

THE OAKLAND COUNTY ROAD COMMISSION

- **Finances**
- **Organization**
- **Management**

CITIZENS RESEARCH COUNCIL OF MICHIGAN

**1526 David Stott Building
Detroit, Michigan 48226
Report No. 247**

**834 Michigan National Tower
Lansing, Michigan 48933
September, 1974**

CITIZENS RESEARCH COUNCIL OF MICHIGAN

Detroit-Lansing

Robert E. Pickup
Execittive Director

LETTER OF TRANSMITTAL

1526 David Stott Building
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OCTOBER, 1974

The Honorable
Board of Road Commissioners
Oakland County, Michigan

Gentlemen

Pursuant to your request the Research Council has undertaken a comprehensive study of the organization and operations of the Oakland County Road Commission. The attached report presents our findings and recommendations. The Research Council did not undertake a separate study of the purchasing operations of the road commission since the board had contracted with Arthur Young and Company for a management study of that activity. We have reviewed the Arthur Young and Company report on purchasing and concur with their recommendations.

In your letter requesting the Research Council to undertake this study you stated, "Our purpose is to identify and implement such changes in organization and procedures as may be deemed necessary for maximum utilization of the Commission's resources now and in the future in the performance of the Commission's statutory functions." During the course of this study a number of problem areas were identified and solutions proposed to the board of road commissioners and staff of the commission. The board and staff have been responsive to proposed changes and a number of improvements have already been implemented.

As you already know and as the study documents, Oakland County is faced with a tremendous challenge in improving its road system. While the study proposes a number of changes in administrative organization and procedures that will improve operations and provide for more effective utilization of resources, implementation of the proposed administrative changes will not in and of itself solve the county's road problems. The existing inadequacies of the county road system are the result of a number of historical factors including the unparalleled growth of population in the "rural" unincorporated areas of the county, inadequate funds from state aid and local sources to finance needed road improvements and the failure of previous boards of road commissioners to adopt and enforce adequate policies in such areas as subdivision street standards and right-of-way acquisition.

Changes in the distribution formula for state-collected gas and weight taxes

The Honorable
Board of Road Commissioners
Oakland County, Michigan
October, 1974-2

and the increased financial participation by the county government and by local governmental units have been beneficial. Progress has also been made by the board of road commissioners in recent years in adopting and enforcing policies that establish more adequate standards for road improvements. But neither the increases in available funds nor the new policies establishing more stringent standards are retroactive in their impact and the county is confronted with a tremendous backlog of inadequate streets and roads.

The Research Council recommends for consideration by the board a three-pronged approach to meeting the challenge which confronts you:

1. Implement the proposed changes in-administrative organization and procedures to insure that you are making optimum use of present resources;
2. Develop and adopt formal board policies covering all major phases of board operations and delegate to the staff the responsibility for implementing those policies; and,
3. Develop a comprehensive ten-year program of road improvements to meet the most critical needs and submit the proposed program to the board of county commissioners, the local units of government and the public for their consideration and action.

We wish to express our appreciation for the complete cooperation extended by the board of road commissioners and the members of the road commission staff. We will be pleased to provide such additional information or assistance as may be required.

Sincerely

/S/ Robert E. Pickup

Executive Director

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CHAPTER I

AN ANALYSIS OF ROAD COMMISSION FINANCES

This analysis of the Oakland County road commission's finances is based primarily on a review of the Annual Progress Reports published by the Michigan department of state highways and transportation. In accordance with Act 51, Public Acts of 1951, as amended, each county road commission is required to submit an annual report to the state summarizing receipts and expenditures, construction work completed, and the mileage and condition of county roads. This information is then compiled by the local government division of the department of state highways and transportation and published in the Annual Progress Report. Unfortunately, changes in reporting requirements from year to year and differences in reporting practices among counties sometimes limit the comparability of data contained in the Annual Progress Report. Though this analysis, of necessity, relies on the Annual Progress Report as a primary source of data, an effort has been made to indicate those instances where the data is not strictly comparable.

The Oakland County treasurer maintains three funds for the road commission: the general road fund, the special assessments fund, and the escrow fund. Except for construction projects financed by special assessment to the benefiting property owners and security deposits from contractors which are placed in the escrow fund, all financial activities of the road commission are accounted for in the general road fund. However, in accordance with Act 51, the accounting records of the road commission separate revenues and expenditures pertaining to the county primary road system from those pertaining to the local road system. A summary of receipts and expenditures for all funds since 1964 is shown in Table 1.

Revenues

Total revenue receipts of the Oakland County road commission more than tripled during the past decade rising from \$5.9 million in 1964 to \$20.3 million in 1973. This represents an average annual increase of 15.2 percent. As shown in Table 1, the road commission receives revenue from three principal sources: state aid from the motor vehicle highway fund; federal aid; and, county raised revenue, including contributions from cities, townships, and special assessment districts and appropriations from the county board of commissioners. Under Michigan law, county road commissions do not have the power to levy taxes.

