are estimated as follows:

1. Flooding of lands not entitled to water, thereby injuring downstream users, approximately 50,000 acre-feet, value \$50,000.
2. Excessive water applied to lands, through lack of control, increasing evaporation losses and diminishing stream flow, 50,000 acre-feet, value \$50,000.
3. Damage to harvest crops in Elko County, \$25,000.

Irrigation Practice—Irrigation of much of the lowlands on both the river and its tributaries is in general primitive and economically unsatisfactory. Most stream diversions are effected by means of willow, brush, and rock dams with poorly designed regulatory outlets. Many of these have no designed means of diversion at all, the changes in height necessary to effect diversion at varying stream stages being accomplished by the addition or the removal of brush and stones. In justice to the progressive and intelligent class of farmers throughout the entire area, it must be stated that the unsuitability of these structures is well known, and in most cases have not been replaced by better ones because of the expense. In the places where regulatory dams have been built, good river control is experienced, but land values are low, and most smaller farms feel that concrete and steel dams are not justified.

These cheap dams are wasteful of water and prohibit proper legal distribution in many places. The water losses affect the entire river.

Development Program—In view of the study of this stream to be made by the U. S. Army Corps of Engineers, which study has been approved by letter to the State Engineer dated August 1, 1940, a forecast at this time must be considered abortive. Such a premature program as outlined here is only for the purpose of completing a report by the Nevada State Planning Board, promulgating a six-year plan for State improvements. The complete comprehensive survey and report eventually to be made by the Army Engineers when the exigencies of national defense have passed, may indicate a very different and better program of development. We list the following items of construction; the initiation and period of time needed for their completion will depend upon the availability of funds and status of world condition. However, for planning purposes we are placing them in the biennium 1945-1947:

Construction of North Fork reservoir; capacity 85,900 acre-feet to 90' contour; cost at \$15 per acre-foot.....	\$1,288,500
Initiation of construction of 48 regulatory steel-concrete dams in river to replace present unsatisfactory structures; total cost.....	720,000
Stream channel improvement, total.....	500,000
Construction of South Fork reservoir; capacity 60,900 acre-feet; cost at \$15 per acre-foot..	913,500
Adjustment and acquisition of water rights, rights-of-way, etc.	100,000

The greatest part of this program would be chargeable to flood control.

3. LITTLE HUMBOLDT RIVER AND ITS TRIBUTARIES, \$177,100 (1945-1947)

General Description—The Little Humboldt River drainage basin covers 1,760 square miles and is located in the northeastern part of Humboldt County. The irrigated land served by the stream system lies in Paradise Valley at an elevation of about 4,400 feet, and has been classified as comprising 8,957 acres first-class, 8,333 second-class, and 15,301 third-class or pasture land; total, 32,591 acres, as of 1936. This estimate made by George Hardman, Cruz Venstrom, and Howard G. Mason does not include large acreage in the south end of the valley to which water has been decreed, but is not presently available. According to the Decree in the Matter of the Determination of the Relative Rights in and to the Waters of the Little Humboldt River and its Tributaries in Humboldt and Elko Counties, 1935, there are 32,300 acres of harvest area, 1,441 acres of meadow pasture, and 12,532 acres of diversified pasture.

Land and Population—The soils in general are good quality black loam, well drained naturally in Upper Paradise Valley. A lack of excessive salines in the soil of the lower valley indicates underground drainage, perhaps to the Humboldt River to the south, into which this stream system once discharged, through a channel now deeply blocked with windblown sand for centuries. The population of the area is approximately 300, of which the town of Paradise comprises 151, according to the census of 1940. Trading is mainly with the town of Winnemucca, county seat of Humboldt county, located about 40 miles south of Paradise post office, to which it is connected by improved roads. About 40 ranches in the valley have decreed water rights.

Irrigation Practice—Nearly all of the 46,000 acres included in the Little Humboldt River water adjudication decree depend on early spring flood water for one complete irrigation per year. This is used on hay and pasture lands, covering about 25 square miles, but in years of low precipitation less land receives water, the supply being overappropriated. There are no storage reservoirs. Diversions are accomplished to most lands by means of rock and brush dams with nonregulatory outlets, which make proper distribution difficult, at all times, and impossible during flood stages.

Flood Control and Stream Utilization—Excellent stream utilization surveys and maps have been made by the U. S. G. S. The spring run off is rapid, as the Santa Rosa Mountains to the north and west are in general low, although some peaks rise above 9,000 feet.

In 1936 the State Engineer initiated a program of limited stream control by channel improvements and construction of steel-concrete diversion dam. This has continued each year with labor mainly supplied by a CCC camp, and the results have been very satisfactory, but much more is needed. The natural channels are clogged with brush. During the rapid spring run off the irrigation systems are inadequate, water spreads over large areas of uncultured brush land which has no decreed water rights and much water is thereby wasted. A reservoir for flood control on Martin Creek, the main tributary, whereby a uniform flow and longer irrigation period would be maintained, supplemented by continued channel improvement on several of the streams entering the valley, and the progressive construction of properly designated permanent structures, would insure much water conservation and better meadow crops.

Development Program for the Little Humboldt River—Flood control reservoir on Martin Creek at Hardscrabble site in Sec. 21, Twp. 43 N., Rge. 41 E., M. D. B. & M. Capacity 6,800 acre-feet, cost at \$20 per acre-foot, \$136,000.

Stream channel improvement consisting of cleaning and elimination of curves, and the construction of 25 regulatory diversion dams at a cost of \$500 each, total \$25,000.

4. TRUCKEE AND CARSON RIVERS, \$12,200,000 (1947-1949)

General Description—The Truckee River originates with the outlet from Lake Tahoe, California, flows about 100 miles and discharges into Pyramid Lake, Washoe County, Nevada. Besides being the natural overflow of Lake Tahoe, it is fed by numerous tributaries in the Sierra Nevada Mountains. The average annual run off at Iceland, California, over a period of twenty-five years has been 453,856 acre-feet, with average flow of 628 second-feet, sometimes reaching a peak of 16,000 second-feet at Reno, with a minimum low flow of 28 second-feet.

The flow and grade of the river permits development of power, and there are five small hydro-electric plants located at different points between Truckee and Reno which generate a total of about 82,344 kilowatt-hours per year. The river furnishes most of the water for irrigation for the Truckee Meadows, and domestic and municipal water for Reno and Sparks. Through a canal 30 miles long with intake 20 miles east of Reno at Derby about 150,199 acre-feet annually is diverted into the Lahontan Reservoir for use on the Newlands Project. The canal has a capacity of about 1,100 second-feet. The remaining water discharges into saline Pyramid Lake where it is lost by evaporation.

Land and Population—Omitting service to the Newlands Project, about 30,000 acres are irrigated.

The population served directly from the river, which includes the towns of Reno, Sparks, and Wadsworth, is approximately 31,000.

Irrigation Practice—Irrigation in the Truckee Meadows is by means of large ditches diverting water from the river and conducting it around the margins of the valley. Limited headwater storage is accomplished in Lake Tahoe, which has been increased by the construction of the Boca Dam in 1937. After many years of controversy between the Sierra Pacific Power Company, the Washoe County Water Conservation District, and the Truckee-Carson Irrigation District (Newlands Project), an agreement was effected in 1936 whereby the use and rights of these agencies was stabilized.

Flood Control—Studies made by the U. S. Army Engineering Corps in 1940-1941 place an estimate of \$4,316,500 flood damages by the Truckee River during the period 1901-1940. The average annual damage is computed at \$40,000.

Much greater use and control is to be desired, however, for the purposes of improved irrigation, the reclamation of new land, and the development of power.

Plan of Army Engineers—The Army engineers have developed a project for multiple and inter-related use of the Carson and Truckee Rivers as a joint project because the Truckee-Carson Irrigation District has rights in both streams. The advance report indicates a total cost of \$11,885,800.

The project contemplates:

1. Enlargement of channel of Truckee River at places between Lake Tahoe and Donner Creek.
2. Use of 20,000 acre-feet in Boca reservoir on the Little Truckee River, for flood control. Capacity at present reservoir, 40,800 acre-feet; 20,000 acre-feet, 49 percent.
3. Diversion canal of 1,800 second-feet capacity from river to north side above Fleish, thence by canal and tunnel to Washoe Valley, lying between Reno and Carson City.
4. Construction of Washoe Valley reservoir, capacity 1,860,000 acre-feet.
5. A power plant at Steamboat Springs to be operated from water from the enlarged Washoe Lake on its return to Truckee River.
6. River improvements in Truckee Meadows by lowering of channel at outlet from valley.
7. Enlargement and improvement of Derby Canal.
8. Watasheamu reservoir on East Carson River, capacity 45,000 acre-feet, for flood control and better irrigation.

Comments—The engineering efficiency with which the Truckee-Carson Project has been worked out, up to its present status, deserves much praise. The primary purpose of the project from the Army's viewpoint, is to provide flood control and electric energy which the Government greatly needs in national defense industries. Irrigation is a secondary consideration in point of urgency, although its importance in this project has been fully recognized. Favorable features may be enumerated:

1. The cost to the local population affected will be low. The cost of transfer of storage from Tahoe to Washoe Valley would be a flood control item amounting to about 30 percent of the total project cost, and be entirely paid for by the Government. Irrigation would pay about 10 percent, and power income 50 percent of the total. The net cost of the project to the people would, it is estimated, be somewhat less than \$1,000,000 for the complete project.

2. Lake Tahoe storage would be exchanged for greatly better storage in Washoe Valley. Lake Tahoe's great surface area of 120,000 acres and evaporation loss of three feet per year results in the high loss of 260,000 acre-feet per year. Two successive dry years would about wipe out storage accumulations. In years of high run off the present outlet from the lake will not suffice to keep the lake from rising to high levels destructive to lakeshore property. Lowering of the outlet rim one and one-half feet and providing for lake level control within limits of two feet as contemplated in the Army's plan would bring complete security to lakeshore property.

It is estimated that, with an annual evaporation loss of four feet, storage losses will be much less than at Lake Tahoe, saving about 288,000 acre-feet per year for use for power and irrigation.

There are several alternate methods by which flood control and additional storage may be obtained on the Truckee River. Three of these are worthy of further study. A plan was considered by E. B. Debler, of the U. S. Bureau of Reclamation, some years ago, in which a dam would be built at the mouth of Prosser Creek which would provide about 150,000 acre-feet storage and a power development. Another plan, which embraces a diversion from the Truckee River into Prosser Valley reservoir, and also the utilization of Boca reservoir with an outlet conduit via tunnel to a power plant near Farad has been studied by the Sierra Pacific Power Company. Another tentative plan has been proposed by Mr. Harry Dukes, Water Commissioner for the Washoe County Water Conservation District, contemplating a dam in the main Truckee River immediately below the mouth of Prosser Creek. A gravity dam 250 feet high is suggested, using both Prosser Valley and the valley just below Truckee for 300,000 acre-feet storage. The outlet would be by tunnel to a plant near Farad. The highway would be moved east and relocated through Martis Valley. Some curves on the railroad would be straightened and it would pass through a conduit in the bed of the reservoir for about five miles. It seems impossible to change the present location of the railroad.

Advantages claimed for each of these projects is that none would involve a change in the Truckee River Agreement and that they would provide better flood control.

The Army's plan has been criticized as providing downstream storage instead of upstream storage, which is ordinarily considered better. It is also feared by some engineers that the use of 20,000 acre-feet capacity in Boca reservoir for flood control will not protect Reno from floods, as they will take care of only about 10,000 second-feet. Floods have reached 30,000 second-feet flow, so that at times 20,000 second-feet may rush downstream. The bridges in Reno are designed to accommodate only 16,000 second-feet—possibly less, if floating flood debris should partly dam the outlet. The proposed canal capacity of 1,800 second-feet would be of little help.

To this the Army's reply is that the proposed storage is much better than that of Lake Tahoe which has great evaporation loss; that the large storage provided by Washoe Lake reservoir will permit the reclamation of new lands, and that the new power made available at Reno will result in some reduction in electricity rates to all users and the probable establishing of new industries.

Apparently the only important change in the present Truckee Agreement that would be necessary would be a transfer of Tahoe storage and a part of Boca storage into Washoe Lake. Irrigation rights would not be materially changed or affected.

3. Present irrigation rights would be fully protected. At all times 300 second-feet will be bypassed downstream at the canal diversion point for the upper Truckee Valley ditches, and 220 second-feet will be put into the lower valley ditches out of Washoe Lake reservoir water after it has passed through the wheels of the upper power plant.

4. The engineers have calculated that 134,000 acre-feet of water will be made available for the reclamation of new lands. This could be applied to the conserved storage water passed on to the Newlands Project. However, with increased Derby Canal capacity and better control by means of the improved storage in Washoe Lake, it would appear that more water may be available to the Newlands Project than it can profitably use.

5. The cities of Reno and Carson City and adjacent country would derive recreational benefits by the creation of Washoe Lake reservoir.

So far as this project has been developed, it is recommended by the State Engineer, but much more work will be necessary before it can be fully recommended. It is urged that careful study be made of all objections, and where they are valid, efforts be made to overcome them. The effect upon existing water rights requires further consideration as they must be fully protected in order to validate the project.

The Army engineers are proceeding with and intend to fully complete their excellent study. The Washoe County Conservation District and the Truckee-Carson Irrigation District are urged to give aid to the end that:

1. Nevada's most valuable asset, water, be conserved and fully used, costly floods be prevented, and the Government be aided by creation of new electric power for defense purposes.
2. About \$3,500,000 of flood control money will be given by the Government for construction, amounting to 30 percent of the cost of the project.
3. About 35,000,000 kilowatt-hours annually of new power will be generated at Reno for development, expansion, and the creation of new industry.
4. Large areas of new lands in western Nevada may be reclaimed and irrigated by water now lost through evaporation in Lake Tahoe and Pyramid Lake.
5. Irrigation and drainage would be improved and much of the evil effect of drought shortages be eliminated in Carson Valley, the Truckee Meadows, and the Fallon district.
6. The people may without delay take advantage of circumstances that will give them the benefits of this great project at extremely low cost.
7. Property values worth more than the total of the invested reimbursable money will be created, and relief costs in the area will be reduced and postwar employment will be provided.

5. WEST WALKER RIVER, \$5,065,000 (1947-1949)

The Army Engineering Office has completed a report and survey concerning flood control on the East and West Walker River.

On the West Walker, development as proposed by the U. S. Army Corps of Engineers for flood control with power is approved by the State Engineer. No additional improvements on the East Walker are suggested at this time.

The project proposes construction of a 1,400-acre reservoir at Pickle Meadows near Bridgeport, California, with a gross storage capacity of 60,000 acre-feet; the construction of a dam for diversion on the Little Walker; a 1,000 c.f.s. canal therefrom to the Pickle Meadows reservoir, and two hydroelectric plants, one at Chris Flat just below the reservoir, and the other in Antelope Valley to which water would be conducted by a pressure pipe line. The total estimated cost is \$5,065,000. Routing studies show that for the period 1901-1940, the run off would have produced 80,300,000 kilowatt-hours of usable power annually. Power benefits are figured at 6.38 mills per kilowatt-hour, amounting to \$511,400 per year. Flood control benefits are confined to the West Walker, and to the Walker below its confluence with the East Walker. It is computed from hydrological records (1903-1940) that 87 percent of all flood damages would be eliminated.

There would be no increase in any cultivated acreage, as there is complete use of all available water now, but the new reservoir would provide better irrigation regulation in Nevada. Flood control benefits are estimated at \$20,100 yearly. The total collateral benefits as evaluated would be \$531,500 annually.

In addition to the above, there are intangible benefits not capable of reduction to figures. Among these are:

1. Distribution of Antelope Valley, California, irrigation water at times required by the crops, and storage to partly supply water in dry years.
2. Better groundwater conditions in Mason Valley, Nevada, through prevention of river floods, and increased control of irrigation by better diversion works.
3. Probable use of 38,000,000 kilowatt-hours annual electric power not yet definitely assigned, for use in mining, refining of metals needed for national defense and also for export power into adjacent electric systems.

Most of the power produced by the two hydroelectric plants would be utilized in the area now served by the Sierra Pacific Power Company. This company is said to favor this project, and has indicated willingness to contract for much of the energy generated.

It is recommended that the proposed project of the Army engineers for development of the West Walker at a total cost of \$5,065,000 be endorsed, and that an initial appropriation of \$3,000,000 be sought by Nevada to permit effective and prompt development.

NEVADA STATE FISH AND GAME COMMISSION

Nevada, with its large acreage of marginal or low-value lands, has potential fish and wildlife areas of great magnitude.

When the time comes that we need to convert our present war industries and activities into useful peacetime living, many thousands of our State people must change occupations. Peacetime jobs for all of these people in private industry and business may be difficult to find, or at least it may require several years to effect the conversion. This means that in order to avoid another paralyzing depression, State Governments as well as the Federal Government, will need to provide work for temporarily unemployed individuals. With this possibility in view, it seems fitting at this time to plan for useful and needed improvements that would not only absorb the excess labor, but would provide new enterprises of lasting benefit to the commonwealth. Projects for the restoration and conservation of fish and wildlife should be made a part of any postwar program of public works in Nevada.

While no comprehensive or overall plan has been developed to a stage where it might be included with this report, a great deal of thought and preparation has been given to it as indicated by the commission's release of November 21, 1944, as follows:

I am taking this means to inform you of the present policy of the Nevada State Fish and Game Commission in regard to hoped-for cooperation between itself and all interested parties in the various counties and should, at the same time, like to introduce our newly appointed State Field Representative.

I sincerely believe out-of-door recreations to be one of the most important and pleasurable heritages of the citizens of the State of Nevada, and it is with just concern that I find that present indications seem to warn of a decrease in the population of fish, wild animal, and bird life in many sections of the State. If true, this is a critical matter, not only from the economic and recreational viewpoint, but currently important from the standpoint of the returning armed serviceman at the conclusion of the present war. A large percentage of these Nevada soldiers are living for the day when they may return to the fields and streams and marshes of Nevada to hunt and fish. The Nation's leading army and civilian psychiatrists, according to recent authoritative articles, recommend hunting and fishing above all other methods of therapy in the mental relaxation of those men who have experienced the horrible realities of battle and it is my opinion that we are absolutely duty-bound, in our capacities of fish and game officials, to make certain our Nevada men return to as good, or if possible, better fishing and hunting than they left. They placed their out-of-doors in our hands for safekeeping.

Heeding this wildlife danger sign, the Nevada State Fish and Game Commission took steps at its November meeting by which it hopes to develop its facilities in the propagation and conservation of fish and game to their fullest possibilities. Following is the tentative plan drawn up at that time:

There would be appointed by the Nevada Fish and Game Commission the office of State Field Representative of the Nevada State Commission. The appointee would supervise the duties of office personnel, hatchery and field operating employees, and, in addition, act as representative with the following additional aspirations:

1. To create a sound management plan whereby the facilities of the State Commission would be used to the utmost efficiency to increase the population and better the environmental conditions of fish and game in the State of Nevada.

