

FORTY YEARS WITH THE WASHINGTON DEPARTMENT OF HIGHWAYS

While the State Highway Department was first created by legislative action in 1905, this was by no means the first legislation concerning state roads.

Twelve years earlier, in 1893, the legislature designated as a state road, a road to be constructed from a point on the Nooksack River, in Whatcom County, passing to the north of Mount Baker, and continuing to the Columbia River at a point opposite the town of Marcus.

For this lengthy cross-state road, involving a crossing of the Cascade mountains, the sum of \$20,000 was appropriated, contingent upon Whatcom County contributing an additional \$5,000 and Okanogan and Stevens counties each \$1,000, a total of \$27,000. Oddly enough, today, fifty-two years later, this highway that received the first legislative appropriation remains far from completed.

The following session of the legislature again appropriated funds for this highway, which was then revised and more clearly defined, the western terminus being changed from a point on the Nooksack River in Whatcom County to a connection with an existing road near Marblemount in Skagit County. The 1895 legislative appropriation was in the sum of \$30,000.

Subsequent early legislatures continued to make appropriations not only for this first designated state road but for others. In each case the expenditure of state funds was to be handled by a commission of three members to be appointed by the governor. Prior to 1905, a total of \$131,881.23 had been thus expended, with apparently little to show for the expenditure, either in the way of constructed roads or of filed location records.

Finally, in 1905, the legislature, by the passage of Chapter 174, formally established the Washington Highway Department. This legislation provided for a three-member state highway board to consist of the state auditor, state treasurer and the state highway commissioner, the latter to be appointed by the governor and to be in charge of the work of constructing state highways. A State Highway Fund was also created.

Mr. J. M. Snow was appointed the first highway commissioner entered upon his duties April 15, 1905. The salary for the was fixed by law at \$2, 500 a year, with an allowance of not to exceed \$1,000 a year for traveling expenses and not to exceed \$1,500 for office expense.

At the first meeting of the highway board, April 17, 1905, Mr. Charles W. Clausen, state auditor, was elected chairman and Mr. Snow secretary. The highway board developed a biennial program and apportioned funds to state roads, which by the 1905 Legislature had been designated as follows:

State Road Number	
1	King County - Naches
2	Newport - Orient
3	Chelan - Skagit
4	San Poil - Republic
5	Cowlitz Pass
6	Waterfront (Whatcom County to Blanchard)
7	Snoqualmie Pass
8	Lyle - Washougal
9	Montesano - Port Angeles
10	Wenatchee - Johnson Creek
11	Marblemount - Mill Creek
12	Methow - Barron

The above roads could not be considered as constituting even a skeleton of a comprehensive state highway system; many were merely disconnected portions of ultimate highways.

The plan of operation under this 1905 legislation was far from satisfactory. Maps and plans were to be prepared by the counties and the county commissioners were to advertise for bids and, with the approval of the highway commissioner, to award contracts. That this division of authority led to much friction is evident from the first biennial report of the highway department which records many instances of counties failing and refusing to cooperate with the highway board, as a result of which reapportionment of funds to other counties became necessary.

Some of the flaws in the 1905 legislation were corrected by the following session of the legislature. The 1907 laws provided that plans and specifications for state road construction were to be prepared by the highway department and that bids were to be called and contracts awarded by the state highway board.

By Chapter 150, Laws of 1907, provision was made for assisting the counties in the construction of State Aid Roads. State Aid Road construction could be initiated by a petition to the county commissioners signed by owners of two-thirds of the abutting property. The resolution of the county commissioners, approving of the construction, was to be sent to the state highway commissioner for approval. He, in turn, could either have surveys and plans made himself or also authorize the county engineer to do so. The cost of this State Aid work was to be borne 50 percent by the state and 50 per cent by the county. Of the county's share, 15 per cent was to be borne by assessment of abutting property on the basis of three zones, the 880 feet abutting the proposed construction to pay seven per cent, the next 880 feet five percent and the third 880 feet zone three per cent.

By Chapter 151, Laws of 1907, the terms State Aid Roads and State Roads were defined as follows: The term State Aid Roads shall be construed to mean improved roads constructed along main lines of travel, the cost of which is distributed between the state and any county. The term State Roads shall be construed to mean roads constructed in the sparsely settled and mountainous regions of the state, the entire expense of engineering and construction being borne by the state and paid for out of the highway fund.

The Second Biennial Report, prepared by highway commissioner Joseph M. Snow December 1, 1908, shows that there had, at that time, been established 36 State Aid Roads in 25 different counties, having a total mileage of 40.62 miles. At the same time the mileage of State Roads was 1,081.63, of which only 124.50 were improved. These state

roads were listed as:

State Road No.	
1	White River - Natches
2	Newport - Orient
3	Chelan - Skagit
4	San Poil - Loomis
5	Covilitz - Natches
6	Waterfront
7	Snoqualmie Pass
8	Columbia River
9	Montesano - Port Angeles
10	Wenatchee - British Line
11	Marblemount - Barron
12	Methow - Barron
13	Twisp - Conconully (Loop-Loop)

On August 1, 1909, Mr. Henry L. Bowlby succeeded Mr. Snow as highway commissioner.

The 1909 legislature made two changes in the state system. No. 4 was extended from the San Poil Junction to Wilbur and No. 7 was enlarged to include not only the Snoqualmie Pass road from North Bend to Easton but to become a cross-state road from Seattle to the Idaho State line. By the same legislature the following five additional roads were created:

State Road No.	
14	Hood Canal Road
15	Woodland - Big Muddy
16	Garfield - Asotin
17	Island - Skagit
18	Alder - Kosmos

Until 1909, the maintenance of state roads had been a responsibility of the counties. The 1909 Legislature made the first appropriation for the maintenance of these roads. The amount appropriated, \$10,000, was apparently far from adequate.

Up to this time, state highway construction had been undertaken primarily from the standpoint of serving horse-drawn vehicles. By 1910, however, automobiles had become sufficiently numerous to constitute a transportation factor that could no longer be overlooked. Furthermore, it was seen that the action of auto-mobles on road surfaces was entirely different from that of horse drawn vehicles. Highway commissioner Henry L. Bowlby, in his biennial report for the period ending September 30, 1910, expresses his concern by calling the attention of the state legislature to this situation in the following interesting words:

“The advent of the automobile brought new problems to the road engineer. Under horse traffic, the dust caused by the horses’ calks lay on the road until a shower or a watering cart washed it back between the stones, and the iron-tired vehicles acted as rollers on the road. The automobile was originally hailed as a great road preserver, as it was thought that the rubber tires would cause no wear in themselves and the weight of the car would help compact the stones. This may have been true in the early days of the automobile industry, when cars ran at low speeds, and not very far at that, but with the present small locomotive running at high speed and seldom requiring the services of the plow team to get back to town, it has been found that the water-bound macadam will riot stand the strain. The dust caused by the horses’ hoofs and the iron tires is spread over the surrounding landscape, and in a short time the road has gone to

pieces.”

Mr. Bowlby then states that it is possible to design a roadway surface to meet the needs of either type of traffic - water-bound macadam for horse drawn vehicles or tar or asphalt macadam for automobile traffic - but that no solution had as yet been found for the combined problem of horse drawn and automobile traffic, and he recommended that a fund of \$100,000 be appropriated for field and laboratory experiments to try to solve the problem.

As early as 1905, considerable agitation was evident to have convict labor used on highway construction. State highway commissioner Joseph M. Snow apparently used every effort to have county commissioners make use of convict labor and finally persuaded Lewis County to employ a gang of 15 convicts on crusher work at Meskill. For the most part, county commissioners appeared none too anxious to use this type of labor, although they did make some use of their own county prisoners on road work. Convict labor was, for a number of years, utilized to a limited extent on highway construction and was utilized quite extensively on state crusher plant and quarry work.

During the 1913-1915 biennium, the so-called honor system was instituted for convict labor, and several honor convict camps were established, one at Hoodspoor, one at Kalama, and two in Skamania County. During the 1915-1917 biennium, convict labor was limited to one camp established on the Sunset Highway between Wenatchee and Waterville, and during the 1917-1919 biennium only one convict camp was setup, between Chelan and the Okanogan County line. This appeared to be the last use of convict labor by the highway department.

The 1909 legislature made an appropriation of \$124,000 for the development of quarry sites and the building of crusher plants, \$24,000 of this amount to be used for convict camp quarters. The crusher plants were known as the Fidalgo, Meskill, Dixie, Selah and Marshall quarries. With the exception of the Fidalgo plant, which was on the sound, all of these plants were served by the Northern Pacific Railway and most of the output was moved by rail.

These crusher plants were first placed under the management of a board of control, later under the highway commissioner, and again, in October, 1910, under the management of the control board. The results were not entirely satisfactory and on April 1, 1911, the management was once more transferred to the highway commissioner. A rotating fund was set up as the quarry operation was to be self-supporting.

