

Iowa Highway Program, Finances and Progress

Meeting of Farm Bureau Resolutions Committee
November 5, 1951

By

F. R. White, Chief Engineer
Iowa State Highway Commission
Ames, Iowa

1. Highlights:

(a) Iowa has a total of 101,620 miles of rural roads, both primary and secondary.

(b) On January 1, 1951, a total of 68,869 miles of these rural roads were surfaced - mostly with gravel and crushed stone.

(c) Additional roads are being surfaced at the rate of 2676 miles per year.

(d) Iowa's highway program provides for a surfaced road to every reasonably located rural home and a paved or other type of dustless surface on all primary roads.

(e) Iowa's highway funds come
26.0 per cent from property taxes,
63.5 per cent from road use taxes,
10.5 per cent from Federal aid.

(f) Annual income under present laws, available for highway construction, is approximately

For primary roads -----	\$24,000,000
For secondary roads-----	41,967,000

(g) Iowa's highway improvements are being paid for as built. No new bonds are being issued.

(h) Unobligated available farm to market road funds are rapidly being placed under contract.

(i) The letting of highway contracts is increasing rapidly.

(j) Iowa's highway program is estimated to cost \$945,000,000 and will require twenty years to build.

These are the highlights of Iowa's highway program. The details will follow in succeeding paragraphs.

2. Mileage of Rural Roads:

Iowa has a total of 101,620 miles of rural roads. Only a very few states have a larger mileage of rural road.

3. Classification of Rural Roads:

All rural roads in Iowa are by law classified into

Primary (or State) Roads-----	8,670 Miles
Secondary (or County) Roads-----	92,950 "
Total-----	101,620 Miles

4. Jurisdiction over Rural Roads:

The primary roads are under the control and jurisdiction of the State Highway Commission. The secondary roads in each county are under the control and jurisdiction of the county board of supervisors of that county. We have no "township roads". The county is our smallest road administrative unit. The township has no administrative control over any roads.

5. Secondary Roads Subdivided:

The 92,950 miles of secondary roads in Iowa are subdivided into

Farm to Market Roads-----	34,190 Miles
Local Secondary Roads-----	58,760 Miles
Total-----	92,950 Miles

6. Condition of Rural Roads:

On January 1, 1951 the condition of the rural roads in Iowa was

a. Primary Roads

Paved-----	5,767 Miles
Bituminous Surfaced-----	875 "
Gravel or stone-----	2,002 "
Unsurfaced-----	26 "
Total-----	8,670 "

b. Secondary Roads

Farm to Market Roads,

Paved-----	27 Miles
Bituminous -----	372 "
Gravel or Stone-----	28,691 "
Unsurfaced-----	5,100 "
Total-----	<u>34,190 "</u>

Local Secondary Roads,

Paved-----	44 Miles
Bituminous-----	29 "
Gravel or stone-----	31,062 "
Unsurfaced-----	27,625 "
Total-----	<u>58,760 "</u>

All Secondary Roads,

Paved-----	71 Miles
Bituminous-----	401 "
Gravel or Stone-----	59,753 "
Unsurfaced-----	32,725 "
Total-----	<u>92,950 "</u>

c. Summary of Condition of All Rural Roads
January 1, 1951

Paved-----	5,838 Miles
Bituminous (blacktop)-----	1,276 "
Gravel or stone-----	61,755 "
Unsurfaced-----	32,754 "
Total-----	<u>101,620 "</u>

7. Iowa's Highway Program:

Iowa's highway program, as set forth on pages 54-55 of the report of November 15, 1948 by the Highway Investigation Committee created by the 52nd General Assembly, is as follows:

"A. Primary Roads

(1) Complete initial construction of the Primary road system, including its extensions within municipalities. This involves the construction of a dustless surface on all roads not now so improved, together with such grading and bridge and culvert work as is incidental thereto.

(2) Widen or reconstruct entirely, as conditions may require, all existing pavements, bridges, culverts, and earth shoulders where such facilities do not now serve today's traffic satisfactorily.