2. Acting only in the capacity of scientific adviser, to periodically meet with the various County Commissioners with the idea of developing a long-range scientific plan of planting, opening and closing seasons, law enforcement, etc., and with the hope that such a program would develop cooperation between the various counties by bringing better understanding, a common goal, and an equal sharing of State help.

3. To meet with and gather the fish and game problems of the various county sportsmen's associations, taking them to the State office where they might be solved scientifically, using, when necessary, authorities in Universities and other State Fish and Game Departments.

4. To assist these sportsmen in every way possible in the practical remedying of their problems or the improvement of any fish and game condition.

5. To carry on a study of all streams and other waters throughout the State to find reasons for certain unproductiveness and, with the aid of interested agencies, to attempt to correct biological balances, pollution conditions, and other factors causing unfavorable circumstances for fish life.

6. To carry on a study of wildlife habitats throughout the State to determine why over and under populations exist in certain areas, what species are best adapted, etc., and, in cooperation with all other interested parties, to instigate programs which will work towards the maximum game population any particular environment will support without being detrimental to other interests or itself.

7. To develop a systematic plan for the planting of fish reared in the Verdi State hatchery. A tentative possibility lies along the lines of increasing the size of the Verdi hatchery and the construction of rearing ponds in each county or a district of counties which would be stocked by means of an aerated truck running from the hatchery. This might greatly reduce the mortality now experienced with young fish and increase the State's help to each county.

8. To develop a systematic plan for the propagation and planting of upland birds by the State, whereby all suitable cover in the counties will receive as large a stock of birds annually as possible from the State to supplement the county plant.

9. To establish State shooting grounds for migratory waterfowl to prevent the condition which now exists in many States where private interests have taken over all suitable marshlands.

10. To encourage and systemize cooperation between the U. S. Forest Service, the U. S. Grazing Service, and the U. S. Fish and Wildlife Service and the State Commission in matters of law enforcement and all other conditions pertaining to fish and game.

11. To formulate and set in action methods of reducing the large number of game law violations now reported throughout the State, with the cooperation of sportsmen's groups, county officials, and all other interested agencies.

12. To set up a State-wide plan of education in the hope of building better sportsmen, teaching the game laws and the reasons for them, and furnishing the younger generation with knowledge of conservation and nature.

13. To aid sportsmen and county officials in the formulating of legislation which will correct or prevent conditions detrimental to fish and game, such as river pollution, etc.

14. To furnish a central office where all sportsmen and fish and game officials may find a scientific approach to their problems and an enthusiastic cooperation in any matter which is directed towards the betterment of fish and game conditions in the State of Nevada.

The foregoing points are by no means the entire program but are some of the outstanding matters which were discussed as the most pertinent.

All sportsmen should clearly understand that this program in no way hints of State control of fish and game. The representative can have absolutely no authority over county officials nor county programs. His job will be to help the counties accomplish that which they themselves wish to do. The State department will act only as an aid to the county officials and sportsmen in attempting to protect, conserve, and develop the fish and game of the State. The office will be for the purpose of trying to spend State fish and game funds more efficiently, thereby giving greater aid to each and every county.

Mr. Sessions S. ("Buck") Wheeler, of Reno, who has long been connected with fish and game conservation in Nevada and who has the scientific background and experience necessary for the position, was approached by the commission, and after receiving an understanding of the aims of our body, has agreed to act as our State Field Representative. We feel very fortunate in securing his services and it will be through him that we hope to develop our program and to cooperate with you.

At this time I, as chairman of the Nevada State Fish and Game Commission, wish to offer your organization full cooperation from the State commission in fish and game

matters. Our representative will, in the near future, stand ready to travel to your meeting place at any time you may wish to interview him. Until next spring he will not be entirely free of his other obligations, but will attempt in the meantime, nevertheless, to meet with any group wishing to discuss any matter pertaining to improvement of Nevada's fish and game. He would appreciate receiving from you the monthly date on which your body holds its regular meeting and invites you to include in the letter any suggestions you might wish to offer. During the next few months he will be drawing up plans to increase the State fish plant and to make more upland birds available to the counties next year. He has a very complex job on his hands, but "Buck" loves fish and game and the State of Nevada, and although it will not be accomplished in a short while, we have high confidence in his ability to eventually improve conditions.

We, who hold the future of Nevada's fish and game and great out-of-doors in our hands, have a large responsibility. Because we are Nevadans, I know we will do the utmost within our power to meet this obligation.

Sincerely,

E. J. PHILLIPS,

Chairman Nevada State Fish and Game Commission.

STATE BOARD OF AGRICULTURE

NEVADA STATE AGRICULTURAL SOCIETY

(1) Proposed New Construction and Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
		1945-1947	1947-1949	1949-1951	
1. Fencing Property	GF	\$3,344	.....	.....	\$3,344
2. General Improvements to Structures and Grounds....	GF	12,000	.....	.....	12,000
3. New Exhibit Building.....	GO	.....	\$20,000	.....	20,000
Total Construction Cost.....		\$15,344	\$20,000	.....	\$35,344

(1) Suggested Priority Listing. (2) Method of Financing.

GO—General Obligation Bonds. GF—General Fund Appropriation.

MAJOR REPAIRS AND BETTERMENTS—NECESSITY AND DESCRIPTION

The Nevada State Agricultural Association conducts the Nevada State Fair at Fallon, Nevada, under direction of Nevada Agricultural Society.

The grounds contain a rodeo field with bleachers, grandstand, stalls, chutes, etc., also a main exhibit building, women's exhibit building, poultry shed, hog and sheep shed, dairy barn, and horse barn.

The plant is enclosed with a high board fence, that has been standing for many years.

In order to protect and improve the present facilities, the following items of work are recommended:

1. FENCING PROPERTY, \$3,344 (1945-1947)

Necessity—The present board fence is in a bad state of repair.

Description—It is proposed to tear down the present fence and replace it with a five-foot nonclimbable copper-bearing steel fence, 2-inch mesh, 9 gage, with top rail and angle extension arms for three strands of barbwire, with gates to match.

2. GENERAL IMPROVEMENTS TO STRUCTURES AND GROUNDS, \$12,000 (1945-1947)

Necessity—Painting and repairs to all structures at the site have been too long delayed and if the present investment is to be protected, some action should be taken in the near future. Grounds should be made more attractive.

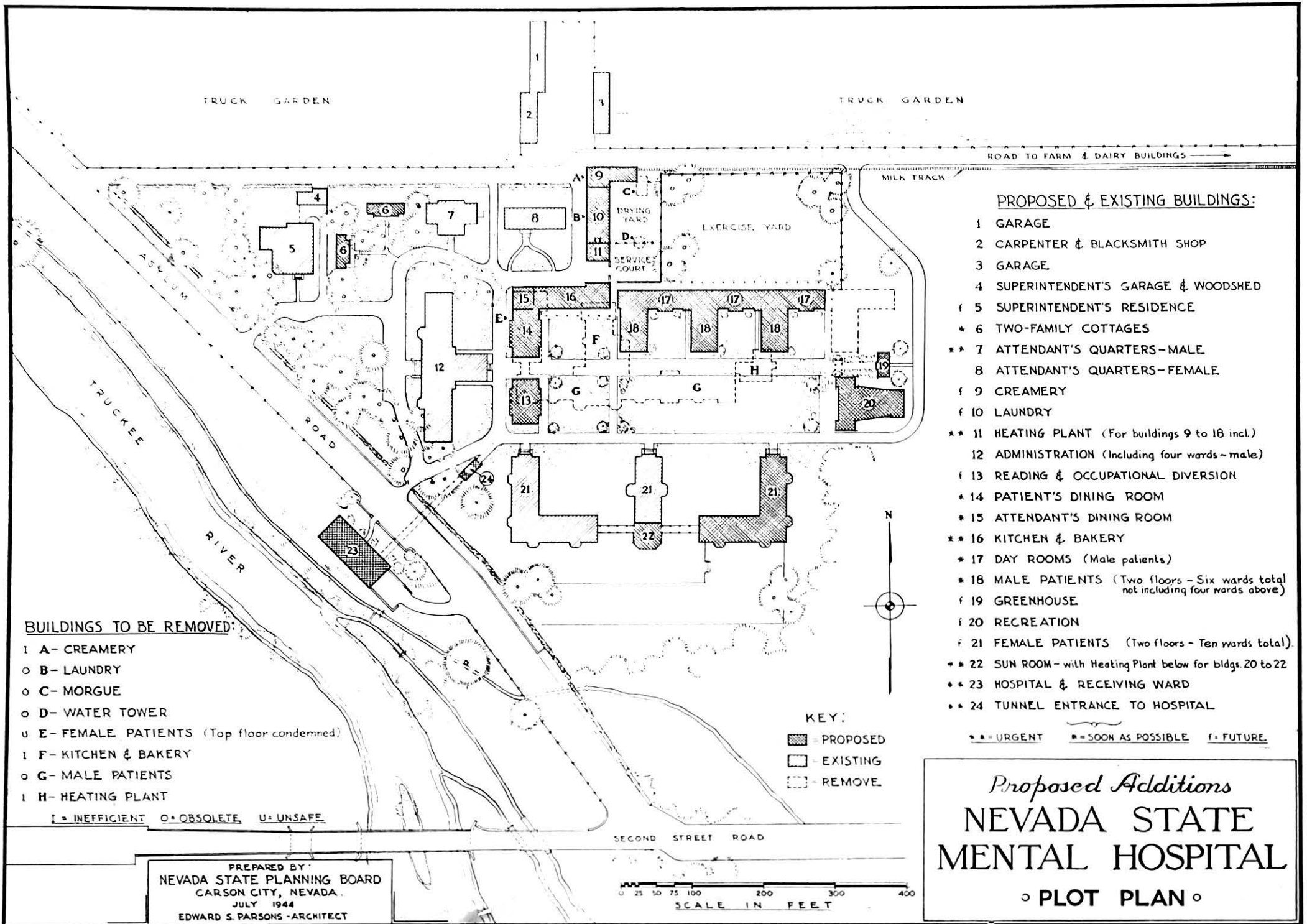
Description—It is proposed to paint all structures, and to make necessary repairs and alterations to existing structures. Also to provide a dust layer for approximately two acres of ground.

These improvements would bring delayed maintenance up-to-date; however, it would have little effect on operating costs.

3. NEW EXHIBIT BUILDING, \$20,000 (1947-1949)

Necessity—In the past, due to the overcrowded condition of available exhibit space, it has been necessary to house some of the exhibits in tents, and to turn away others for lack of facilities. Enlarged space would not only eliminate the crowded condition of the present annual exhibitors, but would allow for expansion by encouraging exhibitors from other fields of enterprise.

It is proposed to construct a frame structure 100' x 50' x 20' to house agricultural, mining, and industrial exhibits.



PROPOSED & EXISTING BUILDINGS:

- 1 GARAGE
 - 2 CARPENTER & BLACKSMITH SHOP
 - 3 GARAGE
 - 4 SUPERINTENDENT'S GARAGE & WOODSHED
 - f 5 SUPERINTENDENT'S RESIDENCE
 - * 6 TWO-FAMILY COTTAGES
 - ** 7 ATTENDANT'S QUARTERS-MALE
 - 8 ATTENDANT'S QUARTERS-FEMALE
 - f 9 CREAMERY
 - f 10 LAUNDRY
 - ** 11 HEATING PLANT (For buildings 9 to 18 incl.)
 - 12 ADMINISTRATION (Including four wards-male)
 - f 13 READING & OCCUPATIONAL DIVERSION
 - * 14 PATIENT'S DINING ROOM
 - * 15 ATTENDANT'S DINING ROOM
 - ** 16 KITCHEN & BAKERY
 - * 17 DAY ROOMS (Male patients)
 - * 18 MALE PATIENTS (Two floors-Six wards total not including four wards above)
 - f 19 GREENHOUSE
 - f 20 RECREATION
 - f 21 FEMALE PATIENTS (Two floors-Ten wards total)
 - ** 22 SUN ROOM-with Heating Plant below for bldgs. 20 to 22
 - ** 23 HOSPITAL & RECEIVING WARD
 - ** 24 TUNNEL ENTRANCE TO HOSPITAL
- ** = URGENT * = SOON AS POSSIBLE f = FUTURE

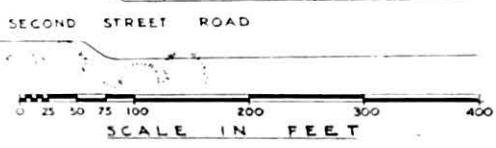
BUILDINGS TO BE REMOVED:

- 1 A- CREAMERY
 - o B- LAUNDRY
 - o C- MORGUE
 - o D- WATER TOWER
 - u E- FEMALE PATIENTS (Top floor condemned)
 - 1 F- KITCHEN & BAKERY
 - o G- MALE PATIENTS
 - 1 H- HEATING PLANT
- I = INEFFICIENT O = OBSOLETE U = UNSAFE

- KEY:**
- ▨ = PROPOSED
 - = EXISTING
 - ⋯ = REMOVE

PREPARED BY:
 NEVADA STATE PLANNING BOARD
 CARSON CITY, NEVADA
 JULY 1944
 EDWARD S. PARSONS - ARCHITECT

Proposed Additions
NEVADA STATE
MENTAL HOSPITAL
 o PLOT PLAN o



CHARITIES, HOSPITALS, AND MENTAL INSTITUTIONS

NEVADA STATE HOSPITAL FOR MENTAL DISEASES, RENO, NEVADA

(1)	Proposed New Construction and Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
			1945-1947	1947-1949	1949-1951	
1.	Heating Plant—First Stage.....	GO	\$35,000	.....	.....	\$35,000
2.	Observation and Hospital Ward.....	GO	98,000	.....	.....	98,000
3.	Tunnel	GO	32,000	.....	.....	32,000
4.	Remove Female Patients' Ward, Kitchen and Bakery	GF	3,500	.....	.....	3,500
5.	New Kitchen, Bakery and Attendants' Dining Room	GO	58,000	.....	.....	58,000
6.	New Male Patients' Ward—First Stage.....	GO	85,000	.....	.....	85,000
7.	Landscaping—First Stage.....	GF	4,000	.....	.....	4,000
8.	Extension of Male Patients' Ward—Second Stage...	GO	.....	\$75,000	.....	75,000
9.	Female Patients' Ward—New.....	GO	.....	50,000	.....	50,000
10.	Patients' Dining Room—New.....	GO	.....	22,000	.....	22,000
11.	Heating Plant—Second Stage.....	GO	.....	15,000	.....	15,000
12.	Remove Old Heating Plant.....	GF	.....	2,000	.....	2,000
13.	Attendants' Cottages	GO	.....	9,000	.....	9,000
14.	Remodeling Second Floor of Administration Building into Wards.....	GF	.....	8,000	.....	8,000
15.	Extension of Male Patients' Ward—Third Stage....	GO	.....	.....	\$75,000	75,000
16.	Remove Old Ward Building for Male Patients.....	GF	.....	.....	5,000	5,000
17.	Recreation Building	GO	.....	.....	40,000	40,000
18.	Women's Day Room.....	GO	.....	.....	25,000	25,000
19.	Reading and Occupational Building.....	GO	.....	.....	30,000	30,000
20.	Reconstruct Creamery and Laundry.....	GO	.....	.....	35,000	35,000
21.	Complete Landscaping.....	GF	.....	.....	6,000	6,000
Total Construction Cost.....			\$315,000	\$181,000	\$216,000	\$712,500

(1) Suggested Priority Listing. (2) Method of Financing.

GF—General Fund Appropriation. GO—General Obligation Bonds.

EXISTING CONDITIONS

The total male and female population at the Nevada State Hospital for Mental Diseases varies between 385 and 400. Increases occur at the rate of 5 percent per year. Turnover, however, is at a much higher rate due to new patients received, dismissals, and losses through natural deaths.

A careful survey of buildings and equipment revealed a startling condition of obsolescence and decay. One ward building has had the top floor condemned as a fire trap; another's foundations are weakened by deterioration of its masonry; the central heating plant and underground feeder system is worn out; the kitchen and food preparation center is inefficient and dismal; and there is no way to care for serious hospital and surgical cases.

Crowding of patients is becoming serious due to obsolescence and the condemnation of the older ward buildings. Such crowding results in the improper segregation of patients. Proper care and treatment cannot be administered.

CURRENT IMPROVEMENTS

Through the use of money appropriated for the 1943-1945 biennium, the former stone residence is being converted into male attendants' quarters with fifteen rooms and its own heating system. The Superintendent's residence will also have its own heating system. Removing these two buildings from the central heating system will temporarily relieve the pressure imposed upon the latter.

Painting and cleaning of the interior of the male patient's ward building was done by patients during the fall of 1944.

RECOMMENDATION FOR FUTURE DEVELOPMENT

Recommendations for improvements are shown on the accompanying plot plan and herein listed in order of suggested priority under the three biennia. A brief description for those of the first biennium is given.

FIRST BIENNIUM, 1945-1947

1. HEATING PLANT (11*).....Estimated cost \$35,000

This plant should be built in three stages, adding boilers and mains as necessary to care for new buildings as they are erected. Present plan can be used to heat female patients' wards (21*) after new male patients' wards (17*, 18) are built.

First stage (biennium 1945-1947) should include brick building, one boiler and heating mains to buildings A, B, G, 12, 15 16, and first units of 17 and 18. (See plot plan.)

2. OBSERVATION AND HOSPITAL WARD (23*).....Estimated cost \$98,000

This building should be completely separated from the main group. Two locations are possible, one as shown, the other north of the Superintendent's house in the truck garden area. Thus, it can be used as a receiving ward, observation ward, classification ward, and treatment hospital for borderline cases not requiring confinement. Isolating this building from the main group is of definite physiological value, inasmuch as borderline cases can be treated without the stigma of being classified insane. Reinforced concrete and brick construction.

3. TUNNEL (24*).....Estimated cost \$32,000

A tunnel should be installed under the highway to connect observation and hospital ward to main grounds if location shown on plot plan is chosen. Reinforced concrete and tile lined.

4. REMOVAL OF FEMALE PATIENTS' WARD (E*) AND KITCHEN AND BAKERY (F*) Estimated cost \$3,500

These buildings must be removed as they are unsafe and inefficient. Transfer patients to other quarters temporarily.

5. NEW KITCHEN AND BAKERY (16*) AND ATTENDANTS' DINING ROOM (15*) Estimated cost \$58,000

These units must be included so that food can be adequately prepared and served. Build new kitchen before old is removed. Reinforced concrete and brick.

6. MALE PATIENTS' WARD BUILDING (17* and 18)—First stage Estimated cost \$85,000

This building should be the first of three stages for male patients. It should include two wards (18*) and two day rooms (17*) with small dining rooms. Ramps to second floor. Reinforced concrete and brick.

7. LANDSCAPING—First Stage.....Estimated cost \$4,000

Sufficient funds should be provided to protect, remove, and replace lawns, trees, shrubbery, walks and paving during and after construction periods.