The five crusher plants apparently never were used to capacity and as time went on, the use and sale of the rock produced by them became less and less, and most of the plants were shut down. Finally, the 1916 legislature authorized the disposal of all of them. The plants at Meskill and Dixie were transferred to Lewis County and Walla Walla county respectively, and the other plants were dismantled and sold.

The 1911 legislature enlarged the highway board to include the governor, state auditor, state treasurer, highway commissioner and a member of the public service commission.

Another important piece of 1911 legislation was Chapter 35, which repealed the State Aid Law and created the Permanent Highway Act. Permanent highways were to be constructed along main lines of travel, either beginning at some trade center or being an extension of a road beginning at a trade center. They were to be graded to a width of not less than 16 feet and surfaced with macadam, stone, gravel, or some other durable material for a width of not less than 12 feet. Unless not feasible by reason of physical conditions, grades were not to exceed five per cent and in no case to be more than ten per cent.

Permanent highway construction could be initiated by a petition signed by owners of two-thirds of the abutting property.

The county commissioners were to submit their resolution calling for the permanent highway improvement to the state highway commissioner for approval. When approved by the state highway commissioner, the county engineer was to prepare plans which were to be submitted to the state highway commissioner for approval. The county commissioners could then advertise for bids and award a contract. Final inspection was to be made by the state highway commissioner. Contractors estimate claims were to be paid by the state treasurer from the Permanent Highway Fund, into which were to be deposited receipts from a one-mill general levy. Fifteen percent, or more, of

the cost of permanent highway construction could, by petition and restoration, be assessed against the abutting property, using the three zone method as outlined for State Aid road construction.

The first concrete road surfacing in Washington, apparently, was undertaken in 1912. The biennial report of W. J. Roberts, highway commissioner, dated October 1, 1912, states that experiments were being made in the construction of concrete roadway surfaces at that time.

The Lincoln county commissioners, under the Permanent Highway Act, were building- a two-course concrete road, the first course being a 1-3 ½ -7 mixture four inches thick and the top course 1-21 inches of a 2-3-6 mix This was being built at a cost of \$0.90 per square yard.

Lewis County was likewise building under the Permanent Highway Act, a 2.8 mile experimental concrete highway, consisting of a base 4 ½ inches thick of 1-3-5 mix and 1 ½ inch wearing surface of 1-1-1 mix, expansion joints being provided every 50 feet. This was being constructed at a cost of \$1.30 per square yard.

At the same time, Franklin County was using Permanent Highway funds for the building of a concrete roadway with asphaltic wearing surface. This had a 1-2-4 base five inches thick with a "top course of one-third of a gallon of asphaltic oil per square yard with screenings to take up the oil." Expansion joints were provided every 50 feet and the pavement was being constructed at a cost of \$1.25 per square yard.

A patented process known as "Dollarway" was being tried out by Kittitas County, while Pierce County was experimenting with a two-course concrete known as "Granocrete" and King County was building two types of hard surfacing, (1) Warrenite, a bituminous wearing surface upon a concrete or crushed rock base, and (2) brick on a concrete base. Most of this brick pavement was laid with a sand cushion over the concrete base, although in some cases, the cushion was omitted and in other places brick laid on brick was tried.

Highway Commissioner Bowlby was succeeded in March, 1911, by William R. White, who was appointed acting commissioner until June of the same year, when William J. Roberts was appointed highway commissioner. In December, 1913, William R. Roy was appointed state highway commissioner to succeed Mr. Roberts.

By the 1913 Legislature, the levy for the Permanent Highway fund was fixed at 121 mills and the levy for the Public Highway fund at 1 mill.

The numbered system of state roads, established in 1907 and extended in 1909, was by the 1913 legislature changed, the numbering of primary roads being dropped. Instead there was adopted the following system of primary and secondary state roads:

Primary Roads:

Central Washington Highway
Inland Empire Highway
Inland Empire Highway, Eastern Extension of 1st Division
Inland Empire Highway, Eastern Extension of 2nd Division
McClellan Pass Highway
National Park Highway
Olympic Highway
Pacific Highway
Sunset Highway

Secondary Roads:

State Road No.	
2	Newport - Orient Road
3	Chelan - Skagit Road
4	Sans Poil - Loomis Road
5	Cowlitz - Natches Road
8	Columbia River Road
10	Wenatchee - Oroville Road
11	Skagit River Road
12	Methow - Barron Road
13	Cascade Wagon Road
14	Hoodsport - Duckabush Road
15	Lewis River Road
16	Garfield - Asotin Road
17	Island - Skagit Road
18	Alder. - Kosmos Road

The title designations of primary state highways were not changed by the 1915 legislature but as a result of legislation by that session of the legislature the secondary state highways were enumerated as follows:

State Road No.	
4	San Poil - Loomis Road
4	Lincoln County Ext., San Poil River - Wilburn
4	Kettle River Ext., Republic - International Line
5	Cowlitz. - Natches Road
7	Renton - Seattle, Cle Elum - Wenatchee via Blewett Pass
8	Columbia River Road.
10	Wenatchee - Oroville Road
11	Skagit River Road
12	Methow - Barron Road
13	Marblemount - Twisp Road
14	Hoodsport - Duckabush Road
15	Lewis River Road
16	Garfield Asotin Road
17	Island - Skagit Road
18	Alder - Kosmos Road
19	Kelso - Cathlamet Naselle Road
20	Raymond - Aberdeen Road
21	Kingston - Olympic Highway Road
22	Meyers Falls - Davenport Road
23	Spokane - Newport Road North Central Highway, Davenport - Sunset Highway

An important milestone in state highway history was the passage of the Federal Aid Road Act by the Sixty-fourth Congress and its approval by President Wilson July 11, 1916. The first allotment of funds became available to this state for the fiscal year ending June 30, 1917.

The first project to be undertaken under the Federal Aid program was the paving with concrete of 3.52 miles of the Pacific Highway from Olympia east.

It was during the 1915-1917 biennium that James Allen became state highway Commissioner.

No additions to the state highway system were made by the 1917 legislature but it did change the designation of State Road No. 10 to the "Lake Chelan to Okanogan Highway", State Road No. 11 to the "Skagit Highway" and State Road No. 23 to the "Pend Oreille Highway."

State Highway Commissioner James Allen's biennial report dated October 1, 1918, gives the first indication of a change from centralized control of field operations. The departmental roster as of that date was as follows:

H. G. Porak, Asst. Hwy. Commissioner
 James A. Davis, Office Engineer
 Georgia Melville, Accountant

James Allen, State Hwy. Commissioner
 George Cotterill, Chief Engineer
 Chas. L. Dufault, Right of Way Agent

District Engineers:
R.M. Gillis, Kalama
Chas. T. Jordan, Box 434, Seattle
H.J. Doolittle, West 437 - 15th Ave., Spokane

It was during the 1917-1919 biennium that the United States entered World War I. Comments by Mr. James Allen, State Highway commissioner, in his biennial report, on the effect of the war on state highway construction and operations seem strangely familiar to us who, for the past few years, have been endeavoring to carry on the activities of the present department of highways in the face of governmental restrictions, labor shortages and other problems incident to World War II. A few random quotations from Mr. Allen's Seventh Biennial Report are:

"During the present biennium road construction in this state, as in other states, has been seriously affected by reason of the excessive costs of materials, the scarcity of labor, and inadequate transportation facilities."

"The price of common labor has increased from \$2.00 to \$4.50 per day and in many cases as high as \$5.00 per day is now being paid."

"The war has had, and will have, to a greater extent, the effect of curtailing road improvement as well as other construction work that is not absolutely essential to the carrying on of war measures."

"Beginning September 10, 1918, all road building and street improvement work throughout the United States was placed practically under governmental control and will so remain until the end of the war. By order of the United States Highways Council, manufacturers are not permitted to furnish materials for any project not approved by the Council."

As directed by Chapter 78, Laws of 1917, the highway commissioner had plans and specifications prepared for standard directional signs to be erected on all public highways at all crossroads, or forks of roads. Copies of these were distributed to the board of county commissioners of each county and to the governing body of each incorporated city or town in the state which was on the route of a state highway.