Motor Vehicle Highway Fund

The motor vehicle highway fund is by far the most important revenue source for county road commissions in Michigan. In 1973, motor vehicle highway funds constituted 68.5 percent of Oakland County's revenue and, based on 1972 data, this source accounted for 77.8 percent of the total revenue received by all road commissions in the state. As provided in Act 51, collections from the tax on gasoline, diesel fuel, and liquid petroleum gas, the motor vehicle weight tax, and several miscellaneous highway user taxes are earmarked to the motor vehicle highway fund. After deducting for collection costs and several special programs provided by law, the remaining monies are distributed to the department of state highways and transportation (44.5 percent), the county road commissions (35.7 percent), and cities and villages (19.8 percent). Table 2 indicates the actual (or estimated) distribution of motor vehicle funds since 1970.

Table 1
Receipts and Expenditures - Oakland County Road Commission

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
RECEIPTS										
MOTOR VEHICLE HIGHWAY FUND										
—Engineering	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 8,333
—Primary Road System	4,098,789	4,398,812	4,706,226	4,964,751	5,750,198	7,044,352	7,648,866	7,987,314	8,689,532	9,609,876
—Local Road System	940,849	1,001,863	1,062,427	1,097,961	1,215,724	1,413,916	1,505,341	2,174,602	2,034,515	2,266,572
—Urban Primary Roads	—	—	—	—	—	—	—	—	—	1,407,058
—Urban Local Roads	—	—	—	—	—	—	—	—	—	583,876
Subtotal Motor Vehicle	—	—	—	—	—	—	—	—	—	—
— Highway Fund	\$ 5,044,638	\$ 5,405,675	\$ 5,773,653	\$ 6,067,712	\$ 6,970,922	\$ 8,463,268	\$ 9,159,207	\$ 10,166,916	\$ 10,729,047	\$ 13,875,714
FEDERAL AID										
COUNTY RAISED REVENUES	\$ 257,044	\$ 9,590	\$ 9,248	—	—	—	—	\$ 1,335,283	\$ 996,720	\$ 2,285,936
MISCELLANEOUS RECEIPTS	466,348	626,356	627,954	767,568	812,776	1,309,016	2,248,795	3,052,304	2,701,379	3,603,783
BORROWINGS	162,387	77,883	35,908	23,285	66,984	193,462	181,475	220,730	308,932	489,015
	—	—	—	—	5,000,000	—	1,500,000	2,000,000	700,000	2,040,000
— TOTAL RECEIPTS	\$ 59,301,417	\$ 6,119,504	\$ 6,446,763	\$ 6,858,583	\$ 12,850,682	\$ 9,965,746	\$ 13,089,477	\$ 16,775,233	\$ 15,436,078	\$ 22,294,448
EXPENDITURES										
PRIMARY ROAD SYSTEM										
—Adm., Eng. & Acctg.	\$ 259,972	\$ 330,873	\$ 411,985	\$ 475,768	\$ 587,260	\$ 757,708	\$ 1,049,842	\$ 1,204,414	\$ 227,225	\$ 407,397
—Construction	3,081,472	2,173,606	1,421,482	1,278,384	2,953,637	2,671,672	1,822,713	4,732,763	3,716,478	7,339,679
—Maintenance	1,719,883	2,057,865	2,313,202	2,415,243	2,775,492	3,116,761	3,326,063	3,525,814	3,972,544	3,801,426
—Roadside Parks	—	1,582	1,730	1,536	2,958	1,199	—	2,065	—	—
Subtotal Primary Road	—	—	—	—	—	—	—	—	—	—
Expenditures	\$ 5,061,327	\$ 4,563,926	\$ 4,148,399	\$ 4,170,931	\$ 6,319,347	\$ 6,547,340	\$ 6,108,618	\$ 9,465,052	\$ 7,916,247	\$ 11,548,502
LOCAL ROAD SYSTEM										
—Adm., Eng. & Acctg.	\$ 95,132	\$ 120,117	\$ 138,049	\$ 169,711	\$ 192,780	\$ 232,690	\$ 346,136	\$ 327,860	\$ 149,598	\$ 322,321
—Construction	942,984	832,327	926,910	924,029	1,204,308	1,590,401	2,554,780	2,244,055	2,891,262	5,344,650
—Maintenance	1,119,044	1,222,764	1,195,602	1,432,369	1,598,903	1,582,230	1,693,594	1,798,645	2,271,785	3,469,887
—Roadside Parks	—	—	—	—	—	—	—	—	—	—
Subtotal Local Road	—	—	—	—	—	—	—	—	—	—
Expenditures	\$ 2,157,160	\$ 2,175,208	\$ 2,260,561	\$ 2,526,109	\$ 2,995,991	\$ 3,405,321	\$ 4,594,510	\$ 4,370,560	\$ 5,312,645	\$ 9,136,858
CAPITAL OUTLAY										
DEBT SERVICE	\$ 242,627	\$ 37,554	\$ 149,173	\$ 369,529	\$ 131,777	\$ 56,045	\$ 97,937	(\$ 49,235)	\$ 146,481	\$ 305,985
	490,700	487,488	490,888	493,988	610,166	1,643,156	1,157,868	1,459,965	1535456	430137
— TOTAL EXPENDITURES	\$ 7,951,814	\$ 7,264,176	\$ 7,049,021	\$ 560,577	\$ 10,057,281	\$ 11,651,862	\$ 11,958,933	\$ 15,246,342	\$ 14,910,829	\$ 21,421,482
EXCESS OF RECEIPTS OVER (UNDER) EXPENDITURES										
	(\$ 2,021,397)	(\$1,144,672)	(\$ 602,258)	(\$ 701,994)	\$ 2,793,401	(\$ 1,686,116)	\$ 1,130,544	\$ 1,528,891	\$ 525,249	\$ 872,966