SECOND BIENNIUM, 1947-1949

8. Extension of Male Patients' Ward (17* and 18)—Second stage.....	\$75,000
9. New female patients' ward building (21*).....	50,000
10. Additions to heating plant (11*)—Second stage.....	15,000
11. Patients' dining room (14*).....	22,000
12. Remove old heating plant (H*).....	2,000
13. Construct attendants' cottage (6*).....	9,000
14. Remodel second floor of Administration Building into wards.....	8,000

*See plot plan.

THIRD BIENNIUM, 1949-1951

15. Extension of male patients' ward (17* and 18)—Third stage.....	\$75,000
16. Remove old ward building for male patients (G*)	5,000
17. Recreation building (20*).....	40,000
18. Womens' day room (22*).....	25,000
19. Reading and occupational building (14*)	30,000
20. Reconstruct Creamery and Laundry (9 and 10*).....	35,000
21. Complete landscaping	6,000

Each new ward building should have a small therapeutic room for the treatment of spasmodic cases. It has already become impractical to move patients from ward buildings to Administration building at odd hours.

*See plot plan.

NEVADA STATE ORPHANS' HOME, CARSON CITY, NEVADA

(1)	Proposed New Construction and Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
			1945-1947	1947-1949	1949-1951	
1.	Minor Repairs to Present Building.....	GF	\$3,100			\$3,000
2.	Three Cottages.....	GO		\$21,600		
		OF		50,400		72,000
3.	Administration and Hospital.....	GO			\$32,000	32,000
4.	Service Building	GO			16,000	16,000
5.	One Cottage	GO			24,000	24,000
6.	Recreation Building	GO			14,000	14,000
7.	Landscaping and Walks.....	GF			3,000	3,000
Total Construction Cost.....			\$3,100	\$72,000	\$89,000	\$164,100

(1) Suggested Order of Priority. (2) Methods of Financing.
GO—General Obligation Bonds. GF—General Funds. OF—Outside Funds.

THE COTTAGE SYSTEM

The Division of Child Welfare Service of the Nevada State Welfare Department has carried on extensive research to determine the most proper and up-to-date system for the rearing of unfortunate and orphaned children.

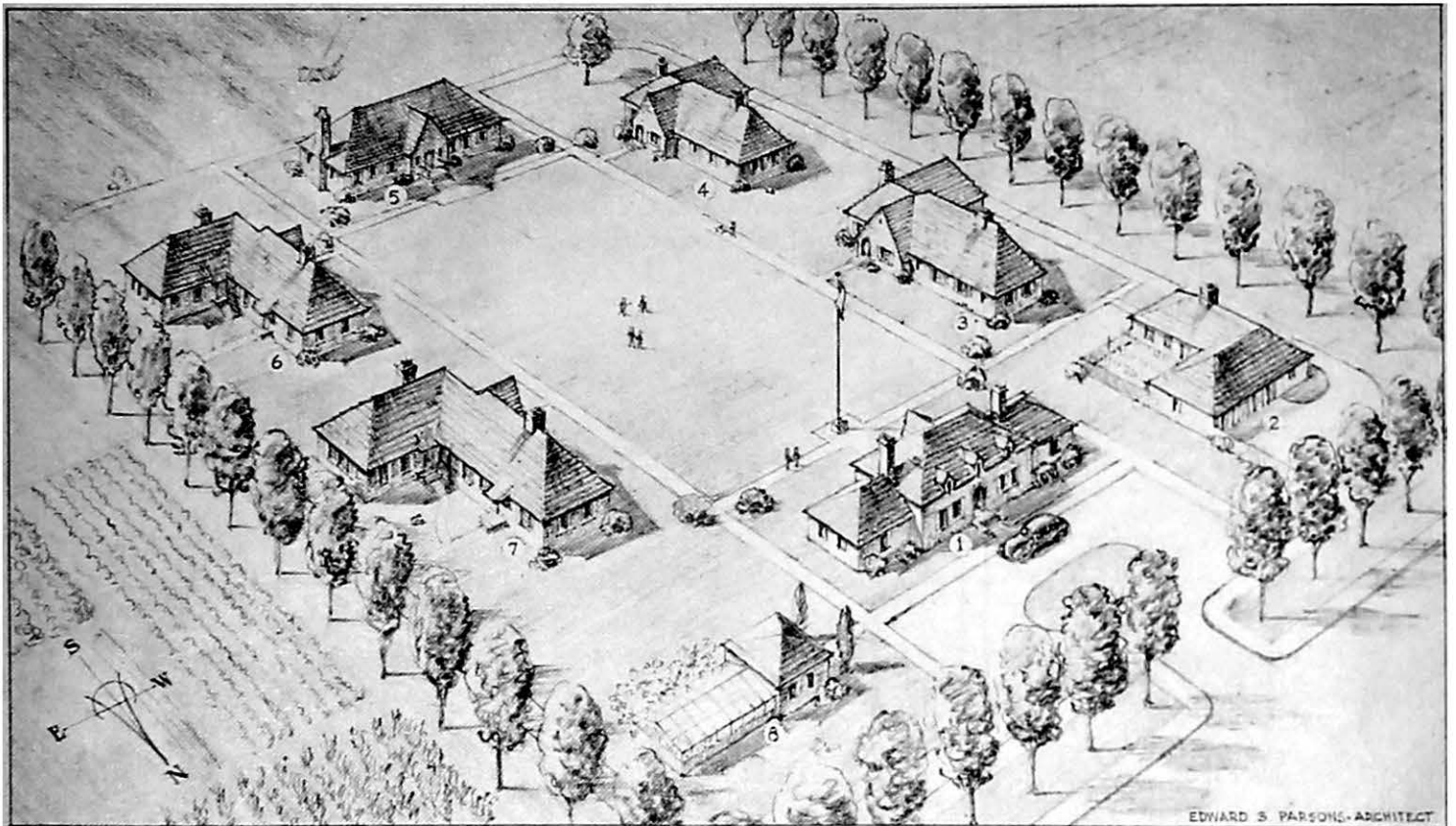
The method found to be the most beneficial is known as the "Cottage System." Children are divided into "family" groups. Each "family" group contains from 10 to 16 boys and girls of various ages, and supervised by a matron or man and wife. The family is housed in a cottage designed and planned to function as a normal home. Thus, the system relieves as nearly as possible the stigma of being raised as an orphan, which causes maladjustment among children when raised in a building bearing all of the aspects of an institution.

The cottages can also be used to care temporarily for crippled children and the mentally deficient until such time as homes for these types of dependent children are found in other States.

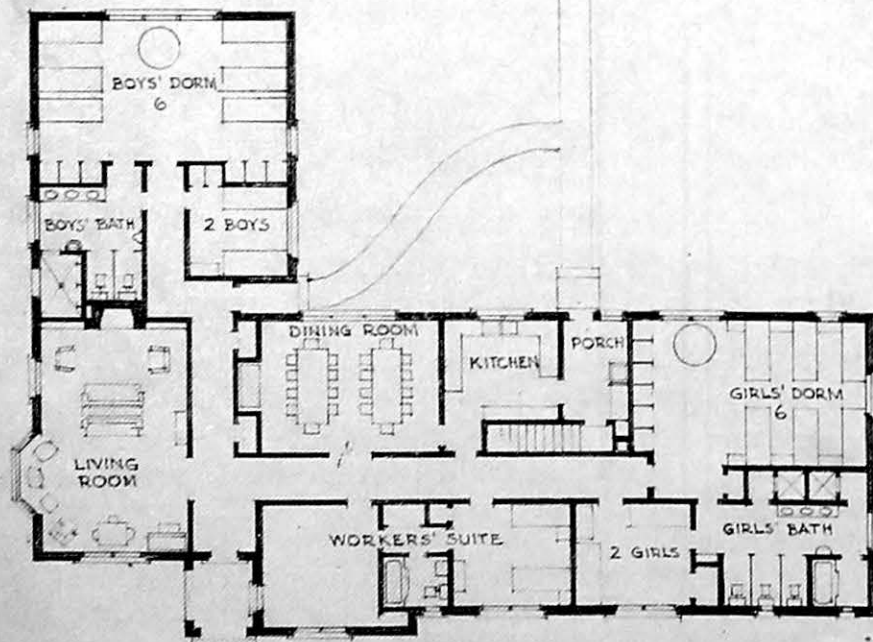
Supplementing the cottages are the necessary adjuncts such as an administration building, a hospital, a service building, and a recreational building, which are briefly outlined below. The practice of conducting a farm and dairy, if continued, will determine the necessity for other buildings, such as a barn, sheds, dairy building, pens, etc.

RECOMMENDATION FOR FUTURE DEVELOPMENT

The present orphanage and physical plant is in good condition except for minor repairs which must be made during the first biennium. The transition for changing from an institutional orphanage to children's home can be made during the second and third biennium.



AERIAL VIEW



TYPICAL COTTAGE PLAN

5 0 5 10 15 20 25 30 35
SCALE IN FEET

PROPOSED NEVADA STATE CHILDREN'S HOME

PREPARED BY • THE NEVADA STATE PLANNING BOARD • CARSON CITY, NEVADA • JANUARY, 1945

FIRST BIENNIUM, 1945-1947

1. Minor repairs to present building as follows:

Repair rotted rear porch by installing new concrete piers, new beams and new floor.

Normal expenditures such as are needed to maintain heating plant, to replace broken windows, screens, and for painting and decorating. Estimated cost, \$2,000.

Adopt the "Cottage System." Appropriate 30 percent of cost of three cottages, or \$21,600, to be used only if an additional 70 percent can be raised through outside sources. Such funds to be used in the beginning of the second biennium of 1947-1949.

SECOND BIENNIUM, 1947-1949

With reference to the drawing showing the proposed Nevada State Children's Home, the plant can be rebuilt as follows:

Select a site on the acreage east of the present home and bordering Fifth Street.

1. *Three Cottages.* Build three cottages, each to house from 16 to 18 children, or a total of 48 or 54. A study of the typical cottage plan will show the elements desired.

THIRD BIENNIUM, 1949-1951

The present Orphans' Home building (without the wings) can be used as an administration building and hospital.

OR, MORE SUITABLE

2. *An Administration Building* should be built in character with the cottages. This building should have a small reception room and office, living quarters for the Superintendent and wife, living quarters for a grounds keeper and wife, with dining room and kitchen common to both.

3. *The Hospital* should be placed in one wing of the administration building, containing a ward of three or four beds, a clinic room for treatment of common ailments, and equipped with a dental chair for use by the Child Welfare Service.

4. *A Service Building* should follow which should contain the plant laundry, a linen, sewing, and clothing room, a food storage commissary, and garages and maintenance shop.

5. *One Cottage.* If the population of the cottages should grow, then a fourth cottage should be built.

6. *A Recreation Building* would be needed in the future as an outlet for children pursuing hobbies such as woodworking, modeling, and to be used as a rainy-day rompers room.

7. *Landscaping and Walks* must be considered in the appropriations to make the project attractive and livable.

8. *Other buildings* such as a greenhouse, dairy building, and barns could be added as the need for such arose.

KEY TO BUILDINGS

1. Administration and Hospital Building.
2. Service, Laundry, and Garage Building.
3. Cottages.
4. Cottages.
5. Recreation Building.
6. Cottages.
7. Cottages.
8. Greenhouse.

NEVADA STATE SCHOOL OF INDUSTRY, ELKO, NEVADA

(1) Proposed New Construction and Improvements	(2)	ESTIMATED EXPENDITURES			Total six- year period
		1945-1947	1947-1949	1949-1951	
1. Enlarge Personnel and Girls' Quarters.....	GF	\$6,750	.....	.....	\$6,750
2. Gymnasium	GO	.....	\$18,000	.....	18,000
3. Improvements to Main Building.....	GF	16,825	.....	.....	16,825
4. Surface Driveway and Park Area.....	GF	3,518	.....	.....	3,518
Total Construction Cost.....		\$27,093	\$18,000	.....	\$45,093

(1) Suggested Priority Listing. (2) Method of Financing.

GO—General Obligation Bonds. GF—General Fund Appropriation.

MAJOR REPAIRS AND BETTERMENTS—NECESSITY AND DESCRIPTION

The Nevada State School of Industry is located on U. S. Highway No. 40, four miles east of Elko. The school grounds consist of about 40 acres. There are three buildings: the main building, constructed in 1913, house the boys; the girls' home, and the Superintendent's residence. About one-half the acreage is irrigated for farming. A small dairy herd supplies ample milk.

Much of the manual labor involved in the proposed program can be done by the school, without cost to the State, other than for materials or skilled labor to supplement and direct the work. This would include interior painting and decorating. The increased cost has been included in the estimates of cost shown in the Six-Year Improvement Program.

1. ENLARGE PERSONNEL AND GIRLS' QUARTERS, \$6,750 (1945-1947)

Necessity—Enlarged quarters are necessary to properly house girl population and personnel. Removal of personnel quarters from main building would provide added space for boys now housed under unsatisfactory conditions in basement.

Description—It is proposed to extend present structure 45' in length and 30' in width over present garage and laundry, second floor to provide apartment for man and wife attendants and living quarters for girls. Walls to be of cinder blocks processed on premises. Standard hip roof.

2. GYMNASIUM, \$18,000 (1947-1949)

Necessity—At present, indoor play facilities at the school are too limited. The lack of such facilities as an outlet for the dynamic physical energy of youth during the winter, enhances the very difficult problem of management and rehabilitation at the school. This is a pressing need.

Description—It is proposed that a gymnasium 40' x 90' be built of concrete masonry block with floor and roof constructed in a fireproof manner.

3. IMPROVEMENTS TO MAIN BUILDING, \$16,825 (1945-1947)

Necessity—The main building was constructed in 1913. It is of fireproof construction with brick exterior walls, reinforced concrete frame and floors. The building has a composition roof. Maintenance of the structure has been deferred to too great an extent. The interior walls and floors are in need of repairs and painting. The plastering is in bad condition and in many places has fallen from the laths.

Description—It is proposed to make the following repairs and alterations:

Kitchen. Enlarge—modernize into one unit 28' x 30' x 10'. Concrete floor.

Reception Room. 38' x 18' x 10'. New floor. Redecorate.

Junior Dormitory. 45' x 20' x 10'. Redecorate.

Night Attendant Room. 12' x 13' x 10'. Redecorate.

Office. 12' x 14' x 10'. Redecorate.

Basement. 45' x 90' x 9'. Walls and ceiling to be chipped and plastered. Paint.

Heating Plant. New heating plant with stoker to be installed.

Power Plant. To be installed in basement; 400 r. p. m. engine, 25-30 H.P., to drive 15 K.W. 120-240 V. 60 Cycle generator.

4. SURFACE DRIVEWAY AND PARKING AREAS—LANDSCAPE AND ROADSIDE BEAUTIFICATION, \$3,518 (1945-1947)

Necessity—A good approach from the main highway to the institution is badly needed, also parking area around the buildings. Roadside beautification will improve general appearance of property.

Description—Surface driveway and parking area, plant trees and shrubbery. Install small pipe line for water to be used for irrigation and to perform incidental and appurtenant work. 20,500 square feet of surfacing.

NEVADA STATE PRISON, CARSON CITY, NEVADA

(1)	Approved Alterations and New Construction	(2)	ESTIMATED EXPENDITURES			Total six- year period
			1945-1947	1947-1949	1949-1951	
1.	New Cell Block.....	GO	\$158,200	.....	.....	\$158,200
2.	Third Story Addition.....	GO	46,200	.....	.....	46,200
3.	Alterations	GO	30,600	.....	.....	30,600
4.	Security Wall.....	GF	.....	\$26,664	.....	26,664
Total Construction Cost.....			\$235,000	\$26,664	.....	\$261,664

(1) Suggested Priority Listing. (2) Method of Financing.

GO—General Obligation Bonds. GF—General Fund Appropriation.

MAJOR ALTERATIONS AND CONSTRUCTION—NECESSITY AND DESCRIPTION

The 1941 Legislature authorized a State bond issue in the amount of \$265,000, the proceeds to be used for a new cell block and other major improvements at the State Prison.

Plans and specifications are entirely complete and accepted by the Board of Prison Commissioners. Sixty percent of the stone needed for construction of cell block has already been quarried and cut by prison labor, at a minimum of cost. In fact, the only cost is the increased allowance of approximately 50 cents per day for food and clothing given the prisoners performing this work.

Contracts have not been let and probably will not be let for sometime to come due to restrictions placed on construction materials essential to the war effort. The prisoners will continue the processing of building blocks; however, actual construction will of necessity be postponed until the postwar period, at which time it is possible that Federal assistance might be available for this work, which would result in a greatly reduced cost to the State Government for this project. \$30,000 of the original issue of \$265,000 in bonds have been sold.

The first building at this State institution was constructed in 1869. In 1921 the present and only cell block was added, since which time there have been no major repairs or betterments. The physical plant of the prison is carried on the books of the State Government in the amount of \$386,000. The existing cell block was designed to house 128 men in separate cells, that number of men constituting about the population when the structure was erected.

The following tables indicate the average number of prisoners during 1944 to be 237, or an increase of more than 85 percent.

YEARLY AVERAGE		HIGHEST NUMBER DURING THE YEAR	
1935	171	1935	190
1936	204	1936	225
1937	212	1937	251
1938	234	1938	260
1939	245	1939	284
1940	271	1940	305
1941	266	1941	302
1942	238	1942	268
1943	238	1943	268
1944	237	1944	278

Present population as of December 20, 1944, 220. Average 1944, 237.

An analysis of the population reveals that less than 25 percent are natives of Nevada. However, this does not alleviate the State's burden or responsibility, because once convicted, the prisoner cannot be returned to the State of his nativity for incarceration. A careful study of trend in prison population in western States is indicative of an uptrend, at a rate equal to the last five years, the prime factor being the convenient and rapid mode of transportation which brings foot-loose transients in increasing numbers from the more densely populated sections of the country. It should not be charged that little or no opportunity has been afforded for rehabilitation; rather, it is believed that the State of Nevada should do its full share in retrieving these unfortunate men, a number of them within its prison walls for the first time. There follows the necessity and description of the proposed projects requested at this time:

1. NEW CELL BLOCK, \$188,200; ORIGINAL ESTIMATE (1945-1947)

Necessity—There are at present 220 men at the State Prison; of this number, 21 are at the prison farm, 5 in the hospital, and 3 in confinement for infractions. This leaves 191 prisoners to be crowded into 128 cells from 4 p. m. until waking hour next morning, regardless of age, habits, and crime record. Proper segregation is not possible under such conditions, therefore, little, if any, attempt can be undertaken for rehabilitation. The overcrowding is extremely insanitary. The locking devices to the cells are obsolete; as many as 16 cells must be unlocked in case there is need to remove a prisoner because of sudden illness or death. This factor, together with makeshifts resorted to because of crowding, are a menace to safety.

Description—The plans for the proposed project call for reinforced concrete floors and interior and exterior stone walls. Modern tool resisting steel cells, with modern selective locking devices, will be fitted into the block. The structure will be four stories in height (47' x 112'), joining the present cell block on the south. The new unit will accommodate 64 one-man cells (two floors having 32 cells each); forty four-men cells (two floors having 20 cells each); and four dormitories housing 20 men each (one dormitory on each floor). This addition, with existing facilities, would accommodate 432 men, thereby providing adequate housing for segregation and increased population.