Chapter 146, Laws of 1919, enlarging on the above law, made it the responsibility of the state highway commissioner to designate and notify county commissioners of all places on state highways that were hazardous to public travel and at such places the county commissioners were required to erect and maintain suitable signals and warnings

By Chapter 110, Laws of 1919, a rearranging, combining and reclassifying the state highways was made, resulting in the following state highway system:

Preliminary Highways

Central Washington Highway (Pasco-Spokane)
Chelan and Okanogan Highway (Quincy-Oreville)
Inland Empire Highway (Ellensburg - Laurier)
Inland Empire Highway Eastern Route Div. 1 (Dayton-Idaho Line)

Preliminary Highways

Central Washington Highway (Pasco-Spokane)
Chelan and Okanogan Highway (Quincy-Oreville)
Inland Empire Highway (Ellensburg - Laurier)
Inland Empire Highway Eastern Route Div. 1 (Dayton-Idaho Line)
Inland Empire Highway Eastern Route, Div. 2(Inland. Emp. Hwy. - Idaho Line)
McClellan Pass Highway (Auburn - Chinook Pass-Yakima)
Navy Yard Highway (Port Orchard Bay - Olympic Highway)
National Park Highway (Tacoma - Park Entrance; Elbe-Pacific Hwy.)
North Bank Highway (Vancouver - Inland Empire Highway)
North Central Highway (Ellensburg - Quincy - Davenport)
Ocean Beach Highway (Chehalis - Holman; Nasel1-Kelso)
Olympic Highway (Olympia -Port Angeles - Olympia)
Pacific Highway (Blaine-Vancouver)
Pend Oreille Highway (Spokane-Newport)
Sunset Highway (Renton-Idaho Line, via Blewett Pass; Swauk Creek -Ellensburg)

Secondary Highways:

Roosevelt Highway (Pateres - Marblemount -Barron)
State Road No. 4 (San Poil-Loomis; Republic-International Line; San Poil-Wilbur)
State Road No. 5 (Riffe-McClellan Pass Highway)
Cascade Wagon Road (Bridge Creek-Stehekin)
State Road No. 18(Alder - Kosmos)
State Road No. 20 (Raymond - Aberdeen)
State Road No. 21 (Kingston - Olympic Highway)
State Road No. 22 (Meyers Falls - Davenport)

Another important act of the 1919 legislature was the creation of the Motor Vehicle Fund “for the engineering, construction and improvement, and paving of the primary and secondary highways of the state.”

With the termination of World War I and the allocation of federal aid funds for highway construction the state highway department entered upon the largest construction program it had as yet undertaken. Mr. James Allen's report of October 1, 1920, states that for the two year period covered by his report the following amounts were being expended

State funds	\$4,736,840
Federal aid post road funds	3,715,290
County and permanent highway funds	2,820,104
Total	11,272,303

The counties had been persuaded to contribute the above large amount of county and permanent highway funds in order that the state might be able to take advantage of the federal aid matching funds. This large and unexpected increase in state highway construction came in the face of an anticipated curtailment of work and an expected general retrenchment following the close of hostilities. So great was the expansion that some difficulty was experienced in obtaining a sufficiency of labor. By the summer of 1920 the wages of common labor had risen to the unprecedented figure of \$6.00 for an eight-hour day.

The following departmental roster, as of October 1, 1920, shows how the organization was expanding.

James Allen, State Highway Commissioner
James Davis, Asst. Hwy. Commissioner.
Geo. T. McCoy, Office Engineer
E. R. Hoffman, Fed. Aid Engr.
C. E. Andrew, Bridge Engineer
Chas. L. Dufault, Right of Way Agent
G. F. Loetscher, Accountant

DISTRICT ENGINEERS:

Chas. T. Jordan, 420 County-City Bldg. Seattle
W. H. Yeager, Jr., Olympia
R. M. Gillis, 410 ½ Main St., Vancouver
J.W. Hamilton, courthouse, Walla Walla
Guy G. Harvey, 418 Realty Bldg., Spokane

Legislation of far reaching effect was enacted by the passage of Chapter 7, Laws of 1921. This was what is commonly known as the Administrative Code. It changed the status of all state departments except those under control of elective officials. Ten departments of state government were set up, namely: (1) the Department of Public Works, (2) The Department of Business Control, (3) The Department of Efficiency, (4) The Department of Taxation and Examination, (5) The Department of Conservation and Development, (7) The Department of Labor and Industries, (8) The Department of Agriculture, (9) The Department of Licenses, (10) The Department of Fisheries and Game. The Department of Highways became a division of the Department of Public Works.

Each of these departments was placed under the administration of a director to be appointed by the governor with the consent of the Senate. The functions of the former state highway department became those of a division of the Department of Public Works to be known as the Division of Highways, this division to be under the direction of a Supervisor of Highways to be appointed by the Director of Public Works.

An administrative board, to consist of the governor and the ten directors of state departments, was to formulate departmental policies, classify employees and fix salaries. There were also nine administrative committees created, one of which was the State Highway Committee. Section 7 of the above law states "The governor, the state auditor, and the state treasurer, ex officio; shall constitute the state highway committee, which shall have the power, and it shall be its duty, to exercise all the powers and perform all the duties now vested in, and required to be performed by the state highway board.

Section 133 of the above 1921 law provided for vacations for state employees as follows: "Each subordinate officer and employ of the several offices, departments, and institutions of the state government shall be entitled, during each twelve months' period, to fourteen days leave of absence with full pay."

The only change in the state highway system to be made by the 1921 legislature was a change in the name of the McClellan pass Highway. It was given the name of Naches Pass Highway, by Chap. 34.

Chapter 80, Laws of 1921, made it the responsibility of the state highway committee to grant to persons or corporations franchises for tile occupancy of state highway rights of way by water pipes, gas pipes, telephone, telegraph and electric light and power lines.

Prior to July, 1921, all testing of highway construction materials was done in the Testing Laboratory of the City of Seattle. The 1921 legislature provided funds for the fitting up and operation of a division of highways' laboratory. The abandoned boiler and coal rooms of the Temple of Justice were fitted up for a laboratory. Testing machines were purchased and others were assigned to the division of highways by the Federal government from surplus war supplies

During 1920, the registration of motor vehicles had reached the total of 186,827. Accordingly, the 1921 legislature wisely passed the Motor Vehicle Act controlling the licensing and operation of all motor vehicles. By this law, Chapter , all fees from motor vehicle registrations were to be paid into the Motor Vehicle Fund. After paying therefrom one-half the cost of license collection and repaying to the two island counties receipts received from them, the sum of \$1,400,000 was to be paid into the Primary Highway Maintenance Fund and the balance used for primary highway construction. The primary highway maintenance fund was to be distributed to cities of the first and second class and to counties as follows: (1) to each city of the first and second class, \$500 for each mile of primary state highway running through it, (2) to each city of the third and fourth class, the sum of \$300 for each mile of primary state highway within its limits, (3) to each county \$300 for each mile of primary state highway, and (4) the balance to be credited to the several counties, other than the island counties, in proportion to the amounts paid into their permanent highway funds.

The first gas tax in Washington was provided by Chapter 173, Laws of 1921. This was a tax of one cent a gallon on every gallon of gasoline a distributor sold. The amounts collected were to be placed to the credit of the motor vehicle fund.

In 1921, Highway District No. 1 (Seattle) was divided. As of January 1, 1921, Pierce County, Kitsap County and eastern Lewis County was made a separate district. After one month's operation, this district was again combined with the Seattle district, although the number designation was retained as District No. .1 and District No. 2. On April 1, 1921, the portion of District No. 1 east of the Cascade Mountains was made a separate district with headquarters in Yakima. This gave the following. departmental roster:

- E. V. Kuykendall, Director of Public Works
- James Allen, Supervisor of Highways
- Geo. T. McCoy, Office Engineer
- C. E. Andrews, Bridge Engineer
- E. R. Hoffman, Engineer of Materials
- F. R. Hewett, Maintenance Engineer

DISTRICT ENGINEERS:

District No.	
1 and 2	R. H. Wilson, 420 County-City Bldg., Seattle
3	W. H. Yeager, Jr., Olympia
4	R. M. Gillis, 410 ½ Main St, Vancouver
5	M. L. Mook, Masonic Temple Bldg., Yakima
6	J. W. Hamilton, Court House, Walla Walla
7	Cuy G. Harvey, 418 Realty Bldg., Spokane

The administration of state highway operations remained under the nominal supervision of the Director of Public Works for one biennium only. Chapter 62, Laws of 1923, abolished the division of highways and the office of supervisor of highways and authorized the governor to appoint a state highway engineer.

By Chapter 124, Laws of 1923, the public highway fund was abolished and all monies therein transferred to the Motor Vehicle Fund.