(3) Resurface pavements, as the need develops,

for protecting original investments and providing satisfactory service to traffic.

It will be noted that the statement of objectives for the Primary road program makes no mention of any multiple lane highways, with access limited to occasional pre-determined locations. There are only a relatively few miles of rural highways in Iowa that serve enough traffic to justify the construction of more than a good two lane highway. The planning and financing of an extensive mileage of multiple lane highways must await the development of an actual need for such facilities.

B. Secondary Roads

(1) Extend all-weather road service to every reasonably located rural home.

(2) Surface all roads that are necessarily used as school bus and rural mail routes.

(3) Reconstruct existing surfaced roads where grades or alignments are such that satisfactory service cannot be given at reasonable maintenance costs.

(4) Conserve surfacing materials, reduce traffic hazards, and improve highway service by constructing dust-free surfaces on the most heavily traveled sections of the secondary road system."

This highway program was accepted by the 53rd General Assembly. With relatively few modifications, all but one of the bills recommended by the Highway Investigation Committee to implement this program, have been passed by the 53rd and 54th General Assemblies.

8. Estimated Cost of Highway Improvement Program:

The estimated cost of this highway improvement program as reported by the Highway Investigation Committee in 1948, was

On Primary Roads-----	\$482,000,000
On Secondary Roads-----	463,000,000
Total-----	<u>\$945,000,000</u>

The Highway Investigation Committee in 1948 estimated that a period of twenty years should be allowed

for the construction of this highway program and shaped its recommendations so as to provide,

- a. Enough funds per year to maintain both the primary roads and the secondary roads, and
- b. Enough funds per year to pay for the above estimated construction program in a period of twenty years.

9. Sources of Highway Funds:

There are two general state and local sources of revenue for highway construction and maintenance in Iowa,

- a. Property Taxes,
- b. Road Use Taxes.

The highway funds derived from property taxes are expended only on secondary roads. Road use tax funds are expended in part on primary roads and in part on secondary roads.

The laws authorize the county board of supervisors of each county to levy certain millage taxes on the property in the county. It is within the discretion of the county board as to how much of the authorized millage is actually levied in any year.

The road use tax fund consists of and includes the net proceeds of

- a. Motor vehicle registration fees,
- b. Motor vehicle fuel (gasoline) tax,
- c. Motor vehicle carrier tax,
- d. Use tax on new motor vehicles and trailers,
- e. Ten per cent of the 2.0% sales tax

10. Highway Income Per Year From State and Local Sources.

The income per year from state and local sources for primary and secondary roads under present laws is approximately as follows:

- a. From property taxes for calendar year ending December 31, 1951-----\$26,656,000
- b. From road use tax fund for fiscal year ended June 30, 1951-----\$65,059,000
- c. Total from state and local sources-----\$91,715,000

11. Income in Road Uxe Tax Fund:

The income in the road use tax fund during fiscal year July 1, 1950 to June 30, 1951, as certified to us by the Treasurer of State, was as follows:

Motor Vehicle Fuel Tax-----	\$28,551,139.33
Motor Vehicle Registration Fees-----	29,975,463.50
Sales Tax (10%)-----	5,199,061.29
Use Tax on Motor Vehicles and Trailers-----	6,388,932.44
Motor Carrier Tax-----	601,140.97
Miscellaneous-----	374.00
Total-----	<u>\$70,716,111.53</u>

12. Allocation of Road Uxe Tax Fund to Various Road Funds:

The income in the road use tax fund during the year July 1, 1950 to June 30, 1951 was, by law allocated to the various road funds as follows:

Primary Road Fund-----	42.0%	\$29,700,766.84
Secondary Roads (Counties)---	35.0%	24,750,638.93
Farm to Market Road Fund-----	15.0%	10,607,416.83
Cities and Towns-----	8.0%	5,657,288.93
Total-----		<u>\$70,716,111.53</u>