Effect on Operating Costs—Increase in number of employees is not considered at this time. The estimated increase in cost of power and heat is approximately \$3,600 per year.

The project should reduce per capita costs over the long term by a substantial percentage.

2. THIRD STORY ADDITION, \$46,200 (1945-1947)

Necessity—The hospital space is cramped and deplorably lacking in facilities. The women's quarters are not sufficiently isolated from cross circulation of men prisoners; are poorly ventilated and inexcusably inconvenient. The gas chamber is poorly located (it must be moved when addition is added). This also is true of the cells for condemned prisoners. There are no padded cells, which at times are greatly needed.

Description—It is proposed to build a third story over the present kitchen and dining rooms of the same general construction as the new cell block. It should be approximately 47' x 150', in which area the following would be located:

Hospital, operating room, and dispensary to accommodate 25 patients.

Eight cells and day room for women.

Gas chamber and equipment room.

Two cells for condemned.

Three padded cells.

Effect on Operating Costs—Maintenance and operating expense probably will be increased \$450 annually.

3. ALTERATIONS, \$30,600 (1945-1947)

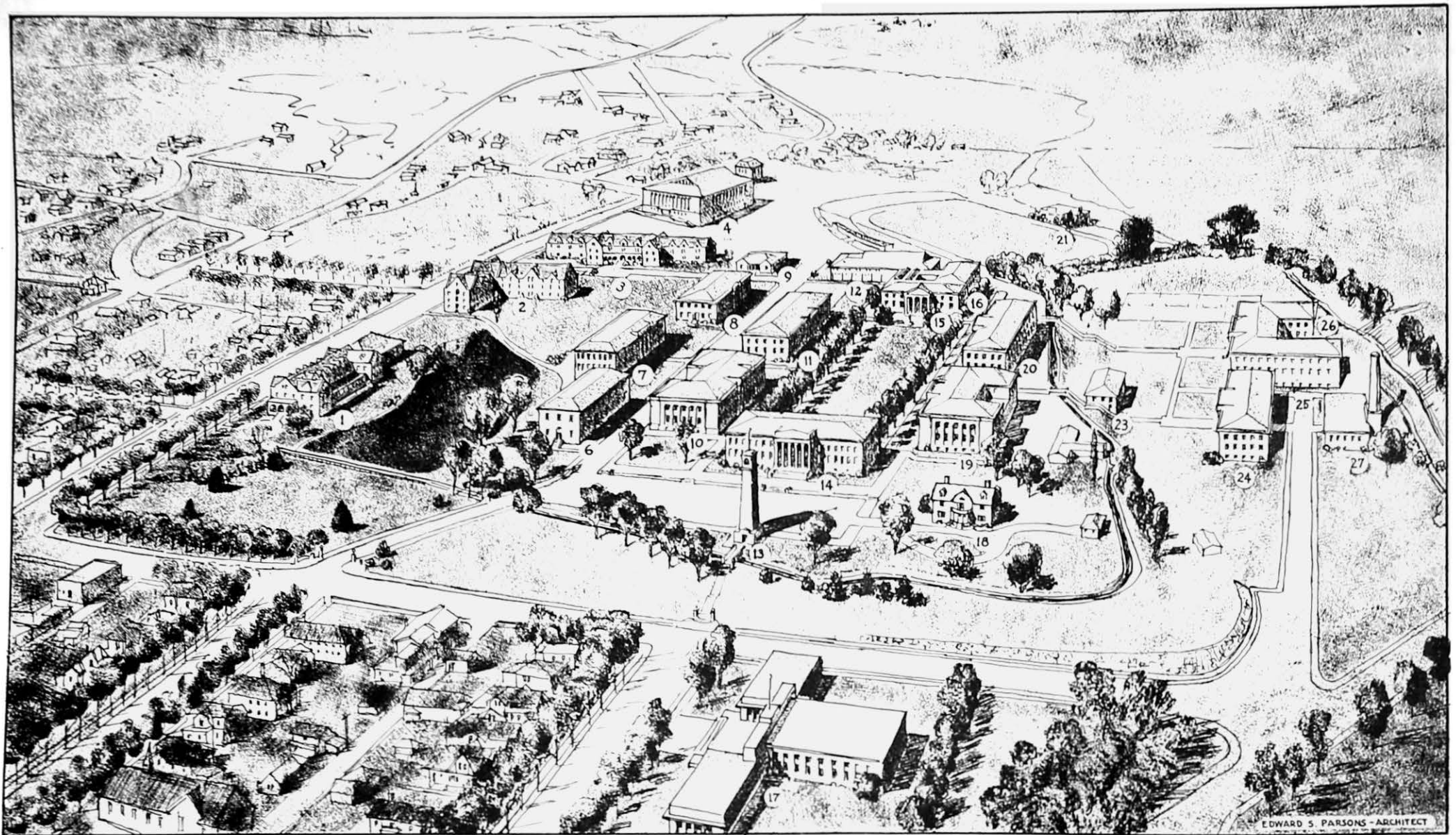
Necessity—The present main-line kitchen and dining rooms are too small. The visitors' section is a menace to safety and could readily be used for escape. The heating plant is inadequate.

Description—These alterations shall be to the ground floor. On the ground floor the prisoners' toilet and shower room will be modernized and the visitors' section relocated for safety. On the first floor the dining rooms and kitchen will be relocated and enlarged; new guardrooms added; the guards' bathroom modernized. Included in the alterations will be the complete reconditioning of the heating plant, with the addition of a new boiler.

4. SECURITY WALL, \$26,664 (1947-1949)

Necessity—The prison yard is not properly fenced. The excavation to provide stone for proposed building construction will enlarge the inner space of the yard and it will be necessary to move and extend present wall in order to enclose the entire prison plant.

It is proposed to use prison labor as far as is feasible in the work and construction described in the foregoing.



PROPOSED ADDITIONS TO THE UNIVERSITY OF NEVADA

PREPARED BY • THE NEVADA STATE PLANNING BOARD • CARSON CITY, NEVADA • DECEMBER 1944

EDUCATION

KEY TO UNIVERSITY OF NEVADA BUILDINGS

1. Manzanita Hall (Women's Dormitory) and Dining Hall	Existing
2. Artemisia Hall (Women's Dormitory) with future wing	Existing and Future
3. Lincoln Hall (Men's Dormitory) with future wings	Existing and Future
4. Gymnasium	Existing
5. Hatch Building (Agricultural Experiment Station) North of No. 4.....	Existing
6. Library	Existing
7. Agriculture Building	Existing
8. Education Building.....	Existing
9. Hospital	Existing
10. Liberal Arts Building (Classroom Building—replacing Stewart Hall and English Hall).....	Future
11. Student Union or Life Science Building (replacing Agricultural Extension Building).....	Future
12. Armory and Military Science (to be converted from old gymnasium).....	Future
13. Bell Tower (bell and cupola from Morrill Hall).....	Future
14. Administration and Auditorium Building (replacing Morrill Hall).....	Future
15. Mackay School of Mines.....	Existing
16. Bureau of Mines.....	Existing
17. Student Union Building—Alternate location.....	Future
18. President's House	Existing
19. Mackay Science Building.....	Existing
20. Electrical and Mechanical Building replaced by Future Library and Fine Arts.....	Existing and Future
21. Training Quarters.....	Existing
22. Greenhouse (East of No. 19).....	Existing
23. Veterinary Science Building.....	Existing
24. Life Science Building—Alternate location.....	Future
25. Electrical Engineering Wing.....	Future
26. Engineering Building.....	Existing
27. Mechanic Arts Building.....	Future

BUILDINGS NOT SHOWN

Heating Plant (to be south of Veterinary Science Building (23*)).....	Future
Maintenance Shop (to be near Hatch Building (5*)).....	Future
Farm Shop Building (to be near Hatch Building (5*))	Future
Journalism Building (to be west of School of Mines (5*) and south of Armory (12*), converted from English Hall).....	Future

*See plot plan.

UNIVERSITY OF NEVADA, RENO, NEVADA

Proposed New Construction and Improvements		ESTIMATED EXPENDITURES			Total six- year period
		1945-1947	1947-1949	1949-1951	
(1)	(2)				
1.	Heating Plant—Redesign and Relocation.....GO	\$89,500	.....	.....	\$89,500
2.	Classroom Building.....GO	365,000	.....	.....	365,000
2A.	Move and Convert English Hall for Journalism.....GO	15,000	.....	.....	15,000
3.	Addition to Engineering Building.....GO	100,000	.....	.....	100,000
4.	Life Science Building.....GO	450,000	.....	.....	450,000
5.	Student Union Building.....OF	.....	\$497,000	.....	497,000
6.	Administration Building.....GO	.....	105,000	.....	105,000
7.	Maintenance Shop.....GO	.....	39,000	.....	39,000
8.	Reconvert Old Gymnasium to Armory.....GO	.....	19,625	.....	19,625
9.	Greenhouse Addition.....GO	.....	12,000	.....	12,000
10.	Improve Dormitories.....GO	.....	108,294	.....	108,294
11.	Wings to Lincoln Hall.....GO	.....	.....	\$195,513	195,513
12.	Mechanical Arts Building.....GO	.....	.....	175,000	175,000
13.	Farm Shop Building.....GO	.....	.....	40,000	40,000
Total Construction Cost.....		\$1,019,500	\$780,919	\$410,513	\$2,210,932

(1) Suggested Priority Listing. (2) Method of Financing. GO—General Obligation Bonds. OF—Outside Funds.

NOTE—If the Federal Government embarks on a Public Works program, then the States' plan could be enlarged without additional expense to the State. The financing of any State program should take this probability into consideration.

BRIEFS FROM THE ACTS CREATING THE POLICY OF THE UNIVERSITY

In 1866 the State of Nevada, under the terms of the Morrill Land Grant of 1862, was granted 90,000 acres of land "for the endowment, support and maintenance of at least one college whose leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts."

The Constitution of the State of Nevada ratified in 1864 declares that the "Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State university which shall embrace departments for agriculture, mechanic arts, and mining."

In 1887 the Hatch Act was passed in the Congress of the United States authorizing the erection of agricultural experiment stations "to aid in the acquiring and diffusion among the people of the United States of useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiment respecting the principles and applications of agricultural science."

GROWTH OF THE UNIVERSITY

Graphic representation of the actual and estimated growth of the University is shown on Charts I, II, and III. Chart II shows the growth by enrollment, Chart III, the growth by buildings, and Chart I, shows the State population trend from 1890 to 1960. Future growth and building requirements might well be predicated by these trends.

Of particular interest is the comparison of the low points of enrollment in 1918 during World War I (285 students) with the enrollment in 1945 during World War II (472 students). If the enrollment growth between 1920 and 1925 can be used as a basis for comparison, and providing World War II is over within three years, the recovery should be rapid. It may then be assumed that by 1950 student enrollment will reach approximately 1,400, and by 1955, enrollment will have extended to 1,700. (See chart.)

The growth of the campus by buildings has been steady through the years except for the period of 1930 to 1940, when but one building was erected. As a result, the mounting enrollment of this period began taxing all campus facilities for space and equipment. By 1940, the enrollment of 1,267 students found the University sorely pressed for suitable classroom and laboratory space. The addition of the Engineering Building in 1941 helped somewhat to relieve the pressure. If World War II had not interrupted the natural growth in enrollment, the lack of adequate facilities would have become a major problem.

GRAPHIC COMPARISON OF GROWTH OF POPULATION, UNIVERSITY ENROLLMENT, AND UNIVERSITY BUILDINGS IN THE STATE OF NEVADA

CHART NO. I. GROWTH OF STATE POPULATION—ACTUAL AND ESTIMATED

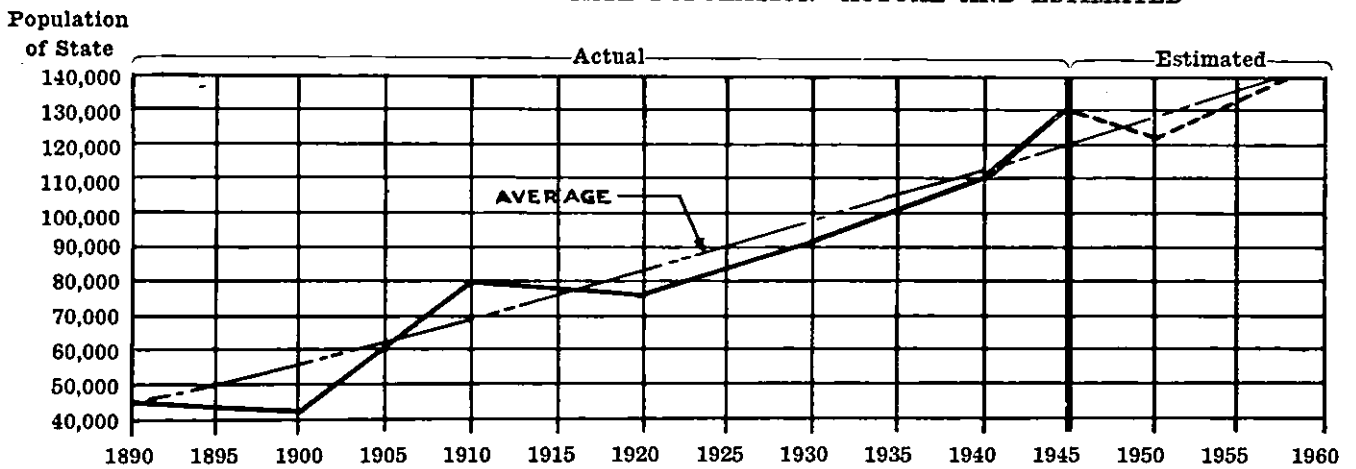


CHART NO. II. GROWTH OF UNIVERSITY BY ENROLLMENT—ACTUAL AND ESTIMATED

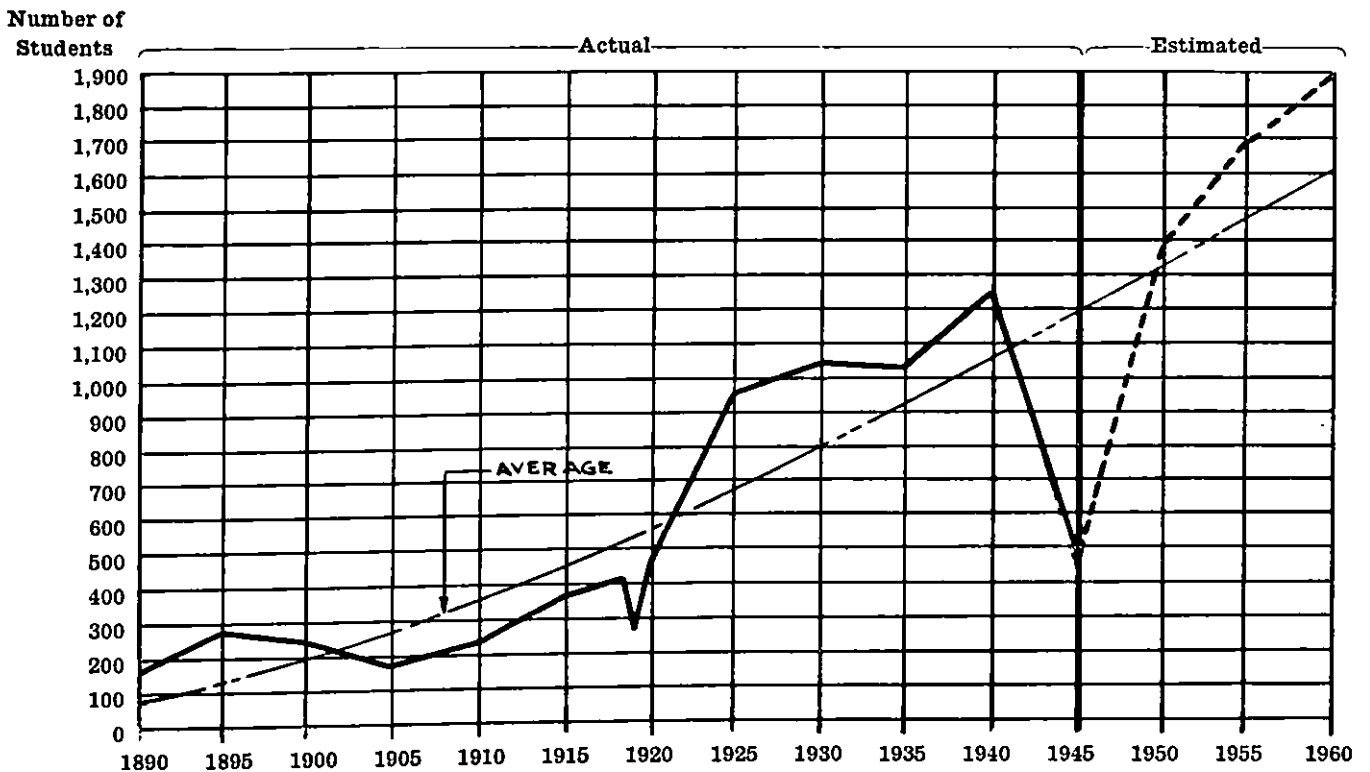
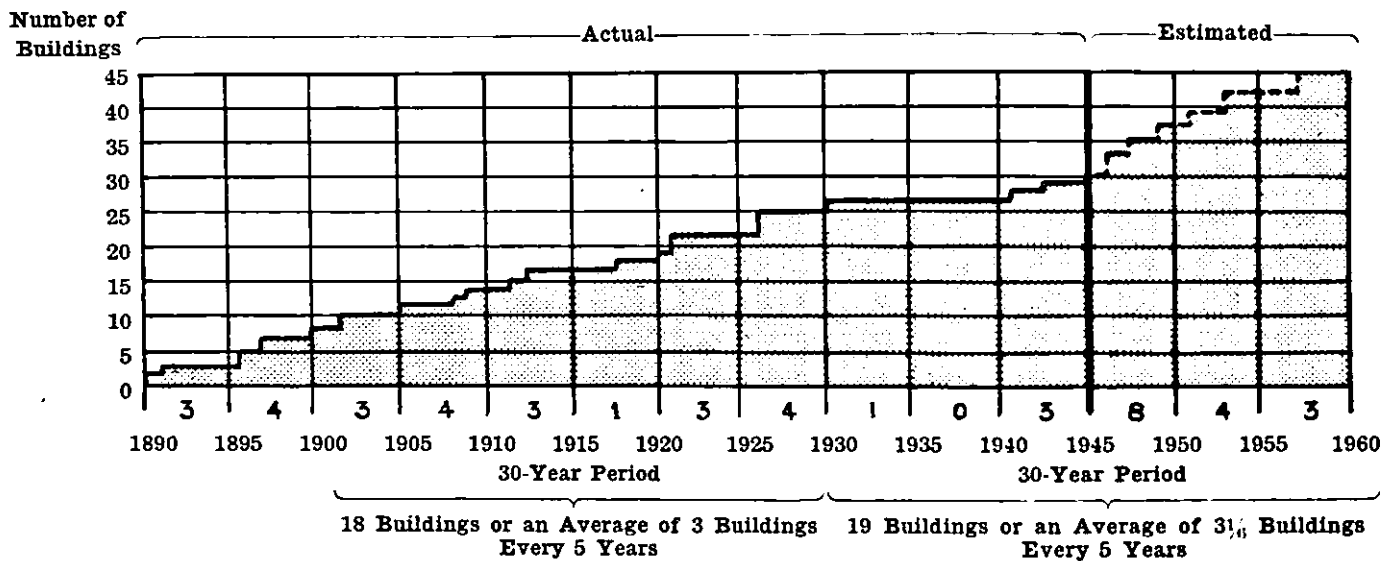


CHART NO. III. GROWTH OF UNIVERSITY BY BUILDINGS—ACTUAL AND ESTIMATED



FUTURE POLICY OF THE UNIVERSITY

The University administration has the opportunity of shaping a long-range policy for the advanced training of the State's future citizens and planning a building program to meet the requirements of this policy. Preliminary studies of the needs for various courses of instruction and necessary buildings have been made. However, they should be completed before a definite overall program can be established.