A complete revision and renumbering of the passage of Chapter 185, Laws of 1923. As a result of this legislation, the state highway system consisted of the following:

State Road No.	
1	Pacific Highway - Blaine - Vancouver
2	Sunset Highway - Seattle - Renton - Wenatchee - Idaho Line
3	Inland Empire Highway - Laurier - Virden; Dodge - Asotin; Wallula - Oregon Line; Walla Walla - Oregon Line
5	National Park Highway - Tacoma - Rainier National Park; Elbe - Jackson's Prairie; Kosmos Sheepskull Gap Renton; Sheepskull Gap - Yakima
6	Pend Oreille Highway - Spokane - Iner. Edy.
7	North Central Highway - Ellensburg - Davenport
8	North Bank Highway - Vancouver - Buena
9	Olympia - Port Angeles - Olympia; Discovery Bay, Port Townsend
10	Chelan - Okanogan Highway - Quincy - Wenatchee, Orondo - Okanogan - Inter. Bdy.
11	Central Washington Highway - Pasco - Sunset Highway West of Spokane
12	Ocean Beach Highway - Chehalis - Astoria Ferry; Nasel River- Kelso; Cathlamet North - Cathlamet
13	Willapa - Grays Harbor Highway - Raymond -Aberdeen West
14	Navv Yard Highway - S.R.9 - Charleston - Tidewater Creek - Gig Harbor; Port Orchard Harbor
	Eastern Route of Inland Empire Highway: Idaho Line - Pullman - Garfield - Rosalia

Secondary Highways

State Road No.	
4	Tonasket - San Poil Highwa - Wilbur - Republic - Tonasket
	Methow Valley Highway: Pateras - Barron
21	Kingston - Port Orchard Bay
22	Meyers Falls - Davenport
	Cascade Wagon Road: Twisp - Marblemount - Bridge Creek - Stehekin

The amount of the gasoline tax was by Chapter 81, Laws of 1923, increased to two cents a gallon. The same act provided for a refund of the gas tax for non-highway uses of gasoline.

In the same year, the Motor Vehicle Act was revised by the passage of Chapter 181. The principal change was that thereafter all balances in the motor vehicle fund, after payments to cities and collection costs, were to be applied to maintenance and construction of primary state highways and to construction of secondary state highways. This, for the first time, placed the maintenance of primary state highways under the control of the state highway department.

Only slight changes affecting the operation of the state highway department were brought lit about by the 1925 legislature. Chapter 185, Laws of 1925, revised the distribution of motor vehicle funds by providing that after the refund to island counties and distribution of permanent highway funds to counties, cities of the first and second class were to receive an allotment equivalent to \$500 for each mile of primary state highways within their limits for maintenance and improvement of such routes, and that cities of the third and fourth class were to receive \$500 a mile for each hue of paved primary state highway but that the state would maintain the route of all unpaved primary state highways through such cities; the balance remaining in the Motor Vehicle Fund to be used by the state highway department for the construction and maintenance of primary state highways and for the construction of secondary state highways.

By the passage of Chapter 26, Laws of 1925, the status of State Road No. 4, State Road No. 22 and the Methow Valley highway was changed from that of secondary state highways to that of Primary State Highways. In addition, the following roads were added as part of the primary state highway system:

State Road No.	
1	Bellingham - Austin Pass (Mount Baker Road) - as a part of State Road No. 1, Pacific Highway
2	Fall City - Bothell - as a part of State Road No.2, Sunset Highway
3	Colfax - Pullman - as a part of State Road No. 3, Inland Empire Highway
5	Auburn - Sumner - Tacoma - as a part of State Road No. 5, National Park Highway

It was during the 1923-1927 biennium that Mr. James Allen's lengthy service as head of the state highway department came to an end. On April 1, 1925, Mr. J. W. Hoover was appointed State Highway Engineer.

A rearrangement of highway districts was made, resulting in the present arrangement of districts. As of October 1, 1926, the roster of the state highway department was:

J. W. Hoover, State Highway Engineer
Geo. T. McCoy, Assistant State Highway Engineer
E. R. Hoffman, Construction Engineer
G. E. Andrew, Bridge Engineer
H. G. Perak, Office Engineer
H. C. Tibbals, Equipment Engineer
C. F. Dufault, Right of Way Agent

DISTRICT ENGINEERS

District No.	
1	R. W. Wilson, 504 Maynard Bldg., Seattle
2	L. A. McLeod, PO BOX 430, Wenatchee
3	James A. Davis, Olympia
4	R. M. Gillis, 612 ½ Main Street, Vancouver
5	J. W. Hamilton, PO BOX 198, Yakima
6	Guy G. Harvey, 418 Realty Bldg., Spokane

During the following biennium, 1927-1929, the first extensive oiling program of the state highway department got under way. This resulted from an appropriation by the 1927 legislature of \$200,000 to be used for experimental work in dust prevention. Light oil treatment was tried in various sections throughout the state, but heavy oil was used at that time only on highways in arid and irrigated sections east of the mountains. A considerable amount of calcium chloride was also used as a dust preventative in the western part of the state.

The same session of the legislature defined as the highway policy of the state that all public highways should be free and open for public travel, and provided for the regulation of existing toll bridges by the Department of Public Works, and for the purchase or condemnation of toll bridges by the State of Washington or any county whenever any appropriation therefore has been made in advance.

The Motor Vehicle Act was again revised and expended by Chapter 309, Laws of 1927 and the maximum speed limit was raised to 40 miles an hour. Unlawful encroachments on highway rights of way were defined. Prior to this legislation, the maximum legal speed limit for motor vehicles was 30 miles an hour.

Mr. Samuel J. Humes replaced Mr. J. W. Hoover as state highway engineer on May 1, 1927. About the same time numerous other changes in division and district heads were also made.

By the provisions of Chapter 88, Laws of 1929, the gasoline tax was raised to three cents, proceeds from the additional one cent tax to be paid into the newly created Lateral Highway Fund. By this plan each county was to prepare a master plan of Farm to Market Roads, on which they proposed to expend Lateral highway funds, one requirement being that such highways directly or in-directly connect with state highways. One third of each first class county's share of lateral highway funds was to be allocated to first class cities in each county. Plans for lateral highway improvements were to be approved by the state highway engineer and payments made by the state treasurer from lateral highway funds to the credit of the county or city, except in the case of island counties to whom the funds were to be paid direct.

The division of authority between the state highway engineer and the non-technical state highway committee was a far from satisfactory arrangement, and during the 1927-1929 biennium friction developed between the state highway engineer and the other members of the state highway committee. At times, this controversy reached almost classic proportions. The 1929 legislature, by the passage of Chapter 115, abolished the state highway committee, created the position of director of highways and made the department of highways a separate code department.

The same legislature again revised the motor vehicle code, particularly with reference to truck equipment, weight and speed.

A considerable number of changes in the state highway system and in the revenues available to the department of highways were brought about by the 1931 legislature.

Chapter 36 added the Lake Samish Road as a branch of State Road No. 1 and Chapter 38 added as a branch of the same road a connection leading from a junction near Duwamish to State Road No. 2.

Chapter 29 added three additional sections to State Road No. 5; Enumclaw - Wilkeson - Mount Rainier National Park, Auburn westerly to State Road No. 1, and Naches via Tieton River to Clear Fork. As a branch of State Road No. 10, Chapter 31 added a branch from Brewster to State Road No. 2 near Coulee City. The terminus of State Road No. 13 was changed by Chapter 30 to a junction with State Road No. 9 at Aberdeen via Cosmopolis.

A new primary state highway was established by Chapter 35 which designated as State Road No. 15 a highway beginning at a junction with State Road No. 2 near Peshastin, thence by Stevens Pass to a connection with State Road No. 1 at Everett. The same chapter Designated as the Washington Loop Highway the following route over existing state highways: Beginning at Seattle, thence over State Road. No. 2 by way of Renton to State Road No. 3 near Teanaway, thence over State Road No. 3 by way of Yakima and Walla Walla to Clarkston, from the Idaho State Line over the Eastern Route of the The Inland Empire Highway to Pullman, thence north over State Road No. 3 to Spokane, thence over State Road No.2 to State Road No. 15, thence over State Road No.15 to Everett.

State highway revenue was affected by the provisions of Chapter 140 which changed the license fee for automobiles from a graduated fee dependent upon the horsepower of the car to a flat fee of \$3.00, and instead increased the gasoline tax to five cents.

The director of highways was authorized by Chapter 118 to adopt and designate uniform standards for guide posts

and markers to be placed on state highways, principal county roads and principal streets in incorporated cities and towns.

Near the close of the 1931-1933 biennium another change in the position of director of highways occurred. On March 20, 1933, Mr. L. V. Murrow was appointed to succeed Mr. Humes.

By the time the 1933 legislature convened the state was passing through the darkest days of the depression, with unemployment and many very serious problems. Under the circumstances, it was not unexpected that legislation would be passed diverting funds formerly available for state highway construction into other channels. For the first time in its history, the department of highways became burdened with a bond issue. Chapter 65, Laws of 1933, authorized the issuance of a \$10,000,000 emergency relief bond issue to be financed from the gasoline tax, this in spite of the fact that very little of this fund was to be used for highway purposes. To handle interest and retirement charges on this 20-year bond issue, the act provided that four-tenths of one cent of the gasoline tax was to be set aside each month.