13. Federal Aid Funds for Highways:

For the present fiscal year Federal aid road funds have been allotted to the state of Iowa under the Federal Aid Highway Act of 1950 in the following amounts:

For primary roads-----	\$ 6,846,806
For secondary roads-----	3,947,519
Total-----	<u>\$10,794,325</u>

14. Total Highway Income Per Year.

From the above data the total income per year for primary and secondary roads is determined as follows:

From property taxes-----	\$ 26,656,000
From road use taxes-----	65,059,000
From Federal aid-----	10,794,000
Total per year-----	<u>\$102,509,000</u>

15. Division of Funds Among Road Systems

This total income is divided between primary roads and secondary roads:

a. Primary Roads for both construction and maintenance

Road Use Tax-----	\$29,701,000
Federal Aid-----	6,847,000
Total to primary roads-----	<u>\$36,548,000</u>

b. Secondary Roads for Construction

On Farm to Market Roads

Road Use Tax-----	\$10,607,000
Federal Aid-----	3,947,000
	<u>\$14,554,000</u>

On All Secondary Roads

Property Tax-----	\$2,662,000
Road Use Tax-----	24,751,000
	<u>\$27,413,000</u>

Maintenance on All Secondary Roads

Property Tax-----	<u>23,994,000</u>
-------------------	-------------------

c. Total for all Rural Roads----- \$102,509,000

16. Amount of Highway Construction Contracts Let Since World War II.

The amounts of highway construction contracts let by or under the State Highway Commission each year since the close of World War II are as follows:

<u>Fiscal Year or Part of Year</u>	<u>Primary Roads</u>	<u>Farm to Market Roads</u>	<u>Total</u>
1-30-45 to 6-30-46	\$ 8,638,518.10	\$ 2,327,213.10	\$ 10,965,731.20
7-1-46 to 6-30-47	8,433,920.51	4,817,434.08	13,251,354.59
7-1-47 to 6-30-48	12,759,517.18	5,969,005.86	18,728,523.04
7-1-48 to 6-30-49	11,548,334.95	11,272,021.18	22,820,356.13
7-1-49 to 6-30-50	16,041,925.55	15,610,946.68	31,652,872.23
7-1-50 to 6-30-51	28,085,175.89	20,912,134.10	48,997,309.99
7-1-51 to 9-30-51	<u>9,021,541.22</u>	<u>6,554,932.87</u>	<u>15,576,474.09</u>
Totals -	\$94,528,933.40	\$67,463,687.87	\$161,992,621.27

Note the steady increase from year to year in the amount of highway contracts let.

17. Increase in Mileage of Surfaced Secondary Roads:

On January 1, 1948 the mileage of surfaced secondary road was

On farm to market roads-----	25,466 Miles
On local secondary roads-----	26,730 "
Total-----	<u>52,196 Miles</u>

On January 1, 1951 the mileage of surfaced secondary road was

On farm to market roads-----	29,090 Miles
On local secondary roads-----	31,135 "
Total-----	<u>60,225 Miles</u>

Thus the total mileage of surfaced secondary roads increased 8,029 miles from January 1, 1948 to January 1, 1951, or an average increase of 2,676 miles per year. It is believed that in the present calendar year (January 1, to December 31, 1951) the mileage of surfaced secondary road will increase at least 2,200 miles.

In addition to this increase in the total mileage of surfaced secondary roads, a very considerable mileage of old, worn-out, surfaced secondary road has been reconstructed, regraded, rebridged, and resurfaced.

18. No Bonds Being Issued:

Iowa's highway work, both State and County, is now wholly on the "pay-as-you-go" plan. The primary road bonds issued during the period 1919 to 1938 have all been paid off. No new primary road bonds are being issued. County road bonds previously issued have nearly all been paid off. No new county road bonds are being issued except in emergency cases.

19. Unobligated Available Farm to Market Road Funds:

During the war, highway construction work was shut down by Government order. Any highway income for construction work accumulated. It could not be spent. On July 1, 1945, when the war was about over, the balance in the farm to market road fund was \$5,730,291. There were no outstanding contracts.