IMPROVEMENTS AND ADDITIONS

Proposed additions and replacement to the University plant are shown in the air-view perspective. Therefore, new buildings are shown in the suggested locations, with some replacing the older buildings as a means of centralizing the functions of the University.

It is realized that the proposed changes and additions shown are possible only as the need for them becomes evident. However, projects now considered essential to the future welfare of the University are herein presented.

1. HEATING PLANT—REDESIGN AND RELOCATION, \$89,500 (1945-1947)

Necessity—The twenty-six (26) buildings now built are heated by hot water and steam. Two hot-water boilers supply heat to twenty-three (23) buildings, hot water being pumped through a cumbersome system of mains. One steam boiler heats three buildings. The hot-water heating system has been expanded over a period of years until it is now taxed to capacity. Its supply and return mains are the cause of much heat loss due to improper grading, long runs, poorly designed expansion loops, and lack of insulation. In some spots drainage water runs through the service culvert. There is no space in the present boiler room to install additional boilers. Fuel oil must be pumped to a height of thirty (30) feet to the present storage tanks. Before new buildings can be added, the present system must be redesigned and relocated.

Description—It is proposed to build a new boiler room east of the Orr Ditch, and south of the Veterinary Science Building, large enough for at least four boilers. Supply and return mains can be regraded, properly insulated, and sized for steam instead of hot water. Present hot water boilers can be converted to steam. A great deal of the present system can be salvaged and converted to an efficient steam-heating plant. Fuel oil can also be more economically handled.

State Controller records show that \$29,500 of Authorized General Obligation Bonds remain unused from a total of \$75,000 originally approved for this purpose.

It is now estimated that this amount should be supplemented to the extent of \$60,000, or a total of \$89,500 needed to complete the project.

2. CLASSROOM BUILDING, \$365,000 (1945-1947)

Necessity—Enrollment at the University of Nevada increased from 430 in 1920 to 1,267 in 1940,

the majority of this student increase enrolling in the Department of Arts and Science. The Liberal Arts courses are carried on in five different buildings on the campus, namely: Morrill Hall, Stewart Hall, English Hall, Mackay Science Hall, and the Education Building. The first two-named buildings are obsolete, being poorly lighted, ventilated, and crowded. The top floor of Stewart Hall has been condemned by fire underwriters as unsafe for use.

Description—It is proposed to erect a two-story reinforced concrete and brick classroom building of the modified classical, architectural style in keeping with that of the other modern buildings on the campus. The building should contain lecture rooms, classrooms, and offices arranged to serve the greatest number of students through the maximum number of hours each day.

The classroom building will house the following departments:

Economics, Business Administration, Sociology, English, Foreign Languages, History and Political Science, Mathematics, Philosophy, and office of Dean for the College of Arts and Science.

Space released from present buildings can be reassigned to other departments and University functions as best suit the respective needs.

2A. MOVE AND CONVERT ENGLISH HALL FOR JOURNALISM, \$15,000 (1945-1947)

Necessity—Journalism is a department which has expanded a great deal in the past several years. Many specialties have been introduced in the course of instruction such as radio, photography, printing, and news research, which call for space detached from other departments. Journalism is now taught in one room in English Hall. Five other rooms of this building are used for the teaching of English. All of the space of this building can readily be used by Journalism.

Description—Since it is necessary to remove English Hall from the proposed site of the classroom building, it will be worthwhile to move English Hall to a new location and convert it to the needs of the department of Journalism.

3. ADDITION TO ENGINEERING BUILDING, \$100,000 (1945-1947)

Necessity—At the time of the construction of the new Engineering Building, it was proposed to add a second wing to this building in order that all departments of the College of Engineering might be housed under one roof. However, due to rising costs of construction and a limited appropriation, funds were not available. The College of Electrical Engineering will undoubtedly expand, due to new developments in radio, radar, television, and other fields of electronics, as well as basic electricity. Therefore, space should be provided for new and up-to-date equipment necessary for the teaching and research of the above-mentioned electrical sciences.

Description—It is proposed to build this wing as a two-story reinforced concrete and brick structure in the same style as the present building. This addition will consolidate all engineering studies, and at the same time release space in the present Electrical Building for other purposes.

4. LIFE SCIENCE BUILDING, \$450,000 (1945-1947)

Necessity—Life Sciences (Biology, Bacteriology, Zoology, Botany, and Plant Pathology) are at present taught in the Agricultural Building. For twenty-six years the laboratories in this building have been serving students pursuing courses of instruction in the Life Sciences, as well as in the field of Agriculture. The Life Sciences are being rapidly lifted from simple courses leading to an Arts and Science Degree to specialty training leading to degrees in all branches of the Life Science. Laboratories have become crowded, with little space left for advanced training and research. The equipment available to students is not in keeping with needs for proper instruction. Valuable specimens of Nevada plant life are poorly stored in the basement of the Agricultural Building. Soils testing laboratories are poorly housed in the basement of this building. Agricultural courses embracing Biology, Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Horticulture, Forestry Range Ecology, etc., have lost their identity, in that little space is left for classroom and laboratory work in the field of Agriculture. All of the above contributes to disunity of purpose and retards study and research in both Life Sciences and Agriculture.

Description—It is proposed to construct a building fitting the style and architecture of present campus structures, in keeping with the needs of the present and anticipated needs of the future.

5. STUDENT UNION BUILDING, \$497,000 (1947-1949)

Necessity—Student activities are now housed in a building most unsuitable for the purpose, and one that constitutes a grave fire hazard. University officials state that the immediate construction of a Student Union would do more to solve postwar student problems than any other one thing that could happen on their campus. Such a building would have the effect of boosting the morale of the student body by offering adequate quarters for every worthwhile student activity, by providing recreational and social facilities for all alike on an equal basis and, in general, by promoting good will, high ideals, and democracy in the student body.

Description—To accomplish these ends, it will be necessary to construct a building of beauty, comfort, and size sufficient to house a cafeteria, grill, bookstore, lounge room, soda fountain, recreational hall, and offices for student government, student newspaper, student year book, Dean of Women, Dean of Men, Y. W. C. A., Y. M. C. A., Newman Club, and intramural and intercollegiate athletics.

Several methods of financing have been proposed for exploration, namely: (1) through contributions of students, alumni, and friends of the University; (2) income from special events or programs promoted by students for this purpose; (3) possible State and Federal aid on a matching basis.

Due to the lack of a definite plan of financing at this time, this building has been listed for construction during the 1947-1949 biennium, and note made that the necessary funds will be secured from outside sources. This should allow ample time to perfect an orderly plan of financing by the student body and University officials. Any encouragement the Legislature might give in the way of offering some basis for matching of funds would seem highly desirable and would present a challenge to the student body, in the hope that any student program designed for the collection or accumulation of funds necessary for their participation might be inaugurated at once.

6. ADMINISTRATION BUILDING, \$105,000 (1947-1949)

Necessity—The present administration building, known as Morrill Hall, was erected in 1885, and is the oldest University building. It is greatly overcrowded, and arrangement of offices tends to much loss of time in administration of University affairs. During registration periods there is a great congestion because of limited space for this work, resulting in confusion and delay. The top floor, used for instruction, has been condemned by underwriters as a fire trap. There also is lack of storage facilities. In the event of loss of this structure by fire, many valuable and irreplaceable records would be lost.

Description—The proposed project would be of brick concrete construction, and in architectural design conforming to the main group of University buildings. It should contain adequate and conveniently arranged administration offices, fireproof storage vaults, and conference rooms.

7. MAINTENANCE SHOP, \$39,000 (1947-1949)

Necessity—There is need for a utility or maintenance shop with sufficient space and equipment to perform all shop work necessary in the proper maintenance and operation of the University plant.

Description—It is proposed to construct a modern fire resistant shop building of sufficient capacity to house University carpentry, plumbing, electrical, and paint shops.

8. CONVERT OLD GYMNASIUM TO R. O. T. C. ARMORY, \$19,625 (1947-1949)

Necessity—The military department is now housed in the basement of Stewart Hall (one of the buildings proposed for demolition in near future). The space afforded is inadequate to properly carry on the function of the present department. Additional space and a better arrangement of facilities are badly needed to carry on the extensive program outlined for Land Grant Colleges in the postwar era.

Description—It is proposed to complete the reconversion of old gymnasium to an R. O. T. C. Armory. The basement section has already been prepared for storage, and an indoor pistol range has been provided.

Since the new gymnasium has been made available for physical education and competitive indoor athletics, the vacated old gymnasium is considered most suitable for armory needs. The interior must be remodeled to provide locker and change rooms, indoor drill floor, and offices for military staff. A reinforced concrete, brick veneer lean-to addition to the north wall should be constructed for storage of equipment.

9. GREENHOUSE ADDITION, \$12,000 (1947-1949)

Necessity—There is a growing need for increased greenhouse facilities in connection with the

College of Agriculture's program of expansion, together with present and future needs for adequate facilities to carry on botanical studies.

Description—It is proposed to enlarge and improve the existing greenhouse by constructing an addition 20' x 120'—concrete footings and side walls—metal framework for glassed-in portion. Building to be of modern type, properly heated and in keeping with similar structures designed for agricultural colleges in western States.

10. IMPROVE DORMITORIES, \$108,294 (1947-1949)

Necessity—Lincoln Hall was erected in 1896, and half of Manzanita Hall in 1896, and the remainder in 1909. These dormitory buildings are in a bad state of repair. The floors and partitions are wooden throughout and are in a dilapidated condition. The lime plastering is cracked, and a number of places has fallen from the lath. The electric wiring is open knob and tube type wiring, and also is in a bad state of repair. This condition does not comply with underwriters' code. There is an overloading of the circuits due in part to use of electric heaters. These buildings present a fire hazard, and there is urgent need for their reconditioning, if they are to be continued in use.

Description—It is proposed to make the floors fire resistant, and to replace existing plastering with metal lath and hard wall plaster. The electric wiring should be placed in conduit, and brought up to standard requirements.

11. WINGS TO LINCOLN HALL, \$195,513 (1949-1951)

Necessity—During the years just previous to outbreak of World War II there was an ever-increasing demand for space in the men's dormitory. With space for approximately seventy-five (75) students each year, students in larger numbers were denied the privilege of lower rentals and convenient living quarters, which presented an inequitable service. In addition, many parents believe students living in dormitories located on the Campus are under better discipline.

Description—It is proposed to construct two wings to Lincoln Hall. The construction to be of reinforced concrete and brick and to be fire resistant throughout, and in design, to conform with existing buildings. It is contemplated that this need will again be evident shortly after the present war. Construction should be timed for the biennium (1949-1951).

12. MECHANICAL ARTS BUILDING, \$175,000 (1949-1951)

Necessity—The Mechanical Arts are rising to a new plane of importance in the curricula of the University of Nevada. Particular effort has been placed on the procurement of men skilled in machine-shop practice during the present war. Peacetime demands for trained men in mechanical arts will be even greater. The number of students desiring this type of training will be reflected in the increased registration in Mechanical Engineering. These demands can be carefully appraised in the College of Engineering. Members of the faculty and leaders in business and industry, by collaboration, can develop a program of training based on needs determined by surveys. These surveys should be conducted in the near future.

Description—It is proposed that this building be the most modern and best equipped structure of its kind to be found among colleges or universities of the eleven western States. Its size and date of construction will of necessity await results of surveys and the student needs.

13. FARM SHOP BUILDING, \$40,000 (1949-1951)

Necessity—The College of Agriculture in its training of students in the fundamentals of farming and ranching, includes in its courses of study, farm shop practice. This phase of training contains practical work in forging, carpentry, plumbing, and electricity. It teaches young farmers how to make ordinary repairs to farm buildings and machinery, thus saving delay in operation and avoiding unnecessary deterioration.

The present facilities for this work are far from adequate. Forging is taught in the poorly lighted and ventilated basement of Lincoln Hall while machine, electrical, and carpentry work are taught in the present Mechanical Building. These widely separated units break up the continuity of instruction.

Description—It is proposed to house each department of farm shop practice in one building. A fireproof structure, soundly constructed and well lighted, can be economically built of materials commonly used in farm building construction.

**1. CONDENSED SCHEDULE OF FINANCIAL NEEDS FOR MAINTENANCE AND OPERATION,
UNIVERSITY OF NEVADA, FOR BIENNIUM 1944-1946***

	For one year	For biennium
A. Actual salaries.....	\$364,506.56	\$729,013.12
B. Maintenance, repairs, general expense (Same as present biennium, see Table II)..	79,000.00	158,000.00
C. Salary needs (see Table III) :		
a. New staff.....	25,000.00	50,000.00
b. Increases for present staff.....	25,000.00	50,000.00
D. Special needs (see Table IV) :		
a. Agriculture	25,000.00	50,000.00
b. Library	20,000.00	40,000.00
c. Remodeling of old buildings.....	6,750.00	13,500.00
Totals	\$545,256.56	\$1,090,513.12
E. Estimate of total normal revenue (see Table V).....	\$397,258.25	\$794,516.50
F. Request for additional funds from Legislature.....	147,998.31	295,996.62
G. Total necessary to meet needs.....	\$545,256.56	\$1,090,513.12

*State University fiscal year used.

**TABLE I—RECAPITULATION OF YEARLY SALARIES BY DEPARTMENTS,
UNIVERSITY OF NEVADA**

Instructional Salaries—	Present	On leave	Total
Agronomy		\$2,500.00	\$2,500.00
Animal Husbandry.....	\$5,400.00		5,400.00
Agricultural Engineering.....	2,800.00		2,800.00
Agricultural Economics.....		3,600.00	3,600.00
Art	2,000.00		2,000.00
Biology	9,500.00	3,000.00	12,500.00
Chemistry	10,960.00		10,960.00
Civil Engineering.....	3,600.00	6,000.00	9,600.00
Economics and Business Administration.....	10,100.00	3,600.00	13,700.00
Education	11,650.00	2,400.00	14,050.00
Electrical Engineering	6,300.00	3,350.00	9,650.00
English	12,380.00	8,200.00	20,580.00
Journalism	4,900.00	2,300.00	7,200.00
History	15,200.00		15,200.00
Home Economics.....	7,900.00		7,900.00
Mathematics	8,750.00		8,740.00
Mechanical Engineering.....	5,900.00	5,500.00	11,400.00
Geology, Mining, Metallurgy.....	21,900.00	5,400.00	27,300.00
Military	600.00		600.00
Modern Languages.....	12,150.00	1,800.00	13,950.00
Music	3,600.00		3,600.00
Philosophy	6,660.00		6,660.00
Physical Education, Men.....	9,100.00	2,900.00	12,000.00
Physical Education, Women.....	5,660.00	2,300.00	7,960.00
Physics	6,700.00	3,000.00	9,700.00
Psychology	6,880.00		6,880.00
Vocational Education.....	2,212.56		2,212.56
Total, Instructional	\$192,792.56	\$55,850.00	\$248,642.56

TABLE I—Continued

	Present	On leave	Total
Maintenance Salaries.....	\$56,556.00	.....	\$56,556.00
Administration Salaries.....	35,920.00	.....	35,920.00
Library Salaries.....	11,820.00	.....	11,820.00
Emeritus Salaries.....	11,568.00	.....	11,568.00
Grand Totals.....	\$308,656.56	\$55,850.00	\$364,506.56

TABLE II—MAINTENANCE, REPAIRS, GENERAL EXPENSE

Maintenance, Repairs, General Expense—	For one year	For biennium
Buildings and grounds.....	\$10,250.00	\$20,500.00
Greenhouse.....	2,500.00	5,000.00
Heating plant.....	12,500.00	25,000.00
General expense.....	33,750.00	67,500.00
Departmental.....	20,000.00	40,000.00
Total.....	\$79,000.00	\$158,000.00

TABLE III—SALARY NEEDS

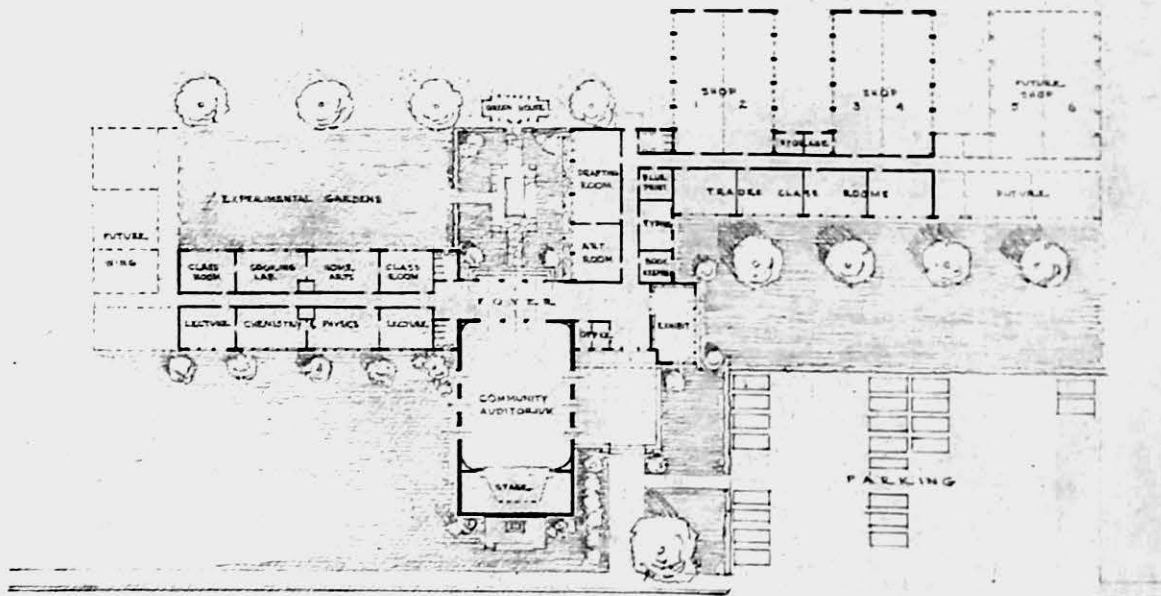
Salary Needs—	For one year	For biennium
I. a. New staff (necessary for normal enrollment)—		
1. Agriculture (2).		
2. Replacements—		
Chemistry (1).		
Mathematics (2).		
3. Music (1).		
Six staff members, \$2,500.00 each.....	\$15,000.00	\$30,000.00
b. New staff (necessary if any increase in enrollment)—		
1. Biology (1).		
2. Economics, Business Administration (1).		
3. English (1).		
4. Mathematics (1).		
Four staff members, \$2,500.00 each.....	10,000.00	20,000.00
Total.....	\$25,000.00	\$50,000.00
II. Increases in pay for present staff.....	\$25,000.00	\$50,000.00
Grand total.....	\$50,000.00	\$100,000.00