Further evidence of the trend at that time was the enactment of the Secondary Highway Law. As has been stated before, the counties had been receiving under the lateral highway law, the proceeds of one cent of the five cent gasoline tax for use on farm-to-market roads. In addition, under the permanent highway law, they received an allotment of state highway revenue which amounted to approximately three-fourths of the amount received under the lateral highway law. By the passage of the secondary highway law, both the lateral highway and the permanent highway laws were repealed, but in as much as the new secondary highway law provided for the counties receiving the net proceeds of three of the five cent gasoline tax, the net result of this legislation was an increase of about seventy per cent in the amount of state funds transferred to the counties.

The secondary highway law provided that from the amounts transferred to the counties, there should be allocated to incorporated cities and towns the equivalent of two-tenths of one per cent of their assessed valuations.

The secondary highway law specified that counties could use these funds, under state supervision, for maintenance and construction of county roads. The state's participation, however, was limited mainly to approval of the initiating resolutions, plans and specifications, and final inspections of the completed improvements. Cities were allowed even greater latitude and could use secondary highway funds for bond retirement and other similar purposes.

During a special session of the legislature, held late in 1933, an act was passed authorizing the department of highways to construct roads leading from the state highway system to the Grand Coulee Dam then under construction, and to maintain these roads until January 1, 1937. These roads were not, however, designated as parts of the state highway system.

As in the preceding biennium, large amounts of special Federal appropriations were made available for highway construction during the 1933-1935 period. As the primary object of these Federal appropriations was to relieve unemployment, department of highway contracts carried provisions calling for the use of as much hand labor as possible.

Financed mainly from special Federal grant funds, there was built during 1934, a new highway building at the cost of \$171,172.90. This was built as a semi-permanent building and was faced with brick. It therefore did not conform to the other permanent buildings in the capitol group, all of which are faced with cut stone. The Department of Highways moved into these new quarters on July 1, 1934, this building continued to be the department's headquarters for the next six years, by which time it had expanded to such an extent that the building was no longer adequate for its needs. The department then moved to the newly constructed Transportation Building and the Highway Building became the headquarters for the Department of Labor and Industries.

An important development during the 1933-1935 biennium was the inauguration of a centralized control of personnel for the Department of Highways. Detailed information was obtained concerning every employee in the department and a service record for each employee was set up, this to be a continuous record of his service with the department.

Service records, as complete as possible, were also made for all former employees of the department for whom any authentic information was obtainable. At first, these service records were not kept for temporary employees on a daily wage but In January, 1938 the plan was extended to cover those employees also. An efficiency rating system was also developed to provide annual merit ratings for employees, the original plan being to apply this merit rating only to the engineering personnel.

Other innovations during the 1933-1935 biennium were the use of aerial photographic mapping as an aid in securing adequate highway locations, and the use of radio communication. The latter was first started as an aid in snow removal operations, two-way radio sets being established in the headquarters office in Olympia, in the district office in Seattle, and on the snow removal equipment operating in Snoqualmie Pass.

Because of the need for more adequate control of heavily loaded vehicles on state highways, a traffic control organization was established. Twenty-six stationary platform truck scales were installed at vantage points along state highways, and for use at points remote from these weighing stations each of the six traffic officers was provided with a drive-on loadometer to be carried in his car.

There were presented to the 1935 legislature a complete revised state highway code and a report of a highway cost commission, work on both of which had been proceeding during most of the 1933-1935 biennium. The former was a modification of all highway laws into one complete measure, including such changes as seemed advisable and the elimination, by repeal, of all other highway legislation which over a long period of years had been accumulating on the statute books. The report of the highway cost commission represented the work of a commission and a trained highway economist in studying highway use by various types of equipment, and the recommendations of the commission, based on their studies, of the cost equitable basis to apportioning highway costs.

Both of these matters demanded much study by the legislature, something which that body, apparently, did not feel justified in giving the measures during the 1935 session. Disregarding the findings of the highway cost commission, the legislature set up an interim measure changing the basis for licensing trucks. This measure broke down the licensing rates into broad increments, but with lower rates, particularly for lighter equipment, resulting in a net loss of revenue from that source of approximately \$500,000 annually. The same legislature directed that the work of the cost commission be continued for another two years and also that a complete codification of highway laws be presented to the 1937 legislature.

A progressive measure, passed by the 1935 legislature at the request of the Department of Highways, was the creation of the Highway Equipment Fund, as provided for in Chapter 144. This was a fund to be used by the Department of Highways as a revolving fund to cover expenditures for the purchase, replacement and repair of equipment, other than office equipment and engineering instruments. Under this act, there was established by the Department of Highways, a rental system whereby each piece of equipment was listed in an inventory and credited to the equipment fund, which fund virtually became the owner of the equipment. The use of each piece of equipment was then made on the basis of an adequate return to the equipment fund in rentals. This permitted true costs of construction and maintenance operations to be arrived at. It also enabled the Department of Highways to gauge the economic efficiency of various pieces or types of equipment.

At the request of the United States Bureau of Public Roads, the Department of Highways started in 1936 a state-wide highway planning survey. This consisted of making a comprehensive study of the entire public road system of the state as a preliminary step to the formulation of a sound, long-term highway program. The survey was developed along three distinct lines: (1) Road Inventory, (2) Traffic Survey, and (3) Financial Survey.

The proposed Highway Code, on which much additional work had been done during the 1935-1937 biennium, was again submitted to the 1937 legislature, this time in several distinct sections. Back of these sections was enacted into law with but minor changes by the 1937 legislature. These divisions of the code were as follows:

Chapter 53 covers the subject of highway administration with respect to state highways, the powers and duties of the Director of Highways, the subjects of right of way, construction and maintenance. One part of this section makes it the duty of the Director of Highways to set up and place in operation a merit system for the rating of employees of the department.

Chapter 187 relates to the administration of county roads and covers the matter of state aid to counties and cities.

Chapter 188 refers to vehicle licensing, certificates of ownership and registration, and the licensing of vehicle operators.

Chapter 189 covers the matter of motor vehicle operation and equipment, also rules of the road. By this chapter, the maximum legal speed limit for motor vehicles was raised to fifty miles an hour.

Chapter 173 provides authority for a Washington Toll Bridge Authority to establish and construct toll bridges, issue bonds for financing and to collect tolls for the retirement of financial obligations.

Chapter 208 apportions, allocates and appropriates for the several highway administrative agencies and other specific purposes, the fund accruing to the credit of the motor vehicle fund.

Chapter 190 designates the highways comprising the Primary State Highway system, adding a total of 275 miles to the former existing system:

- P. S. H. No. 1, Pacific Highway --- International Bdy, via Lake Samish, to Oregon line; Bellingham - Austin Pass; Bellingham- P.S.H. 1 via Blanchard, Mount Vernon - Anacortes; Everett - P. S. H. 1 via Broadway Avenue.
- P. S. H. No. 2, Sunset Highway--- Seattle - Renton - Snoqualmie Pass - Blewett Pass - Wentachee - Waterville - Spokane - Idaho Line; Seattle - Snoqualmie Pass to north of Lake Washington; Almire - Grand Coulee dam.
- P. S. H. No. 3, Inland Empire Highway--- P. S. H. 2 near Cle Elum, Yakima; Walla Walla - Dayton - Spokane - Colville - International line at Laurier; Dodge - Pomeroy - Clarkston -Idaho line; Clarkston - Asotin - Oregon Line; Wallula -Oregon line; Walla Walla - Oregon line; Rosalia - Pullman - junction S. E. of Uniontown - via two routes to Idaho line; Colfax - Pullman - Idaho line; Palouse - Idaho line.
- P. S. H. No. 4, Tonasket - San Poil Highway --- Wilbur - Republic -Tonasket - P. S. H. 10
- P. S. H. No. 5, National Park Highway -- Seattle - Byrn Mawr - Renton - Auburn - Enumclaw - Chinook Pass - Yakima; south of Chehalis - Kosmos - White Pass - Junction northwest of Yakima; Tacoma - Elbe - Rainier Nat. Pk., Elbe - Kosmos; Enumclaw - northwest entrance Rainier Nat. Pk.; Auburn - Sumner - Tacoma; Auburn - P. S. H. 1; of Chinook Pass - Junction west of White Pass; Sumner - Buckley; Enumclaw - Summit - P. S. H. 2 at Renton.
- P. S. H. No. 6, Bend Oreille Highway--- P. S. H. 3 north of Spokane -Newport - Metaline Falls - International line; Newport -Idaho line.
- P. S. H. No. 7, North Central --- Ellensburg - Vantage -Ouincy - Davenport; Soap Lake - P. S. H. 2
- P. S. H. No. 8, Evergreen Highway--- Vancouver - Goldendale - P. S. H. 3 southeast of Yakima; Marhill - Maryhill Ferry
- P. S. H. No. 9, Olympic Highway --- Olympia - Elma - Aberdeen-Port Angeles - west of Olympia; Discovery Bay - Port Townsend; Elma - P. S. H. 1; Montesano - P. S. H. 13.
- P. S. H. No. 10, Chelan - Okanogan Highway--- Quincy - P.S.H. 2 east. of Wenatchee; P. S. H. 2 northwest of Wenatchee - Chelan - Pateros - Okanogan - International line; Brewster - P. S. H. 2 west of Coulee City.