The farm to market road fund income each year since the war has been as follows:

During Fiscal Year Ended June 30	From State Sources	Federal Funds Allotted	Total Income
1945	\$ 855,429	\$ 3,979,710	\$ 4,835,139
1946	2,245,665	3,971,103	6,216,768
1947	5,292,651	3,870,336	9,162,987
1948	9,319,638	-	9,319,638
1949	12,211,889	3,516,275	15,728,164
1950	8,863,594	3,513,955	12,377,549
1951	10,660,404	3,947,519	14,607,923

(Chart No. 1, Page 19)

Due to shortages of labor, equipment, and materials in the early postwar years, the contracts let each year for farm to market road construction were less than the farm to market road fund income in that year. As a result the unobligated available farm to market road funds increased from year to year reaching a peak of \$23,560,797 on July 1, 1949. In the

fiscal year ended June 30, 1950, the farm to market road contracts let (\$15,610,946) exceeded the farm to market road fund income (\$12,377,549) by more than three million dollars. In the fiscal year ended June 30, 1951, the farm to market road contracts let (\$20,912,000) exceeded the farm to market road fund income (\$14,555,000) by more than six million dollars.

The term "unobligated available farm to market road funds" includes and means (a) the cash balance in the farm to market road fund in the hands of the State, plus (b) the Federal Aid Secondary road funds allotted to the State of Iowa but not yet collected by the State from the Federal Government, and minus (c) the outstanding farm to market road contracts.

On June 30, 1951, the unobligated available farm to market road funds were as follows:

(a)	Cash balance in the hands of the State	-----	\$16,384,079.70
(b)	Contracts outstanding	-----	13,836,370.21
(c)	Cash balance June 30, 1951 unobligated	-----	2,547,709.49
(d)	Federal secondary road aid allotted to Iowa but not collected	-----	8,883,369.00
(e)	Unobligated available farm to market road funds on June 30, 1951	-----	11,431,078.49

These Federal funds are not available "cash". They are not a "balance". These Federal funds are a credit which the State may collect from the Federal Government when and as the several federal aid secondary road projects by which these federal secondary road funds are obligated, are completed, accepted, paid for by the State, and claims filed by the State against the Federal Government for the Government's prorata share of the cost of such projects.

In like manner the unobligated available farm to market

road funds on July 1 of each postwar year were

July 1, 1945	\$5,730,291
July 1, 1946	13,184,856
July 1, 1947	17,554,785
July 1, 1948	18,039,540
July 1, 1949	23,560,797
July 1, 1950	19,579,408
July 1, 1951	11,431,078

The unobligated available farm to market road funds have been reduced from \$23,560,797 on July 1, 1949 to \$11,431,078 on July 1, 1951. That is a total reduction of \$12,129,719 in the past two years.

(Chart No. 2, Page 20)

If the needs of the Korean war and of the national defense do not slow down the letting of farm to market road contracts, the unobligated available farm to market road funds on July 1, 1952 will be down to about the level of July 1, 1945 (\$5,730,000).

20. Unobligated Available Primary Road Funds:

The primary road fund income each year since World War II has been as follows:

During Fiscal Year Ended June 30	From State Sources	Federal Funds Allotted	Total Primary Road Fund Income
1945	\$17,000,000	\$ 7,159,367	\$ 24,159,367
1946	17,000,000	7,146,424	24,146,424
1947	17,000,000	7,056,421	24,056,421
1948	17,000,000	-	17,000,000
1949	17,000,000	6,331,438	23,331,438
1950	27,416,985	6,327,962	33,744,947
1951	29,700,767	6,846,806	36,547,573

(Chart No. 3, Page 21)

The term "unobligated available primary road funds" includes and means (a) the cash balance in the primary road funds in the hands of the State, plus (b) the Federal Aid Primary and Urban Road Funds allotted to the State of Iowa but not yet collected by the State from the Federal Government, and minus (c) the outstanding Primary and Urban road contracts.