TABLE IV—SPECIAL NEEDS

Special Needs—	For one year	For biennium
a. Agriculture—		
1. Rehabilitation of South Virginia Road Farm.....	\$7,500.00	\$15,000.00
2. Machinery and equipment (Fleischmann Farm).....	10,000.00	20,000.00
3. Purchase of surplus war material.....	7,500.00	15,000.00
Total.....	\$25,000.00	\$50,000.00
b. Library—		
1. Furniture and equipment.....	\$5,000.00	\$10,000.00
2. Catalogue material.....	1,000.00	2,000.00
3. Books and periodicals.....	10,000.00	20,000.00
4. Binding.....	4,000.00	8,000.00
Total.....	\$20,000.00	\$40,000.00

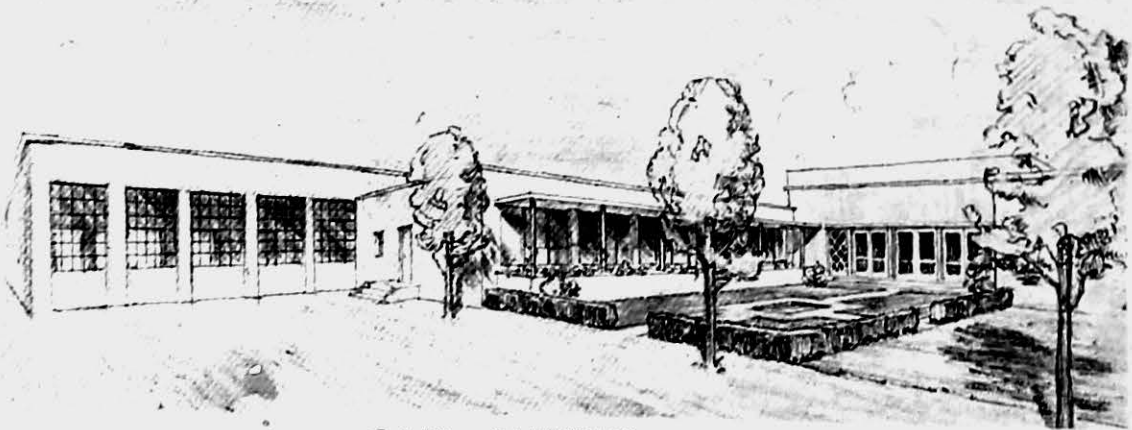


— FRONT ELEVATION —



— PLAN —

0 10 20 40 60 80
FOOT
GRAPHIC SCALE



— REAR ELEVATION —

A VOCATIONAL EDUCATIONAL SCHOOL
TO BE LOCATED IN THE STATE OF NEVADA

TABLE IV—Continued

	For one year	For biennium
c. Remodeling of Old Buildings—		
1. Hall of English (remodel for Journalism).....	\$4,250.00	\$8,500.00
2. Stewart Hall	2,500.00	5,000.00
Total	\$6,750.00	\$13,500.00
Grand total	\$51,750.00	\$103,500.00

TABLE V—ESTIMATE OF TOTAL NORMAL REVENUE

Estimate of Total Normal Revenue—	For one year	For biennium
12½ cents on 240 million.....	\$300,000.00	\$600,000.00
Morrill-Nelson Fund.....	71,258.25	142,516.50
Land Grant Funds.....	6,000.00	12,000.00
	\$377,258.25	\$754,516.50
Student fees (estimate).....	20,000.00	40,000.00
Grand total	\$397,258.25	\$794,516.50

VOCATIONAL EDUCATION SCHOOLS AT RENO AND LAS VEGAS, NEVADA

(1)	Proposed New Construction	(2)	ESTIMATED EXPENDITURES			Total six-year period
			1945-1947	1947-1949	1949-1951	
1.	Vocational Educational School at Las Vegas.....	GO	\$190,000	.....	.....	\$190,000
2.	Vocational Educational School at Reno.....	GO	.....	\$190,000	.....	190,000
Total Estimated Construction Cost.....			\$190,000	\$190,000	.....	\$380,000

(1) Suggested Priority Listing. (2) Method of Financing. GO—General Obligation Bonds.

1. VOCATIONAL EDUCATION SCHOOLS AT LAS VEGAS, \$190,000 (1945-1947)
 RENO, \$190,000 (1947-1949)

Necessity—Public facilities for training Nevada youth in the numerous common vocations of life, including those occupations found in trades, industry, business, agriculture, and the home are extremely limited. Nevada is allotted \$130,000 annually in Federal funds for Vocational Education. However, these funds must be matched with State funds, and the Federal funds are earmarked for instructional costs only. Due to the lack of proper facilities, the State has only been providing \$17,500 annually. There is a limited population and enrollment in most communities and it is practically impossible to organize and conduct a wide range of vocational courses. The solution seems to be the establishment of possibly two specialized State vocational schools in the population centers—Reno and Las Vegas.

Description—It is proposed to construct a reinforced concrete one-story structure, designated for natural light. Floor space, 27,900 sq. ft.; volume, 300,000 cu. ft. Entire building to be designed in keeping with the latest type vocational educational structures.

The following cost estimate is based on the accompanying sketch of a vocational education school which is designed to meet average requirements for any location in the State of Nevada.

One or more schools may be built from the basic plan (by increasing or decreasing the size of the building as required) in one or several locations. Therefore, to find the cost of a school fulfilling given requirements for a specific location, the cost data should be revised after the location has been selected.

Unit	Square feet	Cubic feet	Cost cubic feet	Cost
Administration and exhibition.....	2,100	29,400	\$0.35	\$10,390
Auditorium and foyer.....	5,500	99,000	.32	31,680
Laboratories and classrooms.....	6,000	72,000	.39	28,980
Art drafting and classrooms.....	3,150	37,800	.36	13,608
Trade classrooms.....	4,150	49,800	.37	18,426
Shops	7,000	112,000	.28	31,360
Totals	27,900	300,000	.....	\$134,444
Equipment and furnishings.....				38,000
Landscaping				3,000
Architects' and engineers' fees.....				12,000
				\$190,000

STATE OF NEVADA, DEPARTMENT OF HIGHWAYS

Highways*	ESTIMATED EXPENDITURES			Total six-year period
	1945-1947	1947-1949	1949-1951	
Projects Listed (see following pages).....	\$11,576,000	\$11,576,000	\$11,576,000	\$34,728,000
Method of Financing—				
Federal Aid.....FA	\$5,740,000	\$5,750,000	\$5,740,000	\$17,220,000
State.....SF	1,104,000	1,104,000	1,104,000	3,312,000
Total	\$6,844,000	\$6,844,000	\$6,844,000	\$20,532,000
Federal Aid (Secondary).....FA	\$3,846,000	\$3,846,000	\$3,846,000	\$11,538,000
State.....SF	740,000	740,000	740,000	2,220,000
Total	\$4,586,000	\$4,586,000	\$4,586,000	\$13,758,000
Federal Aid (Urban).....FA	\$122,000	\$122,000	\$122,000	\$366,000
State.....SF	24,000	24,000	24,000	72,000
Total	\$146,000	\$146,000	\$146,000	\$438,000
Total All Funds	\$11,576,000	\$11,576,000	\$11,576,000	\$34,728,000

*Highway Department fiscal year used. FA—Federal Aid. SF—State Funds.

HISTORY AND NEW LEGISLATION

The Nevada State Department of Highways was created in 1917, and the State thus became eligible for Federal aid in the building of a highway system. The original Act with the amendments has provided Federal aid and secondary roads to the extent of over 3,000 miles in Nevada. The history of the various Acts will be found in the first volume of the six-year improvement plan.

For the coming period of six years, the State will be guided in a measure by the provisions of the "Federal Aid Highway Act of 1944" which authorized the appropriation of \$1,500,000,000 in Federal funds; \$500,000,000 for each of the three successive postwar years. Some new features are involved in this new Federal Aid Act. There is a definite allocation of funds for secondary or farm-to-market roads, and for urban highway improvements. The Federal Government now is authorized to pay one-third of the cost of rights-of-way. The fund is divided into annual authorizations in the following manner:

\$225,000,000 for projects on the Federal Aid System.

\$150,000,000 for projects on the principal secondary and farm-to-market roads.

\$125,000,000 for projects on the Federal Aid System in urban areas.

The apportionment of funds among the States is on the following basis:

(a) The Federal Aid System—One-third on area, one-third population, and one-third road mileage.

(b) The Secondary System—One-third on area; one-third on rural population, and one-third mileage of rural delivery and star routes.

(c) Urban highways, in the ratio which the population of municipalities of 5,000 or more in each State bears to the total of such population in all the States.

Funds are available for one year after the fiscal year for which they are apportioned; after which time they lapse.

Construction costs are on a fifty-fifty matching basis except that in the case of any State containing unappropriated and unreserved public lands and nontaxable Indian lands, individual and tribal, exceeding five per centum of the total area of all lands therein, the Federal share shall be increased in each of the three postwar years by a percentage of the remaining cost equal to the percentage that the area of all such lands in such State is of its total area.

Right-of-way costs allowed up to one-third of the total.

Entire construction costs of grade crossing projects paid from Federal funds. Also, fifty percent (50%) of right-of-way costs.

Standardization of signs and markings.

Forest highways have authorized for appropriation the sum of \$25,000,000 for each of the three postwar years.

The National Park Service has authorized for appropriation the sum of \$4,250,000 a year for each of the three successive postwar years, and for construction and maintenance of parkways to give access to National Parks and National Monuments, there is authorized to be appropriated \$10,000,000 a year for each of the three successive postwar years.

The Indian Service has authorized for appropriation for construction, improvement, and maintenance of Indian Reservation roads and roads to provide access to Indian Reservations and Indian lands, the sum of \$6,000,000 a year for each of the three postwar years.

Portions of all of these funds will be allocated to the State of Nevada.

The new Act provides for the designation of a National System of Interstate Highways not exceeding 40,000 miles in total extent, so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities and industrial centers to serve the National Defense and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico. These routes shall be selected by joint action of the State Highway Departments of each State and the adjoining States.

The State of Nevada will, under the Federal Aid Act, receive an allotment of \$2,868,043.

Under the Secondary and Feeder Road portion, an allotment of \$1,921,867.

For projects on the Federal Aid System in urban areas, an allotment of \$60,613.

The allotments for the Forest Service, Indian Roads, and Park Roads have not yet been made. Funds allocated for a specific purpose cannot be used for any other purpose.

A program for the next six years has been made up and is attached hereto. For the first three years, the plans and specifications have been nearly completed and await only the ending of the war and appropriations to carry on the necessary construction as outlined. The list as submitted, gives the proper designation, the popular designation, the mileage, estimated cost and priority for each of the roads which the traffic needs of the people indicate should be built.

HIGHWAY CONSTRUCTION AND RECONSTRUCTION PROPOSED FOR 1946 AND 1947

County	Route	Regular Federal Aid		Estimated cost
		Description	Mileage	
Churchill.....	US 40.....	Lyon-Churchill County line to Churchill-Pershing County line..	27.73	\$480,000
	US 95.....	13.5 miles south of Fallon to Fallon.....	13.50	432,000
Clark.....	US 91.....	Crystal to Glendale.....	14.53	720,000
	US 91 and			
	US 93.....	Main Street, Las Vegas, from Fremont through N. Las Vegas....	1.94	163,000
	US 91.....	Fifth Street, Las Vegas, south city limits to Garees Street.....	1.45	121,000
Elko.....	US 40.....	West city limits easterly through Elko.....	2.00	225,000
	US 40.....	North Fork Humboldt River to Deeth.....	13.99	586,000
	US 40.....	Wells to Moor.....	9.67	435,000
	US 40.....	Moor to west foot of Pequops.....	8.69	285,000
Eureka.....	US 40.....	Lander-Eureka County line to Dunphy.....	4.30	175,000
	US 40.....	Shoshone overpass and approaches.....	0.50	45,000
	US 40.....	Dunphy to 9 miles east.....	9.08	560,000
Humboldt.....	US 40.....	East foot Golconda summit to Stonehouse.....	5.68	218,000
Lander.....	US 40.....	Battle Mountain to Lander-Eureka County line.....	19.50	620,000
Lincoln.....	SR 25.....	Panaca to Nevada-Utah State line.....	20.93	550,000
Pershing.....	US 40.....	Humboldt House to Mill City.....	11.59	382,000
Washoe.....	US 40.....	Through town of Verdi.....	0.67	90,000
White Pine.....	US 50.....	McGill to Magnussons.....	17.56	415,000
	US 50.....	Magnussons to 15 miles north.....	14.47	342,000
Total Federal Aid.....			197.78	\$6,844,000

Federal Aid Secondary Funds

County	Description	Mileage	Estimated cost
Churchill	Roads in Scheckler District	7.5	\$113,000
	From SR 42, 0.7 miles west of Stillwater, north to ranches	1.5	18,000
	From SR 42, 4 miles east of Fallon, north to school	1.0	12,000
	From U S 50, north through Swingle Bench to US 95	2.4	29,000
	Extend Whitney Lane easterly 1 mile	1.0	10,000
	From US 95, 8 miles south of Fallon, east and north to US 50	6.7	80,000
	From US 95, 5 miles south of Fallon, east to US 50	1.2	15,000
	Easterly extension in Old River District	1.4	17,000
Clark	From US 50, 3 miles south of Fallon, east and south	2.0	24,000
	Nelson to Eldorado Canyon	3.7	111,000
	US 91 to Sloan	1.8	20,000
	Paradise to Las Vegas	7.7	92,000
Douglas	US 95 towards Bullshead Dam	10.0	150,000
	US 395 to Airport	1.0	15,000
	Walley Lane	3.1	25,000
	Centerville Lane	2.6	36,000
Elko	South Gardnerville limits east 1 mile	0.9	14,000
	Elko to 5 miles southeast	4.6	23,000
	5 miles southeast of Elko to 3 miles northeast of Lamoille	19.0	264,000
	Carlin south towards Pine Valley	10.0	120,000
Esmeralda	From Lamoille Road south via Jiggs to junction Harrison Pass Road	26.0	312,000
	US 95 to Gold Point	15.0	120,000
Eureka	Eureka north to Gordon Pass	20.2	151,000
	Pine Valley to Eureka-Elko County line	1.5	18,000
Humboldt	Pinson Ranch to Getchell Mine Junction	10.0	150,000
	US 95 west to Sod House	14.1	113,000
Lander	Austin to 28 miles north	27.9	375,000
	28 miles to 39 miles north of Austin	10.7	65,000
Lincoln	Pioche to Ursine	16.8	202,000
Lyon	Dalzell Canyon north to Central and Wellington	13.7	210,000
	Mason east and south, also Bridge Street (Yerington), east and south	8.0	96,000
Mineral	Basalt towards Tonopah Junction, via SR 10	10.0	150,000
Nye	SR 8A from Round Mountain Junction north toward US 50	17.0	270,000
	SR 8A to Round Mountain	2.7	32,000
Ormsby	Carson City west up Kings Canyon Road	2.5	60,000
Pershing	US 40 south and east into Lower Valley	12.0	144,000
	Imlay to US 40	0.5	8,000
	From US 40, 1 mile northeast of Lovelock, north and east	4.2	50,000
Storey	Virginia City via Gold Hill to Storey-Lyon County line	3.1	25,000
Washoe	Franktown Lane	4.8	72,000
	East Second Street from Reno city limits to Vista	5.8	130,000
	Mayberrys via South River Road to Reno	3.8	68,000
	Holcomb and Avansino Lanes	4.6	69,000
	South Plumas Street and Moana Lane	2.3	46,000
	Plumb Lane	2.0	35,000
	Mill Street from Reno city limits to Glendale Lane	3.1	47,000
	Kietzke Lane	1.9	34,000
White Pine	Vassar Street from Reno city limits to Kietzke Lane	0.5	10,000
	Shoshone to US 93 near Major Woods	18.0	216,000
	From US 50 north via Newark Valley toward Strawberry	12.0	120,000
Total Federal Aid Secondary		363.8	\$4,586,000

Federal Aid Urban

County	Description	Estimated cost
Clark	Charleston Boulevard grade separation	\$146,000
Total All Funds—First Biennium		\$11,576,000

HIGHWAY CONSTRUCTION AND RECONSTRUCTION PROPOSED FOR 1948 AND 1949

Regular Federal Aid

County	Route	Description	Mileage	Estimated cost
Churchill	US 95	Lyon-Churchill County line to Hazen	1.48	\$60,000
	US 50	Fallon to Grimes	10.06	201,000
Clark	US 91	East slope Mormon Mesa to Nevada-Utah State line	14.70	735,000
	US 91	Las Vegas to 6 miles south	6.00	330,000
Douglas	US 395	Cradlebaugh to Douglas-Ormsby County line	5.24	212,000
Elko	US 40	West foot to east foot Pequops	6.26	1,035,000
	US 40	East foot Pequops to Silzer Zone	14.89	470,000
	US 40	Silver Zone to Wendover	16.74	670,000
	US 50	White Pine-Elko County line to 16 miles north	16.00	640,000
Esmeralda	US 95	Tonopah to 60½ miles west	6.54	115,000
	US 95	Goldfield to Millers Cutoff Road	16.21	405,000
Lincoln	US 93	Pony Springs to Dutch Johns	9.56	335,000
Lyon	US 95	Fernley to Lyon-Churchill County line	9.24	310,000
	SR 3	Wilson to Yerington	11.74	294,000
Nye	US 95	Through Tonopah and to Nye-Esmeralda County line	1.78	90,000
Ormsby	US 395	Clear Creek to Carson City	3.00	90,000
Washoe	US 395	Steamboat Springs to Reno	7.84	314,000
White Pine	US 50	From 15 miles north of Magnussons to Junction US 93	14.18	355,000
	US 50	Junction US 93 to White Pine-Elko County line	6.09	183,000
Total Federal Aid			177.55	\$6,844,000