- P. S. H. No. 11, Columbia Basin Highway--- Pasco - Ritzville -P. S. H. No. 2.
- P. S. H. No. 12, Ocean Beach Highway --- Chehalis - South Bend - Johnson's Landing - Kelso; Johnson's Landing Ilwaco - Megler; P. S. H. 12 N. E. of Ilwaco - P. S. H. 12 E. of Ilwaco; Longview - P. S. H. 1 S. of Kelso.
- P. S. H. No. 13, Willapa - Grays Harbor Highway---Raymond - P. S. H. 9 at Aberdeen.
- P. S. H. No. 14, Navy Yard Highway --- P. S. H. 9 N. of Shelton - Port Orchard - Gig Harbor; Port Orchard - Harper.
- P. S. H. No. 15, Stevens Highway--- Peshastin - Stevens Pass - Everett.
- P. S. H. No. 16, Methow Valley Highway --- Pateros - Twisp - Barron.
- P. S. H. No. 17, Cascade Wagon Road --- Twisp - Marblemount; Stehekin - NW to P. S. H. 17.
- P. S. H. No. 18, --- Wye connection with P. S. H. 7 at Burke Neppel - Ritzville.
- P. S. H. No. 21, Kitsap Peninsula Highway --- Kingston - Port Gamble -Poulsbo - Bremerton - P. S. H. 14 W. of Port Orchard; Keyport W. to P.S.H. 21.
- P. S. H. No 22, Coulee Reservoir highway Davenport - Kettle Falls, Junction. P. S. H. 3 E. of Kettle Falls International Line.

The *Secondary State Highway System* was designated by Chapter 207 as follows:

S. S. H. 1A,

Blaine - P. S. H. 1 N. of Deming, P. S. H. 1 to point E. of Deming - Sedro Woolley - Arlington - P. S. H. 2 SE of Bothell; S. S. H. 1 A B. of Van Buren - International Line west of Sumas

S. S. H. 1B,

Bellingham N. to International Line.

S. S. H. 1C,

P. S. H. 1 S. of Blanchard - P. S. H. 1 at Whitney; Burlington - S. S. H. 1C N. (East) of Whitney.

S. S. H. 1D,

P. S. H. 1 SE. of Anacortes - Deception Pass - Columbia Beach.

S. S. H. 1E,

P. S. H. 1 at Conway - E. Stanwood - P. S. H. 1 -Arlington

S. S. H. 1F,

P. S. H. 18 of Allen - E. to P. S. H. 1 N. of Burlington - Sedro Woolley.

S. S. H. 1G,

Mount Vernon - E. to S. S. H. 1A

S. S. H. 1H,

Conway - McMurray

S. S. H. 1I,

Everett - Mulkilteo - P. S. H. 1 South of Everett

S. S. H. 1J,

P. S. H. 1 north of Seattle - Lake Washington - Seattle near Naval Air Station

S. S. H. 1K,

Seattle - Des Moines - P. S. H. 1 south of Des Moines

S. S. H. 1L,

P. S. H. 5 south of Tumwater - P. S. H. 9 near Rochester

S. S. H. 1M,

P. S. H. 1 south of Tumwater - P. S. H. 9 near Rochester

S. S. H. 1N,

P. S. H. 1 north of Centralia - P. S. H. 9 near Rochester

S. S. H. 1P,

Toledo - Ryderwood.

S. S. H. 1R,

P. S. H. 1 north of Castle Rock - Columbia National Forest NW. of Mt. St. Helens

S. S. H. 1S,

North of Woodland Amboy - Battleground - P. S. H. 1 north of Vancouver

S. S. H. 1T,

Vancouver - Sara - Ridgefield - P. S. H. 1 south of La Center

S. S. H. 1U,

Battleground - Orchard

S. S. H. 1V,

Tacoma - NE. of Redondo - Des Moines

S. S. H. 1W,

P. S. H. 1 near Snohomish - King Co. Line - Edmonds

S. S. H. 1X,

P. S. H. 1 at Milton - S. S. H. 5D. (For S. S. H. 1Y see page 33.)

S. S. H. 2A,

Renton - Kirkland - P. S. H. 2 west of Bothell - along P. S. H. 2 to Bothell - Everett

S. S. H. 2B,

P. S. H. 2 at Lake Forest Park - P. S. H. 1 near Snohomish County Line

S. S. H. 2C,

Woodinville - Duvall

S. S. H. 2D,

West of Issaquah - Redmond - Kirkland

S. S. H. 2E,

W. of Cle Elum - Roslyn - National Forest

S. S. H. 2F,

P. S. H. 2 north of Coulee City - Northeast to Federal Reservation at Grand Coulee Darn

S. S. H. 2G,

P. S. H. 2 west of Reardon - Edwall - S. S. H. 11F northwest of Sprague.

S. S. H. 2H,

Spokane - Millwood - P. S. H. 2

S. S. H. 2I,

Virden - south to P. S. H. 3 southeast of Teanaway

S. S. H. 3A,

Union Gap - south of Yakima River - Toppenish - Mabton - Prosser

S. S. H. 3B,

Toppenish - White Swan

S. S. H. 3C,

S. S. H. 3A south of Union Gap - S. S. H. 3B west of Toppenish

S. S. H. 3D,

Touchet - south of Eureka - Prescott

S. S. H. 3E,

Walla Walla - Prescott - P. S. H. 3 northeast of Toppenish

S. S. H. 3F,

Colfax - Palouse

S. S. H. 3H,

P. S. H. 2 near Opportunity - Rockford - Fairfield - Latah - Tekoa - Oaksdale; Tekoa - Idaho

S. S. H. 3I,

P. S. H. 3 south of Spokane - P. S. H. near Grand Boulevard

S. S. H. 3J,

P. S. H. 3 near Springdale - Long Lake

S. S. H. 3K,

Pomeroy - Peola - P. S. H. 3 west of Clarkston

S. S. H. 3L,

P. S. H. 3 north of Dayton - P. S. H. 3 west of Pomeroy

S. S. H. 3M,

P. S. H. 3 northwest of Thorp - Thorp - Ellensburg

S. S. H. 4A,

Republic - Curlew - International Line near Danville

S. S. H. 4B,

P. S. H. 4 and P. S. H. 2 west of Wilbur - Odessa - P. S. H. 11 near Lind.

S. S. H. 4C,

P. S. H. 4 north of Wilbur - P. S. H. 2 south of Grand Coulee Dam

S. S. H. 5A,

P. S. H 5 south of Maple Valley - Kent - P. S. H. 1

S. S. H. 5B,

Auburn - S. S. H. 5A south of Maple Valley

S. S. H. 5C,

Renton - S. S. H. 5A east of Kent

S. S. H. 5D,

Puyallup - north to P. S. H. 1

S. S. H. 5E,

Puyallup - south to Orting - P. S. H. 5 south of Buckley; S. S. H. 5E southeast of Orting - Electron