On June 30, 1951, the unobligated available primary road funds were as follows:

(a)	Cash balance in the hands of the State	---\$19,142,000
(b)	Contracts outstanding	----- 24,883,000
(c)	Cash balance June 30, 1951 overobligated	---\$ 5,742,000
(d)	Federal primary and urban road aid allotted to Iowa but not collected	----- 13,680,000
(e)	Unobligated available primary road funds on June 30, 1951	-----\$ 7,938,000

These federal funds are not available "cash". They are not a "balance". These Federal funds are a credit which the State may collect from the Federal Government when and as the several Federal aid primary and urban road projects by which these Federal aid road funds are obligated, are completed, accepted, and paid for by the State, and claims filed by the State against the Federal Government for the Government's prorata share of the cost of these projects.

In like manner unobligated available primary road funds on June 30 of each postwar year were

June 30, 1945	-----	\$22,741,014
June 30, 1946	-----	23,346,121
June 30, 1947	-----	21,419,273
June 30, 1948	-----	11,071,008
June 30, 1949	-----	10,871,234
June 30, 1950	-----	12,158,715
June 30, 1951	-----	7,938,000

The unobligated available primary road funds have been reduced from \$23,346,121 on June 30, 1946 to \$7,938,000 on June 30, 1951. That is a total reduction of \$15,408,000 in the past five years.

(Chart No. 4, Page 22)

Thus the early postwar accumulation of unobligated available primary road funds has been largely obligated and used up.

21. Outstanding Highway Contracts Exceed Available Cash:

The statement has been made that "the highway income under laws passed by the 53d General Assembly is piling up"; that "the highway income is not being used up". Such statements are untrue as evidenced by the following:

a. Primary Road Funds

Primary road fund contracts outstanding October 31, 1951-----	\$25,471,000
Cash balance in primary road fund October 31, 1951-----	<u>11,129,000</u>
Excess of contracts over cash-----	\$14,342,000

b. Farm to Market Road Funds

Farm to market road fund contracts outstanding October 31, 1951-----	\$13,912,000
Cash balance in farm to market road fund October 31, 1951-----	<u>12,137,000</u>
Excess of contracts over cash-----	\$1,775,000

22. Cost of Maintaining Primary and Secondary Roads:

Maintenance is one of the principal items of expense incident to a modern highway system.

Primary Roads.

Maintenance of the primary road system and extensions of the primary roads in cities and towns cost

In fiscal year 1949-----	\$6,903,671
In fiscal year 1950-----	7,413,088
In fiscal year 1951-----	8,090,728

The 1951 primary road maintenance was at the average rate of \$831 per mile for the 9,734 miles of primary roads and their municipal extensions maintained.

Secondary Roads

Maintenance of the secondary road system cost

In calendar year 1948-----	\$23,464,710
In calendar year 1949-----	24,290,752
In calendar year 1950-----	29,115,601

The 1950 secondary road maintenance was at the average rate of \$313 per mile for the 92,950 miles of secondary road. About 16,000 miles of secondary road carry less than ten vehicles per day. An additional 29,000 miles of secondary road carry ten to twenty-four vehicles per day. The maintenance work done on these 45,000 miles of light traffic secondary roads is quite light. Since the remaining 47,950 miles of secondary roads carry the bulk of the secondary road traffic, the bulk of the secondary road maintenance is done on these roads.

23. Hot-Mix Asphalt Concrete Resurfacing of Old Concrete Pavements:

The 1951 spring breakup was the most severe since modern road building in this state was started, nearly forty years ago. About 600 miles of old concrete pavement, weakened by age and the pounding of traffic, was so badly damaged during this spring breakup that there was grave danger

of their becoming impassable if prompt action were not taken to relieve their distress. The average age of these old pavements was 23.5 years. For the most part these old pavements were on the heaviest traffic roads - U. S. Road No. 6, U. S. Road No. 30, U. S. Road No. 69, etc. These battered old pavements presented a rough and very unsatisfactory riding surface.