Federal Aid Secondary

County	Description	Mileage	Estimated cost
Churchill	Fallon to 5 miles east	5.0	\$50,000
	From US 95 to 1 mile east of US 50, 2 miles south of Fallon	2.0	24,000
	SR 1A from 2 miles to 12 miles north of Fallon	10.0	150,000
Clark	From 10 miles east of US 95 to Bullshead Dam	9.0	180,000
	Sandy to Goodsprings	12.7	190,000
Douglas	Blue Diamond west towards Pahrump	16.0	187,000
	Waterloo Lane	3.2	50,000
	Foothill Road from west end Centerville Lane to Genoa	6.5	85,000
Elko	Dinner Station west to 7 miles east of Tuscarora	20.3	366,000
	US 40 to Montello	23.0	230,000
Esmeralda	US 6 to 5 miles south of Dyer	30.0	210,000
Humboldt	Sod House to Quinn River Crossing	24.3	316,000
Lander	US 50 south via Smoky Valley to Lander-Nye County line	18.8	278,000
Lincoln	US 93 via Prince Mine to Castleton	5.0	90,000
	US 93 to Cathedral Gorge	2.0	24,000
	Caliente to Ryan State Park	3.0	45,000
	Ryan Park Road to Etna	3.5	53,000
Lyon	Dayton east over Carson River	1.0	25,000
	From SR 3 up East Walker River toward Wichman	14.0	224,000

FEDERAL AID SECONDARY—Continued

County	Description	Mileage	Estimated cost
Mineral	SR 10 from 10 miles northeast Basalt to Tonopah Junction	11.5	\$172,000
Nye	SR 8A from 18 mi. north of Round Mountain to Nye-Lander County line	15.9	270,000
	SR 16 from US 95 south 12.5 miles	12.5	175,000
Ormsby	From SR 65 east of Prison, southeast to Carson River	2.4	36,000
	From SR 65 east of Prison northeast to ranches	0.5	8,000
	From US 50 to Brunswick Canyon	2.5	40,000
Pershing	Mill City to Nevada-Massachusetts Tungsten Mine	8.7	87,000
	From 2 miles west of Lovelock north to Cemetery	0.5	7,000
	From US 40, near Oreano, east to Spring Valley	12.0	216,000
Washoe	Reno city limits to Wedekind Mine	3.3	59,000
	Vista north and west to east Sparks limits	3.3	40,000
	From 0.5 miles northeast of Sparks northeast, 2 miles	2.2	27,000
	Frey Lane from Moana Lane to Avansino Lane	2.7	49,000
	Peckham Lane south to Home Gardens	0.8	10,000
	Streets in Hill Subdivision west of Airport	2.0	36,000
	Glendale Lane from US 395 to Glendale School	5.1	77,000
	Lakeside Drive	1.3	13,000
	Pyramid Lake Indian Reservation Boundary north towards Gerlach	12.0	144,000
White Pine	From 12 miles north US 50, in Newark Valley, to Strawberry	13.0	130,000
	From US 50 via Schell Lounne Pass to Spring Valley	17.0	213,000
	Total Federal Aid Secondary	338.5	\$4,586,000

Federal Aid Urban

Clark	Charleston Boulevard grade separation and approaches		\$46,000
	US 40, Fourth Street in city of Reno		100,000
	Total Federal Aid Urban		\$146,000
	Total All Funds—Second Biennium		\$11,576,000

HIGHWAY CONSTRUCTION AND RECONSTRUCTION PROPOSED FOR 1950 AND 1951

Regular Federal Aid

County	Route	Description	Mileage	Estimated cost
Churchill	US 50	Westgate to Eastgate	10.18	\$265,000
Clark	US 91	West foot to east foot Morman Mesa	15.40	450,000
	US 93	BMI to Boulder City	10.34	310,000
Douglas	US 50	Spooners to Douglas-Ormsby County line	2.98	119,000
Elko	US 50	From 16 miles north of White Pine-Elko County line to Ferguson Springs	13.40	535,000
	US 50	Ferguson Springs to Wendover	23.97	719,000
Humboldt	US 40	Realignment Winnemucca east	2.00	125,000
Lander	US 50	Austin Summit	4.09	200,000
Lincoln	US 93	Pioche to Stonehouse	13.50	297,000
	US 93	Stonehouse to Pony Springs	15.73	346,000
Lyon	US 40	Washoe-Lyon County line to Fernley Overpass	3.43	103,000
	US 40	Fernley Overpass	0.17	35,000
	US 50	Moundhouse to Dayton	3.78	114,000
	SR 3	Wilson Canyon	3.47	140,000
Ormsby	US 50	Douglas-Ormsby County line to US 395	7.33	293,000
Pershing	US 40	Lovelock to Woolsey	6.13	161,000

REGULAR FEDERAL AID—Continued

County	Route	Description	Mileage	Estimated cost
Washoe	US 40	California-Nevada State line to Verdi	3.65	\$110,000
	US 40	Sparks to Vista	2.54	133,000
	US 395	Washoe Summit to Steamboat	6.50	215,000
	US 40	Vista to Hafed	5.26	273,000
		Hafed to Clark	8.23	412,000
		Clark to Derby	7.15	358,000
		Derby to Washoe-Lyon County line	6.16	308,000
White Pine	US 50	West foot Robinson Summit to Keystone	15.00	375,000
	US 6	Sacramento Pass to Nevada-Utah State line	16.69	448,000
Total Federal Aid			207.08	\$6,844,000

Federal Aid Secondary

County	Description	Mileage	Estimated cost	
Churchill	12 miles north of Fallon to Fanning (US 40)	22.4	\$403,000	
Clark	From 16 miles west of Blue Diamond west to Clark-Nye County line	22.0	331,000	
	Spur to Chiquita Mine	2.4	29,000	
Douglas	Foothill road from Genoa northeast to US 395	6.5	78,000	
	Foothill road from Centerville Lane southeast to SR 37	5.5	66,000	
Elko	From SR 18, 7 miles east of Tuscarora, north in Independence Valley	19.0	285,000	
	Starr Valley Road	11.6	139,000	
	From west side Clover Valley to US 93	6.4	96,000	
	From Starr Valley Road southwest toward Lamoille	4.2	50,000	
Esmeralda	Scotty's Castle Road	9.0	135,000	
	From junction Goldpoint Road to Lida	12.0	84,000	
Eureka	US 50 south to Fish Creek	8.0	96,000	
	New York Canyon Road	3.4	51,000	
Humboldt	Quinn River Crossing to Denio	31.0	372,000	
Lincoln	Etna to Elgin	16.0	240,000	
Lyon	From 14 miles up East Walker to Wichman	14.0	224,000	
	Weeks up Carson River to US 50	16.0	240,000	
Mineral	SR 23 from Nye-Mineral to Mineral-Churchill County line	3.5	42,000	
Nye	From 12.5 miles south US 95 south to Pahrump	16.0	224,000	
	Scotty's Castle Road	12.0	180,000	
	From Pahrump southeast to Nye-Clark County line	10.0	125,000	
	Rhyolite to SR 58	2.0	25,000	
Ormsby	Ash Canyon Road	2.0	29,000	
	New Empire Road	0.7	11,000	
	From US 395 to Carson Airport	2.0	25,000	
Pershing	Spring Valley to Unionville	14.0	168,000	
Washoe	From north of Winnemucca Lake to Empire Mill	14.0	210,000	
	Empire Mill to 10 miles northwest of Gerlach	15.6	234,000	
White Pine	Duck Creek Road	5.5	88,000	
	Ruth to US 6 near Murray Summit	3.0	45,000	
	Murray Summit to Ward Mountain Recreational Area	2.5	38,000	
	Strawberry (Newark Valley) north to ranches	10.0	100,000	
	From 1.5 miles south of Baker to US 6	3.9	59,000	
	Baker Road west to Forest Boundary	4.0	64,000	
Total Federal Aid Secondary			330.1	\$4,586,000

Federal Aid Urban

County	Route	Description	Estimated cost
Washoe	US 40	Fourth Street in city of Reno	\$146,000
Total All Funds—Third Biennium			\$11,576,000

FINANCIAL—STATEMENT OF RECEIPTS

Classification	1917-1942	1943	1944	Total	Percentage
Legislative Appropriation	\$40,000.00			\$40,000.00	.05
State Tax Levy	1,869,468.87			1,869,468.87	2.20
Auto License Fees (net)	3,056,009.87	\$318,351.28	\$337,817.90	3,712,179.05	4.37
Gasoline and Used Fuel Tax (gross)	15,678,766.69	1,742,251.52	1,402,385.58	18,823,403.79	22.17
Common Carrier License	2,344,087.38	388,520.25	451,407.43	3,184,015.06	3.75
Driver's License	67,614.00	18,255.75	61,393.51	147,263.26	.17
Certificate of Title	44,509.05			44,509.05	.05
Racing Commission Fees	147,428.86			147,428.86	.17
Contractors License	16,234.23			16,234.23	.02
Miscellaneous	886,074.27	33,948.03	44,233.66	964,255.96	1.14
State Highway Bonds	1,900,000.00			1,900,000.00	2.24
Federal Construction Refunds	44,999,502.99	2,471,513.12	1,793,789.88	49,264,805.99	58.02
County Construction Refunds	4,117,285.75		800.00	4,118,085.75	4.85
County Refunds on State Maintenance	59,000.00			59,000.00	.07
County Maintenance Refunds	116,654.73			116,654.73	.14
Lincoln Highway Association Construction Refunds	71,426.60			71,426.60	.08
Utah-Nevada-California Association Construction Refunds	23,831.47			23,831.47	.03
San Francisco-Bay City Construction Refunds	25,000.00			25,000.00	.03
City Construction Refunds	212,553.41			212,553.41	.25
Railway Crossing Construction Refunds	169,088.30			169,088.30	.20
Totals	\$75,844,536.47	\$4,972,839.95	\$4,091,827.96	\$84,909,204.38	100.00
*Advance to State by U. S. Government Deposited to National-Industrial Recovery Highway Fund-Trust Account	600,000.00			600,000.00	
†Advance to State by U. S. Government Deposited to Trust Account Defense Highway Act of 1941	600,000.00			600,000.00	
Totals	\$77,044,536.47	\$4,972,839.95	\$4,091,827.96	\$86,109,204.38	

*This advance repaid to U. S. Government. †\$400,000 of this advance repaid to U. S. Government.

STATEMENT OF DISBURSEMENTS

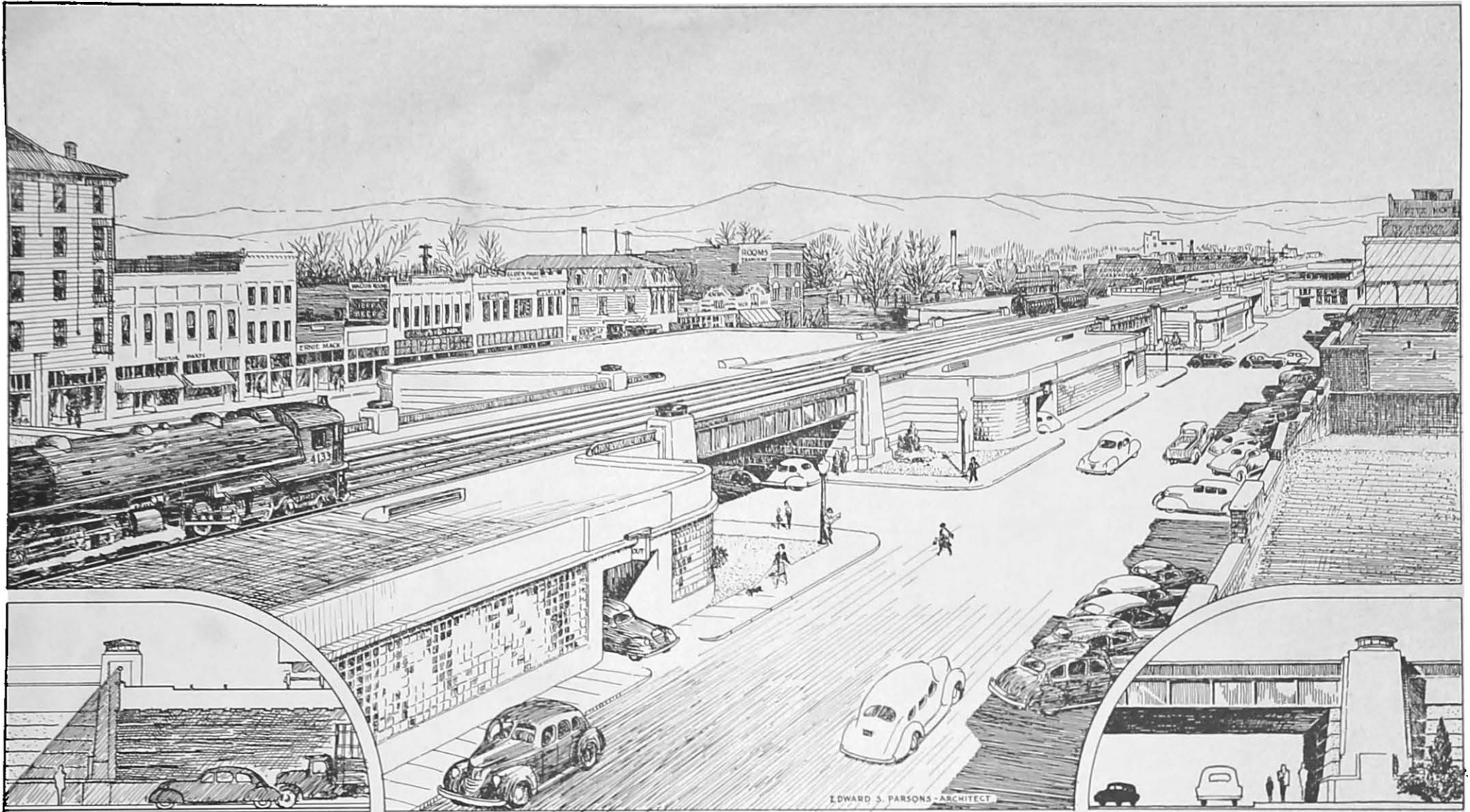
Classification	1917-1942	1943	1944	Total	Percentage
Highway Construction	\$55,452,218.60	\$2,670,424.67	\$2,106,607.82	\$60,229,251.09	72.42
Surveys, Plans, Rights-of-Way, and Preliminary Engineering.....	3,189,010.11	99,602.88	86,396.91	3,375,009.90	4.06
Maintenance	10,661,704.29	745,480.25	703,340.85	12,110,525.39	14.56
County Maintenance.....	114,846.29	.....	.....	114,846.29	.14
Equipment Division and Plants.....	1,582,704.03	<i>117,209.93</i>	<i>1,104.79</i>	1,464,389.31	1.76
Maintenance Buildings.....	80,403.62	23,717.87	13,853.57	117,975.06	.14
Accounts Receivable.....	787,357.04	42,606.01	33,544.66	863,507.71	1.04
Section "31" Refunds.....	40,107.17	.....	.....	40,107.17	.05
County Highway Bond Redemption.....	232,168.01	.....	.....	232,168.01	.28
Laboratory Building.....	21,642.18	.....	.....	21,642.18	.03
General Administration.....	1,865,376.78	132,417.94	137,213.81	2,135,008.53	2.57
Highway Bulletin and Publicity.....	59,103.55	.....	.....	59,103.55	.07
Road Information.....	10,313.43	3,872.94	2,948.71	17,135.08	.02
Landscape-Architect Department.....	15,097.01	.....	.....	15,097.01	.02
Roadside Improvement.....	4,241.31	2.75	284.42	4,528.48	.01
Special Highway Traffic Count.....	69,693.91	10,028.96	9,736.48	89,459.35	.11
Safety Division.....	35,103.22	.....	.....	35,103.22	.04
Traffic and Sign Department (Headquarters).....	20,594.61	17,214.58	5,484.55	43,293.74	.05
Sign Division (Reno).....	78,256.94	26,737.75	26,019.60	131,014.29	.16
Pavement Striping	41,715.91	16,620.62	18,292.67	76,629.20	.09
Driver's License Division.....	70,582.44	33,023.42	47,768.81	151,374.67	.18
Police Patrol (Highway).....	341,623.60	.....	.....	341,623.60	.41
Common Carrier License Expense	85,905.09	.....	.....	85,905.09	.10
Public Service Com. Inspectors.....	67,113.51	48,537.23	47,646.99	163,297.73	.20
Common Carrier and Truck Refunds..	20,697.30	814.15	37.70	21,549.15	.02
Gasoline Tax Refunds.....	722,555.99	267,276.02	169,213.73	1,159,045.74	1.39
Gasoline Tax Administration.....	29,433.23	7,186.74	8,149.44	44,769.41	.05
Use Fuel Tax Administration.....	10,840.58	7,619.75	5,425.58	23,885.91	.03
Totals	\$75,710,409.75	\$4,035,974.60	\$3,420,861.51	\$83,167,245.86	100.00
Transfer to Revolving Fund.....	52,452.02	.....	.....	52,452.02	
Transfer to U. S. Treasurer from National Industrial Recovery Highway Fund-Trust Account.....	600,000.00	.....	.....	600,000.00	
Transfer to U. S. Treasurer from Trust Account Defense Highway Act of 1941.....	.....	300,000.00	100,000.00	400,000.00	
Totals	\$76,362,861.77	\$4,335,974.60	\$3,520,861.51	\$84,219,697.88	

Italic figures denotes credit.