S. S. H. 5G,

Puyallup - P. S. H. 5 south of Tacoma - P. S. H. 1 south of Tacoma

S. S. H. 5H,

P. S. H. 5 south of Tacoma. - McKenna - Yelm - Tenino

S. S. H. 5I,

Yelm- P. S. H. 1 at Tumwater

S. S. H. 5J,

McKenna - East to P. S. H. 5

S. S. H. 5K,

Morton - Onalaska - P. S. H. 1 south of Chehalis

S. S. H. 5L,

Morton - Riffe

S. S. H. 5M,

P. S. H. 5 west of Auburn - P. S. H.1 south of Seattle

S. S. H. 6A,

Tiger - Colville

S. S. H. 6B,

Usk - Sacheon Lake - P. S. H. 6 southwest of Newport

S. S. H. 7B,

Ellensburg - P. S. H. north of Kittitas

S. S. H. 8A,

Vancouver - Orchard - Camas

S. S. H. 8B,

Washougal - along Washougal River - P. S. H. 8 east of Washougal

S. S. H. 8C,

East of Stevenson - along Wind River - Columbia National Forest

S. S. H. 8D,
P. S. H.8 near White Salmon - Columbia National Forest

S. S. H. 8E,
P. S. H.8 south of Goldendale - Peterson - Prosser

S. S. H. 9A,
Port Angeles - Pysht - P. S. H. 9 near Sappho

S. S. H. 9B,
P. S. H. 9 south of Sol Duc River - Mora; S. S. H. 9B near Sol Duc and Bogachiel Rivers - La Push

S. S. H. 9C,
P. S. H. 9 north of Hoquiam - Pacific Beach - Copalis; S. S. H. 9C near Copalis Crossing

S. S. H. 9D,
P. S. H. 9 west of McCleary - P. S. H. 9 south of Shelton

S. S. H. 9E,
P. S. H. 9 south of Discovery Bay - Port Ludlow

S. S. H. 10A,
Ornak - Disautel - Nespelem - Federal Reservation at Grand Coulee Dam

S. S. H. 10B,
P. S. H. 10 east of Bridgeport - Federal Reservation at Grand Coulee Dam

S. S. H. 10C,
Chelan - Manson

S. S. H. 10D,
P. S. H. 10 Wye - Chelan Falls - Oromdo

S. S. H. 11A,
Connell - Yakima, including free ferry

S. S. H. 11B,
Dusty - Washtucna - P. S. H. 11 south Connell

S. S. H. 11C,
Sprague - Ewan -- St. John - Steptee

S. S. H. 11E,
Ritzville - Washtucna

S. S. H. 11F,
Sprague - Harrington

S. S. H. 12A,
P. S. H. 12 south of Seaview - Long Beach - Ocean Park

S. S. H. 12B,
Megler - P. S. H. 12 north of Naselle

S. S. H. 12C,

P. S. H. 12 west of Grays River - Columbia River; P. S. H. 12C - Eden

S. S. H. 12D,

P. S. H. 12 north of Cathlamet - along Elekemin River - West fork of Elekemin River

S. S. H. 12E,

P. S. H. 12 west of Chehalis - Napavine - Winlock -P. S. H. 1 north of Toledo

S. S. H. 13A,

Raynond - Tekeland - north of Westport; Aberdeen - S. S. H. 13A south of Westport

S. S. H. 14A,

P. S. H. 14 southwest of Belfair - Shelton

S. S. H. 14B,

P. S. H. 14 east of Purdy - S. S. H. 14 A north of Allen

S. S. H. 14C,

Gig Harbor - south along Puget Sound

S. S. H. 15A,

P. S. H.15 east of Everett - northeast to S. S. H. 1A - Granite Falls

S. S. H. 15B,

Monroe - Duvall - Fall City

S. S. H. 15C,

Leavenworth - along Lake Wenatchee- P. S. H. 15 north of Winton

The Highway Code also provided for motor vehicle inspection, examination of vehicle operators, central and uniform reporting of motor vehicle accidents, reporting by garages of motor vehicle repairs and coordinated reporting of automobile thefts.

Another section of the Highway Code covered the matter of requiring a prequalification of bidders who contemplated bidding on state highway work.

Chapter 166, Laws of 1937, made provision for a Commission on Highway Transportation, to be composed of the director of highways, a transportation engineer to be appointed by the governor, the director of public service, the director of licenses and the chairman of the tax commission. The duties of this commission were to make a study of facts having a bearing on the distribution of highway costs, taxes and benefits, the adaptation of highways to traffic requirements, coordination of motor vehicle administrative activities of various governmental units, reciprocal relations with other states, fostering of sound economic conditions among motor carrier operators and the prevention of highway accidents.

During the 1937-1939 biennium much progress was made in improving the appearance of highways being landscaped, roadside beautification, and the placing of attractive historical markers. The use of radio was also expanded until 45 operating stations were included in the system. The planning survey work, started during the preceding biennium, was prosecuted energetically and the county maps and reports practically completed. It was planned to continue a considerable force of employees on this work in order to keep the maps, financial data and other statistical information up to date.

During the same biennium a Division of Traffic Engineering was established in the Department of Highways. The objectives of this division were: accident analysis, traffic control devices, vehicle inspection, weighing station operation, and traffic safety analysis.

By the passage of Chapter 5, Laws of 1939, both the Lake Washington Bridge and the Tacoma Narrows Bridge were placed on the state highway system, the routes of P. S. H. No. a and P. S. H. No. 14 thereafter reading:

Primary Highway No. 2: West approach to Lake Washington Bridge, in Seattle, thence by way of Lake Washington Bridge and approaches to North Bend, Snoqualmie Bass, Cle Elum, Blewett Pass, Wenatchee, Waterville, Wilbur, Davenport and Spokane to Idaho line; Seattle to Renton to junction with P. S. H. 2 in vicinity of Issaquah: Seattle by north end of Lake Washington to P. S. H. 2 in vicinity west of Snoqualmie Pass; Almira to Grand Coulee Dam.

Primary Highway No. 14: Junction with P. S. H. 9 north of Shelton - Port Orchard - Tacoma Narrows bridge - east end of Tacoma Narrows Bridge in Tacoma; Port Orchard - Harper.

Chapter 175, of the same session laws, provided for construction of mine-to-market roads by the Department of Highways, the funds being contributed by the State Department of Highways to be matched with County funds. This program was to be under the control of a commission to be made up of the Director of Conservation and Development, the Director of Highways, and the Executive Officer of the Washington State Planning Council. Construction by the state was to be in the nature of State aid; the roads when constructed were to become county roads. The first appropriation from the Motor Vehicle Fund for this purpose was in the sum of \$100,000.

A still further reduction in the amount of gasoline tax revenues, available to the Department of Highways, was brought about by Chapter 181 which provided that the net amount of gas tax revenues, after payment of collection costs, refunds and general obligation bond charges, was to be distributed 15 percent to cities, on a population basis, 41 ½ percent to counties, and 43 ½ percent to the Department of Highways. This new method of distribution increased the cities' allotment by about 40 percent the additional funds coming from the counties' and state's former allotments.

An appropriation of \$75,000 was made available to the Director of Highways by Chapter 169 to have studies and survey made of roads which would be necessary to serve areas to be reclaimed by the ultimate Grand Coulee development.

The completion of the Lake Washington Floating Bridge and of the Tacoma Narrows Bridge in July, 1940, might well be considered as marking the peak of forty years development of the Department of Highways, The years immediately preceding were ones of unusually large construction programs, of spectacular projects, of development and accomplishment in every phase of Department of Highways' 5 activities. War rumblings were even then audible and shortly thereafter there followed a period of transition from peace to war time economy, of curtailment of funds available for highway construction, of loss of personnel, and ultimately of a lowering of the department 5 previous high standards to meet war time necessity.

One of the first losses in personnel was that of the director, Mr. L. V. Murrow, who resigned September 15, 1940, to accept military service. Man other division heads, assistant division heads and subordinate employees followed in quick succession, either to accept military service or to associate themselves with some form of defense work. Mr. James A. Davis, on September 16, 1940, assumed the administration of the department as acting director of highways, a position he retained until June 30, 1941.

A tragic event occurred on November 7, 1940, when the newly constructed Tacoma Narrows bridge collapsed during a heavy wind storm. This was unquestionably the worst catastrophe that had befallen the department in its entire history. Fortunately, no loss of life occurred, and through the collection of insurance and the salvage of materials, a very considerable part of the cost was recovered. Immediately thereafter, arrangements were made for ferry service to be operated by the Department of Highways from the end of Sixth Avenue in Tacoma to Point Fosdick, and a crew of bridge engineers was started on extensive studies preparatory to redesigning a new bridge to replace the one which had failed. These studies included exhaustive investigation of wind action on large scale models in wind tunnels built at the University of Washington and elsewhere.

A somewhat radical departure from normal Department of Highways practice was brought about by the creation of a Highway Advisory Commission by chapter 134, Laws, of 1941. This commission was to be composed of five

members who were to be appointed by the governor for staggered terms of one to five years. The commission was to act in an advisory capacity in designating where appropriations not specifically tied down by law were to be expended, to pass on routes of highways and on plans and specifications, and to submit recommendations to the governor, upon request, concerning all matters affecting Department of Highways administration.

The gasoline tax law was revised by chapter 127, Laws of 1941, to include diesel and other fuels not previously covered by the gasoline tax.

An addition to the state system was made by the 1941 legislature by the passage of Chapter 225 establishing as Washington State Historical Road No. 1, "Byrd's Mill Road", a road leading from an intersection with Secondary State Highway No. 4D, in Puvallup, to an intersection with Primary State Highway No. 1, at South 84th Street near the south limits of Tacoma, and thence following the old pioneer road crossing Chambers Creek near the old "Byrd's Mill" to Puget Sound, at Steilacoom. This road was the first road to be established by law in Washington, it being established by the legislature of Oregon Territory in 1852, and after Washington Territory was formed its legislature acted to establish it as a Military road by laws of 1854-56-57.