The complete reconstruction, resurfacing, widening, and modernizing of these 600 miles of battered old pavements was out of the question. That kind of a reconstruction job would have cost an average of about \$72,000 per mile, or a total of \$43,200,000 for the 600 miles. That sum of money was simply not available for this emergency job. Even if the funds had been available, the engineers necessary to survey, plan, and construct that volume of reconstruction, widening, and modernizing work were not available and could not be procured. Even if the necessary money and engineers had been available, there was no possibility of now procuring the steel required for such an extensive remodeling program. In fact, only about one-half of the steel required is obtainable for the construction and reconstruction program now being carried on. If there had been enough funds available, if there had been enough engineers available, if there had been enough steel available, there still were not enough contractors available to reconstruct, widen, resurface, and modernize these 600 miles of battered old pavements in 1951 and 1952. The available concrete paving contractors were already loaded to their capacity with paving contracts.

In these circumstances it was decided to resurface these 600 miles of battered old pavements with hot-mix asphalt concrete three inches thick but without widening, reconstructing or modernizing these roads or the bridges thereon. Some of these old pavements are 20 feet wide. A very large portion of the mileage is 18 feet wide.

From May through October 1951, contracts have been let for 606 miles of this hot-mix asphalt concrete resurfacing of old pavement. The total amount of these contracts was \$9,098,928. The average amount per mile of road for the work included in these contracts, is

Patching old concrete pavement-----	\$1,218
Hot-Mix Asphalt Concrete	
Resurfacing-----	13,797
Total per mile-----	\$15,015

To date about 147 miles of this resurfacing work has been completed. The remainder of the 606 miles will be completed in 1952.

By this relatively cheap method of resurfacing these old pavements, traffic is provided with a smooth, satisfactory, travel surface. Due to this smooth traffic ^{surface} service, the impact or pounding effect of traffic is reduced. The destructive effect on the pavement due to the pounding of traffic, is minimized. The old pavement is strengthened by the addition of a three-inch layer of asphaltic concrete. These old pavements may thus be kept in service and in travelable condition for a few years, until financial, economic, and physical conditions permit the complete reconstruction, widening, and modernizing of these roads.

It is, of course, intended that as soon as financial and other conditions will permit, these resurfaced roads will be reconstructed, widened, and modernized, or new and better routes will be built on new locations which have better alignment, better grades, better sight distances, and decreased total length. In fact, steps to that effect have already been taken with respect to some of these roads which are now being resurfaced with hot-mix asphaltic concrete.

When the complete reconstruction, widening, and modernizing of these old pavements is undertaken, if the reconstructed road follows the same grade and alignment as the present road, the asphalt concrete resurfacing layer which is now being added, will be incorporated in and form an integral part of the reconstructed and modernized road. Studies indicate that about 80 per cent of the asphaltic concrete resurfacing now being placed will thus become a part of the reconstructed and modernized road.

Thus the hot-mix asphaltic concrete resurfacing now being placed on these old concrete pavements, is in fact the first stage of the reconstruction and modernizing of these roads.

24. Conclusion:

On January 1, 1951 Iowa had 68,869 miles of surfaced roads outside of cities and towns. About 2200 more miles of road are being surfaced this year. Under the impetus of the highway legislation by the 53d and 54th General Assemblies this mileage of surfaced roads will be rapidly increased over the next few years, and many miles of

battered old roads, now shown as surfaced, will be reconstructed and brought up to present standards.

Of course the demand for improved highways far exceeds the rate at which highway improvements can be built and paid for. Everybody wants his road built first. It is difficult to do that. A bit of patience is an essential item. If after a few years experience under the new laws, it is demonstrated that highway improvements are not being made with reasonable rapidity to meet our reasonable needs, and if at that time the people are willing to dig up more funds with which to pay for more roads in less time, the legislature will undoubtedly respond to such demand.

Let us so conduct our highway affairs that we need not again resort to the issuance of bonds to pay for needed highway improvements.