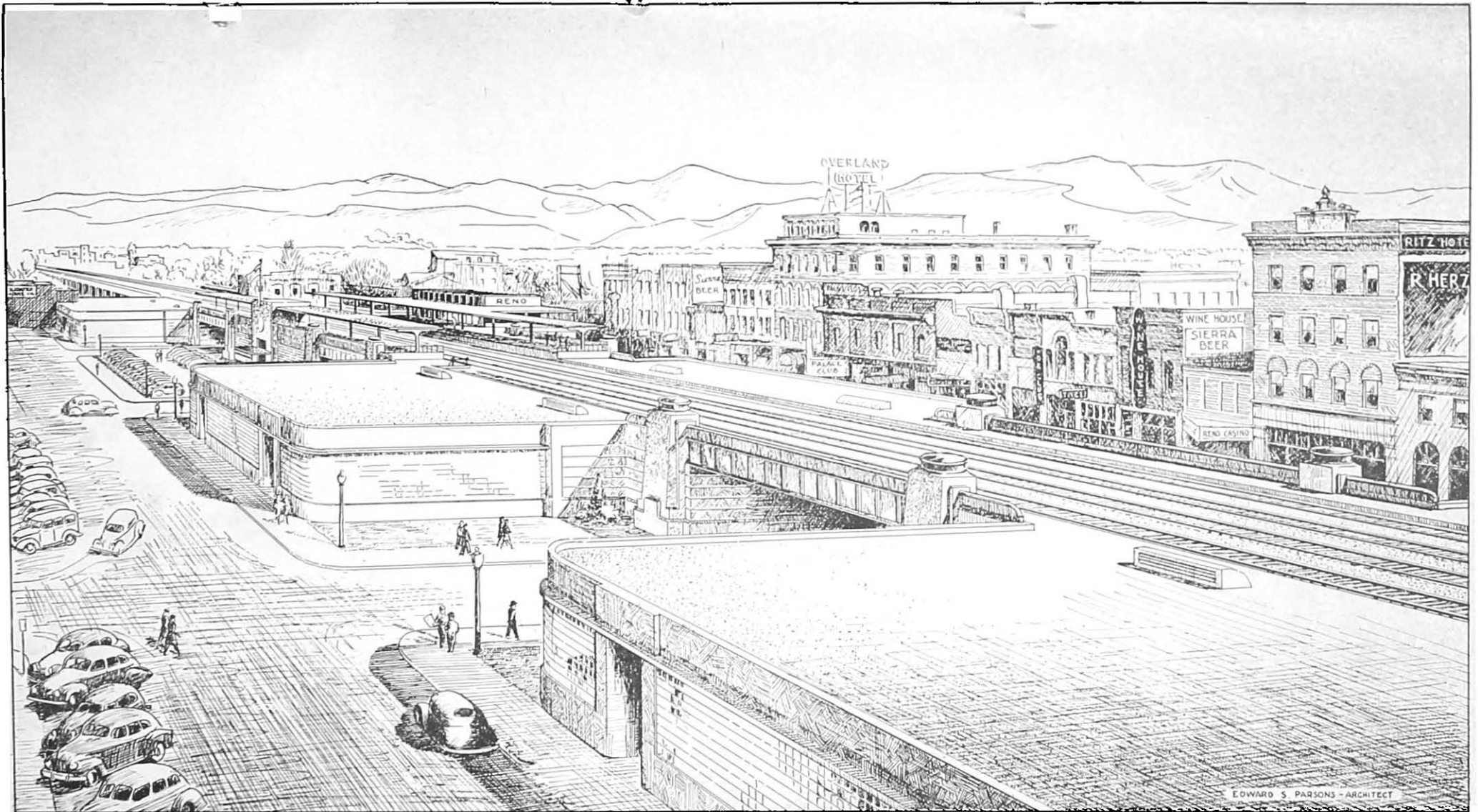
STATEMENT OF DISBURSEMENTS—Continued

Reconciliation—

Total Receipts.....	\$86,109,204.38
Total Disbursements	84,219,697.88
State Highway Balance July 1, 1944.....	\$1,889,506.50
Lists filed July 5 and 20, 1944, included in Disbursements.....	114,644.87
State Controller's Balance July 1, 1944.....	\$2,004,151.37
State Highway Balance (Highway Fund).....	\$1,743,195.64
State Highway Balance (Trust Account).....	146,310.86
	<u>\$1,889,506.50</u>
State Controller's Balance (Highway Fund).....	\$1,824,483.87
State Controller's Balance (Trust Account).....	179,667.50
	<u>\$2,004,151.37</u>



RAILROAD GRADE SEPARATION ~ CITY OF RENO
VIEW NORTHEAST ALONG COMMERCIAL ROW



RAILROAD GRADE SEPARATION ~ CITY OF RENO
VIEW SOUTHEAST ALONG PLAZA STREET

AVIATION DEVELOPMENT IN THE STATE OF NEVADA

STUDIES, POLICY, AND PROPOSAL

Extensive studies of aviation and airport facilities in the State have been made during the past six years by the Planning Division of the Department of Highways. Reports have been prepared at the request of and with the cooperation of the Civil Aeronautics Administration. Other agencies from whom data were obtained were the U. S. Weather Bureau, Department of Agriculture, Bureau of Internal Revenue, Post-Office Department, Work Projects Administration, and local organizations in the various communities and counties.

The studies covered existing and proposed airways and airports, and supply information on population of towns and trade areas, postal receipts, income tax, retail sales, meteorological data, existing and proposed airways, landing and navigation facilities.

Using these studies as a basis for planning future developments, recommendations are submitted herein for new airways and airport extension and construction.

In setting up a proposed scheme of development, extension and construction for aviation and its appurtenant facilities, consideration must be given to its four major phases, namely, civilian flying, pilot training, commercial airline operation, and national defense.

During periods of national emergency, pilot training and defense receive major attention, while under normal conditions, civilian aviation and air line operation would receive greater attention. A program for development must provide for these conditions, the needs of which are paramount at the time in question. At the same time, provision should be made for the expansion in aviation which is certain to follow the termination of the present national emergency.

The airport is the basic facility of aviation just as the highway is the basic facility of automotive transportation. The investment of billions of dollars in highways during the past 25 years has made it possible for the United States to become a Nation on wheels. With a much smaller investment in airports and aviation facilities, the country can start on its way to become a Nation on wings, with all that implies in war and peace.

There is no way to estimate accurately the number who actually will take up aviation as a vocation or avocation nor the number of prospective airline travelers after the present emergency. However, as a by-product of the war, we shall have a huge pool of potential pilots and prospective airline passengers.

To realize the maximum economic benefit from this vast potential, the utility of the air line must be increased. This requires airports and airways.

The air transport system as established to date has practically no secondary or feeder system, less than 45 percent of the population of the State having air transport service immediately available. If advantage is to be taken of air potentialities of each area, the cities and towns in the area must be connected with the transcontinental airways by secondary or feeder airway services. The development of airports and airways for these services will also be a substantial contribution for personal flying, both for business and pleasure.

At present, the following airways traverse the State:

1. Green Airway No. 2—San Francisco to New York City, through Reno and Elko.
2. Amber Airway No. 2—Los Angeles to Salt Lake City, through Las Vegas.
3. Red Airway No. 15—Las Vegas to Kingman, through Boulder City.

All of these airways are interstate and under the jurisdiction of the Civil Aeronautics Administration. Reno, Elko, Las Vegas, and Boulder City are the only cities within the State having directly available air service.

Four State airways are proposed for development within the State. The proposed airways for the most part closely follow the strategic military highway network and the natural trade routes of the State evolved by the surface transport agencies.

On the aviation development map,* existing airways and the proposed State airways are shown in

*The aviation development map herein referred to is a colored map and, for the reason of economy, could not be reproduced for this report. However, it is in the files of the State of Nevada, Department of Highways, and may be examined in the administration office, Heroes Memorial Building, Carson City, Nevada.

relation to the strategic military highway network which may also be considered as the essential trade routes. The proposed State airways have been designated to follow not only the trade routes of the State but to place the communities of the State within reasonable driving distance of an airport stop. No definite attempt has been made to indicate definite termini, rather to show only the proposed State airways. Each airport suggested has been selected upon its relationship to its local community and with regard to the State Airway System. The plan incorporates all existing airports along the proposed airways.

STATE AVIATION POLICY

Attention is focused on the Federal Aid Airport Act introduced in the House of Representatives by Congressman Randolph of West Virginia. This Act follows in general the cooperative features of the Federal Aid Highway Act and gives much that is to be desired in an airport Act. It provides for cooperation between the States and the Federal Government on the 50-50 basis. It provides for an administrator of civil aeronautics who is directed to prepare and revise, from time to time, a national plan for development of public airports, which plan shall specify in terms of general location and type of development, all airport development considered necessary to provide a nation-wide system of public airports adequate to anticipate and meet the needs of civil aeronautics, to consider the needs of air commerce and private flying, the probable technological developments in the science of aeronautics, the likely growth and requirements of civil aeronautics, and the needs and recommendations of the War and Navy Departments for national defense. The administrator, in the formulation of such a development program, shall consult and take into consideration the views and recommendations of the Civil Aeronautics Board, the several States and political subdivisions. The Act would provide that payments shall be jointly agreed upon by the administrator and State airport agency, that construction work and labor in each State shall be done in accordance with its laws and under the direct supervision of the State agency, subject to the inspection and approval of the administrator. It sets forth the eligibility of States to come under the provisions of the proposed Act, as follows:

(1) The State Legislature shall have assented to the provisions of the Act and to its acceptance of Federal Airport Aid on terms and conditions prescribed by the administrator.

(2) The State shall have a State airport agency as defined by the Act.

(3) The State shall have adequate legislation for proper airport zoning.

(4) All revenues derived from any special tax on aviation or aeronautics facilities, or aviation fuel, must be devoted entirely to the encouragement or development of civil aeronautics.

(5) State must insure that all public airports within its confines will be operated and managed in the public interest.

(6) State shall have taken adequate steps to insure proper maintenance of all public airports.

(7) The State shall have taken adequate steps to insure the availability of State funds required each year to match Federal aid funds.

All gasoline for aviation or aeronautical use should be taxed as any other gasoline is taxed and the proceeds devoted entirely to the development of civil aeronautics.

Rights-of-way for the construction of airports will be acquired by the State but paid for by the Federal Government and State. The Act is parallel to the Federal Aid Highway Act except for the joint purchase of right-of-way, the manner of fund apportionment to the States, and the basis of participation in the public land States.

Initial funds to carry out the provisions of the Act obtained by gasoline tax in the State of Nevada, had there been a tax in force, would have yielded a return on 1,136,000 gallons in 1941, 2,391,000 in 1943, and an estimated 3,613,000 in 1945.

The State of Nevada, during the next session of its Legislature, should provide the necessary cooperative airport legislation and funds in order that the State may benefit from the fruits of aviation. The proposed Airport Act would net to Nevada \$2,500,000. So it becomes a major task in Nevada to finance State participation unless the public lands participation feature now incorporated in the Federal Aid Highway Act is followed.

The State should guard against the raising of artificial barriers that will retard or impede aviation development.

Airport development and construction should be based "on the time-honored and practical system

which has been so effective in the highway field," that is, Federal funds for State construction of airports and facilities should be "channeled through State agencies and matched in part by State appropriations." As is the case with Federal aid road building, the Federal Government should exercise approval and inspection authority.

When the two functions of road building and airport construction can be linked together, our people will find that their dollars are being expended to provide a well-constructed system of roads and airports for public use.

Operation of airports and airport facilities should be under joint Federal and State supervision.

A uniform Airports Act will be asked for by the National Association of State Aviation Officials and the Council of State Governments. It is hoped that full consideration will be given to that Act in order that our States' rights might be safeguarded and still provide the necessary cooperation to a plan of national scope which will be of benefit to all of the peoples of the Nation.

State supervision over the design, location, construction, and operation of airports and their facilities by the State is a workable procedure. No hardship has been worked on anybody by this type of operation, and the best interests of the people will be served. Being closer to the people, the State is in a better position to supervise than an impersonal isolated bureau.

In the interest of Public Safety and the General Welfare, it is recommended there be enacted by proper legislative procedure, an Act providing for the creation of a State Aeronautics Commission, defining its authority, powers, and duties, to exercise supervision generally over airports and all matters relating thereto within the State.

After considerable study, the State Highway Department and State Planning Board present a summary with recommendations for airways and airports within the State of Nevada:

PROPOSED STATE AIRWAYS

In outlining the proposed development of the four airways, the following assumptions have been made:

1. During the initial development of the proposed airways, they will be established as day airways.
2. Airports along the proposed airways, now under the jurisdiction of the Army or Navy and used for training personnel, will become available for civilian and commercial aviation after the war.
3. The proposed airways and airports would be under the joint jurisdiction of a State Department of Aeronautics (to be created) and the Federal Government.
4. Airports and appurtenant facilities will conform with the recommendations of the Technical Development, Airport Section, Civil Aeronautics Administration.
5. Small transport planes would be used for several years after the proposed airways are established.

The proposed airways are as follows:

STATE AIRWAY NO. 1

Las Vegas to Reno, via Beatty, Goldfield, Tonopah, Mina, Yerington, and Carson City.

The Las Vegas, Indian Springs, and Tonopah airports are operated by the U. S. Army and, at present, civilian and commercial use is restricted.

It is proposed to establish Class 1 airports at Lathrop Wells, Goldfield, Mina, and Schurz; a Class 2 airport at Yerington; and improve the airport at Carson City to Class 3.

The Reno airport (Hubbard Field) is operated by the United Air Lines and the facilities are adequate.

Following is a summary of the existing and proposed facilities along this airway, showing the estimated cost of improvement of facilities required:

AIRWAY NO 1—LAS VEGAS TO RENO—SUMMARY OF FACILITIES

Place	Type of facility	C. A. A. classification	Estimated cost*	Remarks
Las Vegas.....	Airport	Class 5	.....	Existing†
Indian Springs.....	Airport	Class 5	.....	Existing†
Lathrop Wells.....	Airport	Class 1	\$8,100	Proposed
Beatty.....	Airport	Class 3	.....	Existing
Scotty's.....	Airport	Class 4	.....	Existing
Goldfield.....	Airport	Class 1	11,000	Proposed
Tonopah.....	Airport	Class 5	.....	Existing†
Mina.....	Airport	Class 1	7,500	Proposed
Schurz.....	Airport	Class 1	9,900	Proposed
Yerington.....	Airport	Class 2	432,000	Proposed
Carson City.....	Airport	Class 3	23,600	Existing
Reno (Hubbard Field).....	Airport	Class 4	.....	Existing
Total.....			\$492,100	

*Estimated cost from National Airport Plan, prepared by Civil Aeronautics Administration.

†Civil and commercial aviation restricted.

The establishment of State Airway No. 1 would create an important link in an alternate airway for the coast airway Amber No. 1, with better weather and flying conditions east of the Cascade and Sierra Nevada Mountains, as well as a link in an airway from the Pacific Northwest to the Gulf Coast area.

Las Vegas to Wells, via Alamo, Pioche, and Ely.

The Las Vegas Airport (McCarran Field) and the Delamar flight strip are operated by the U. S. Army and, at present, civilian and commercial use is restricted.

It is proposed to establish Class 1 airports at Alamo, Geyser Ranch, and Lage, and a Class 2 airport at Wells.

The following is a summary of the existing and proposed facilities along this airway showing the estimated cost of improvement of facilities required:

AIRWAY NO. 2—LAS VEGAS TO WELLS—SUMMARY OF FACILITIES

Place	Type of facility	C. A. A. classification	Estimated cost*	Remarks
Las Vegas.....	Airport	Class 5	.....	Existing†
Alamo.....	Airport	Class 1	\$10,400	Proposed
Delamar.....	Airport	Class 4	.....	Existing†
Pioche.....	Airport	Class 2	57,200	Proposed
Geyser Ranch.....	Airport	Class 1	8,700	Proposed
Ely.....	Airport	Class 4	.....	Existing†
Lage.....	Airport	Class 1	8,100	Proposed
Tobar.....	Airport	Class 1	.....	Existing
Wells.....	Airport	Class 2	367,500	Proposed
Total.....			\$451,900	

*Estimated cost from National Airport Plan, prepared by Civil Aeronautics Administration.

†Civil and commercial aviation restricted.

Proposed State Airway No. 2 would probably become a link in an Interstate airway between Southern California and the Northwest.

STATE AIRWAY NO. 3

Reno to Wells, via Lovelock, Winnemucca, Battle Mountain, and Elko.

The Reno (Hubbard Field) airport is operated by the United Airlines.

It is proposed to establish a Class 1 airport near Imlay and improve the Class 1 airport at Beowawe. The other airports along this airway are adequate.

Following is a summary of the existing and proposed facilities along this airway, showing the estimated cost of improvement of facilities required:

AIRWAY NO. 3—RENO TO WELLS—SUMMARY OF FACILITIES

Place	Type of facility	C. A. A. classification	Estimated cost*	Remarks
Reno (Hubbard Field).....	Airport	Class 4	.....	Existing
Fernley.....	Airport	Class 1	.....	Proposed
Lovelock.....	Airport	Class 4	.....	Existing
Imlay.....	Airport	Class 1	\$7,600	Proposed
Winnemucca.....	Airport	Class 3	.....	Existing
Battle Mountain.....	Airport	Class 1	.....	Existing
Beowawe.....	Airport	Class 1	5,000	Existing
Elko.....	Airport	Class 4	.....	Existing
Wells.....	Airport	Class 2	(†)	Proposed
Total.....			\$12,600	

*Estimated cost from National Airport Plan, prepared by Civil Aeronautics Administration.

†Improvement included under Airway No. 2.

STATE AIRWAY NO. 4

Reno to Ely, via Fallon, Austin, and Eureka.

The Reno (Hubbard Field) airport is operated by the United Air Lines. The Fernley (Churchill) airport, the Fallon airport and the Austin airport are under the jurisdiction of the U. S. Navy. Civilian and commercial aviation operations are restricted at the three airports.

It is proposed to construct Class 1 airports at Eastgate and Eureka.

Following is a summary of the existing and proposed facilities along this airway, showing the estimated cost improvement of facilities required:

AIRWAY NO. 4—RENO TO ELY—SUMMARY OF FACILITIES

Place	Type of facility	C. A. A. classification	Estimated cost*	Remarks
Reno (Hubbard Field).....	Airport	Class 4	.....	Existing
Fernley (Churchill).....	Airport	Class 5	.....	Existing†
Fallon.....	Airport	Class 3	.....	Existing†
Eastgate.....	Airport	Class 1	\$9,000	Proposed
Austin.....	Airport	Class 4	.....	Existing†
Eureka.....	Airport	Class 1	40,200	Proposed
Ely.....	Airport	Class 4	.....	Existing
Total.....			\$49,200	

*Estimated cost from National Airport Plan, prepared by Civil Aeronautics Administration.

†Civil and commercial aviation restricted.

AIRPORTS FOR CIVILIAN FLYING

In order to provide for civilian flying, exclusive of the four proposed State airways, it is recommended that airports be constructed as follows:

PROPOSED AIRPORTS, EXCLUSIVE OF STATE AIRWAYS

Location	C. A. A. classification	Estimated cost*	Remarks
Baker.....	Class 1	\$15,100	
Basalt.....	Class 1	20,600	
Beowawe.....	Class 1	5,000	Improvement
Bridges.....	Class 1	8,400	
Calloway.....	Class 1	6,200	
Carp.....	Class 1	12,700	
Charleston.....	Class 1	10,000	
Contact.....	Class 1	11,700	
Gerlach.....	Class 2	38,900	
Golconda.....	Class 1	7,600	
Jean.....	Class 1	5,400	
McDermitt.....	Class 1	9,200	
Nixon.....	Class 1	11,800	
Preston-Lund.....	Class 1	10,400	
Smith Valley.....	Class 1	12,500	
Valley of Fire.....	Class 1	10,700	
Vya.....	Class 1	10,100	
Warm Springs.....	Class 1	5,700	
Total (18).....		\$212,000	

*Estimated cost from National Airport Plan, prepared by Civil Aeronautics Administration.

RECAPITULATION PROPOSED STATE AIRWAYS AND AIRPORTS

Item	Existing airports	Proposed airports	Estimated cost proposed airports and improvements
Airway No. 1.....	7	5	\$492,100
Airway No. 2.....	3	5	451,900
Airway No. 3.....	6	1	12,600
Airway No. 4.....	3	2	49,200
Subtotal.....	19	13	\$1,005,800
Additional Airports.....	1	17	212,000
Totals.....	20	30	\$1,217,800

At present, about 45 percent of the population, 49,500, of the State are being served by the trans-continental airways. The four proposed State airways would permit air transport service to become available for about 79 percent of the State's population. The improvement of the eighteen (18) airports in addition to those along the four proposed State airways, would enable civilian flyers to traverse nearly all portions of the State with a reasonable degree of safety.

CONCLUSION

The proposed plan for a system of State airways developed sufficiently to permit air transport service for a majority of the people of the State and supplemented by airports for private aviation is tentative and will require revision from time to time to expand it to current needs as aviation develops after the war. It is intended as a program to initiate the development of State airways and airports for most of the communities of the State.



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