Chapter 116 revised the motor vehicle law as regards dimensions weight and specifications for trucks and other motor vehicles.

During the 1941-1943 biennium the firm of Griffenhagen and Associates was engaged to make a survey of the Department of Highways, which survey was later extended to other state departments. This consisted of an organizational survey, a somewhat superficial examination of departmental accounting practice, and a complete classification of employees. It involved a study of the duties and responsibilities of each position in the department, the assignment of each position to an appropriate grade, the drawing up of position descriptions, the determination of minimum requirements and the allocation of each employee to his proper classification. Classification schedules were drawn up and salary schedules coordinated to the classification plan. These classification and salary schedules were put into effect although executive authority was not given to put the complete plan, including merit rating of employees, into operation. The merit rating for Department of Highways employees, which has been in successful operation for a number of years, was also discontinued.

Construction during the 1941-1943 biennium, as well as during the succeeding two year period, was largely confined to military access roads, flight strips and other construction deemed necessary to the war effort. The effect of war was also seen on maintenance operations, only such work being performed as was actually necessary to keep highways in safe operating condition. Federal restrictions on the use of both labor and materials also rendered construction difficult.

Mr. Burwell Bantz became Director of Highways on July 1, 1941.

An important forward-looking step of the Department of Highways was the establishment in 1942 of an industrial safety program. By continuous education of employees in accident prevention and the safeguarding of machinery, together with a study of actual work habits, it was hoped that the department's high rate of industrial accidents could be lowered. The results obtained were very gratifying and with each year of the safety program's operation since that time there has been a lowering of industrial insurance costs.

Under former state aid laws, the disbursement of state aid funds to counties and cities had been made only as reimbursement for expenditures that had already been made. By Chapter 82, Laws of 1943, this was changed and monthly allotments of funds were made direct to counties and cities. This law also removed most of the control heretofore exercised by the state over county and city road and street expenditures. Standards for county road construction were still prescribed by the state but the director of highways no longer exercised control over plans, specifications and construction of county or city road projects. The director of highways' principal obligation towards counties and cities was to see that state aid funds were expended for proper street and road purposes.

In 1943, the state legislature, by Chapter 88, empowered the Director of Highways to make a study, during the ensuing two year period, of a tentative secondary state highway system to include "roads in each county that are the most important from the standpoint of traffic service and which will, in his opinion, qualify for inclusion in the

ultimate ten percent Federal aid secondary or feeder road system.” This report was, as requested, submitted to the 1945 legislature.

Although committing themselves to the above orderly method of determination of highway selection on the basis of traffic studies, the same legislature, by Chapter 239, in advance of the information requested, made the following additions and changes in the primary and the secondary state highway systems:

Additions to Primary State Highway System:

Primary State Highway No. 5---Beginning at a point on P. S. H. 5 near the junction of the Greenwater and White Rivers, easterly to the junction with P. S. H. 5 north of Cliffdell.

Primary State Highway No. 8---From vicinity of Maryhill, easterly along north bank of Columbia River to vicinity of Plymouth, thence northeasterly to P. S. H. 3 in vicinity of Kennewick.

Primary State Highway No. 15---Beginning at P. S. H. 15 in vicinity of Monroe, thence to Bothell.

Primary State Highway No. 18---From P. S. H. 11 in vicinity of Ritzville, thence easterly to junction with P. S. H. 3 north of Colfax.

Additions and changes to Secondary State Highway System:

Secondary State Highway No. 1Q---P. S. H. 1 south of Toledo to S. S. H. 1R north of Toutle.

Secondary State Highway No. 2A---P. S. H. 2 at Renton to Kirkland to P. S. H. 2 near Bothell.

Secondary State Highway No. 2C---This secondary highway taken off system.

Secondary State Highway No. 8E---This secondary state highway changed to read: P. S. H. 3 at Prosser to vicinity of Paterson on north bank of Columbia River.

Secondary State Highway No. 11C---This secondary state highway changed to read: Sprague on P. S. H. 11 southeasterly to vicinity of Ewan.

After ten years monthly payments of gas tax revenues for interest and bond retirement on the \$10,000,000 emergency relief bond issue, during which time the sum of \$12,129,232.00 was diverted from highway revenue, the 1943 legislature, by Chapter 115, provided that this should no longer be a charge against gas tax revenues but would be paid from the General Fund.

Due to the fact that most contractors who ordinarily bid on highway construction were at the time engaged in defense work and there was often difficulty in securing satisfactory bids, the legislature in 1943, by Chapter 132, empowered the Director of Highways to enter into negotiations with contractors for highway construction in order to obtain the best possible terms to accomplish the desired work in the event that satisfactory bids could not be obtained. This was enacted as an emergency war measure and was to apply not longer than to April 30, 1945.

Another act of the 1943 legislature, Chapter 135, was the enlargement of the scope of the equipment fund of the Department of Highways to include the operation, by the Department of Highways, of a state-wide automobile pool for the benefit of all State Departments. Under this amendment, equipment could be rented and materials and supplies sold out of the highway equipment fund to any federal, state, county or city political subdivision or governmental agency.

The Mine-to-Market law was amended by Chapter 146, Laws of 1943, to provide that the state would henceforth pay 75 percent of the cost of mine-to-market road construction instead of 50 percent as specified in the original law.

Chapter 253, laws of 1943, provided that the Director of Highways would construct and maintain roads within the

limits of state parks, and for that purpose the sum of \$100,000 was appropriated for the 1943-45 biennium.

During the 1943-45 biennium, the traffic activities of the Department of Highways were reduced by reason of a change authorized by the Legislature. Chapter 202, appropriated \$202,175 from the Motor Vehicle Fund for traffic control, to be used by the Washington State Patrol. For several years previously this work of regulating the operating of heavy trucks had been handled by the Department of Highways. This act transferred the control to the State Patrol. As of December 1, 1943 the traffic work of the Department of Highways had already been lightened by the discontinuance of motor vehicle inspection for the duration of the war.

An appropriation of \$50,000 was made by Chapter 235, laws of 1943, for the purpose of having a study made by some competent firm to determine the best and most equitable method of distributing gas tax moneys to the various counties, such work to be under the supervision of an interim committee of three members of the Senate and three members of the House, the report to be presented to the 1945 legislature. The firm engaged to handle this work was the Public Administration Service, of Chicago. This firm, with the assistance of the planning survey of the Department of Highways, prepared a lengthy 336 page report. The formula recommended was: County truck mileage and motor vehicle registration at the place of residence in the ratio of 70 and 20 respectively, weighted for variations in costs of roads and having a combined weight of 90 percent, and arithmetical equality with a weight of 10 per cent. This recommendation was adopted without change by the 1945 legislature as a basic for gas tax distribution to counties. In order to temporarily compensate any county which suffered under the new distribution formula, there was appropriated by the 1945 legislature \$500,000 from the general fund to be distributed to counties in accordance with their needs.

Two appropriations were made from the Motor Vehicle Fund by the 1945 legislature for tunnel surveys. Chapter 215 appropriated \$100,000 to be used by the Washington Toll Bridge Authority to complete surveys and design of a toll tunnel through the Cascade Mountains from a junction with P. S. H. 5 near the junction of the Greenwater River and the White River to a junction with P. S. H. 5 near Cliffdell. Chapter 230 made a like appropriation for the Washington Toll Bridge Authority to make surveys and studies and prepare a report of the feasibility and probable earnings of a toll tunnel through the Cascade Mountains for railway, vehicular and other travel and to accommodate electric transmission lines and other utilities.

One additional highway was added to the legislature, a connection with P. S. H. 1 east of East Stanwood to McEachern's Corner on Camano Island. This was to be known as secondary State Highway No. 1 -Y.

On January 11, 1945, Mr. Clarence Hickey was appointed Director of Highways to succeed Mr. Burwell Bantz. Mr. Hickey's tenure of office was brief, as he succumbed to a sudden heart attack on June 20 of the same year. Mr. James A. Davis assumed the administration of the Department of Highways as acting Director of Highways on the following day.

As of the date of this report, World War II has just come to an end and the country at large is undertaking the difficult task of reconverting from war time production to a peace time economy. A large amount of post war Federal highway funds is expected to become available to the Department of Highways in the very near future for highway construction. It appears that the Department of Highways can look forward to a highway construction program extending over the next few years which will be the largest construction program in its history. To meet this situation, the department finds itself with greatly reduced personnel. The total number of employees is now about 1,650 or less than $\frac{3}{4}$ of its pre-war strength. Of this number, less than $\frac{1}{6}$ are engineering employees, in fact, the engineering personnel numbers less than the roster of engineering employees as given in the fifth biennium report as of October 1, 1914. It would appear, therefore, that a reorganization and substantial increase in personnel would be in immediate prospect.