Source: Annual Progress Report, various years. 1973 Annual Financial Report as submitted to the state by the Oakland County Road.

Table 2
Distribution of Motor Vehicle Highway Fund Monies, 1970-1973
 (Amounts are in millions of dollars)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Gasoline, Diesel Fuel & LP gas Tax Collections	\$274.1	\$283.4	\$302.3	\$373.6
Weight Tax Collections	122.7	127.3	135.4	144.0
Misc. Revenue	7.3	7.8	9.9	13.3
TOTAL GROSS RECEIPTS	\$404.1	\$418.5	\$447.6	\$530.9
<u>LESS</u> Deductions for Collection Costs & Special Programs	18.7	20.7	22.5	38.7
NET AMOUNT AVAILABLE FOR DISTRIBUTION	\$385.4	\$397.8	\$425.1	\$492.2
—State Trunkline Share	177.3	183.0	195.6	221.9
—City & Village Share	77.1	79.6	85.0	97.9
—County Road Com- mission Share	131.1	135.2	144.5	172.4
OAKLAND COUNTY ROAD COMMISSION SHARE	\$ 9.2	\$ 10.2	\$ 10.7	\$ 13.9

Source: Annual Report Motor Vehicle Highway Fund, various years.

As shown in Table 2, motor vehicle highway fund collections increased sharply after the gasoline tax was increased from seven cents to nine cents per gallon, effective March 1, 1973. As part of the legislative package increasing the gasoline tax, the formula for distributing motor vehicle highway fund monies was also changed, effective March 1, 1973. Under the new formula, the county road commissions' share of the fund was increased from 34 percent to 35.7 percent. The allocation to the state highways and transportation department was reduced from 46 percent to 44.5 percent and the allocation to cities and villages was reduced from 20 percent to 19.8 percent.

The new formula also changed the distribution of funds among the 83 county road commissions. Of particular importance to Oakland County, the new formula provides that ten percent of the money allocated to road commissions be distributed on the basis of urban primary and local road mileage. In 1974 (the first full year under the new formula), it is estimated that Oakland County will receive \$3.0 million from the urban road mileage portion of the formula.

After deducting for the urban road mileage grant, a small grant to counties with excessive snowfall, and a \$10,000 payment to all counties employing a professional engineer, the remaining funds (approximately 89 percent) are divided with three-quarters restricted for use on the primary road system and one-quarter earmarked for use on the local road system. Primary road funds are distributed to counties on the basis of three factors: 75 percent is prorated on the basis of weight tax collections in the county, ten percent is distributed on the basis of primary road mileage, and 15 percent is divided equally among all 83 counties. Local road funds are distributed on the basis of two factors: 65 percent is prorated on the basis of local road mileage and 35 percent is distributed on the basis of rural population, which is defined by Act 51 as the population of the county living outside of incorporated cities and villages.

Though the new formula for distributing motor vehicle highway funds has increased Oakland County's share of the total amount allocated to counties, it appears that Oakland County residents are still paying proportionately more in gas and weight taxes than the road commission receives from the fund. Based on 1970-71 data, it is estimated that Oakland County residents pay 10.4 percent of the gas and weight taxes collected in the state. In contrast, the Oakland County road commission only receives about 8.3 percent of the monies allocated to all county road commissions. Under the old formula, Oakland County received 7.4 percent of the funds earmarked for road commissions.

Federal Aid

In recent years, federal aid has become an increasingly important source of financing county road construction, especially in urban areas. During the past three years (1971 through 1973), federal aid has accounted for an average of 9.3 percent of Oakland County road commission total revenue. On a statewide basis, federal aid accounted for 6.2 percent of the revenue received by all road commissions in 1972. Beginning in 1974, Oakland County will receive almost all of its federal aid monies from two programs: the federal aid-urban program which provides funds for improvements to the road network in the urbanized part of the county and the federal aid-secondary program which provides funds for road improvements in rural areas. Both programs are financed by an appropriation from the federal highway trust fund.

Federal Aid—Urban. The Federal Aid Highway Act of 1973 established a new program for the improvement of roads in urban areas. The urban program replaces the Urban Area Traffic Operations Improvement Program (TOPICS) which was created in 1968 to improve traffic flow and increase safety in urban areas. Michigan's annual apportionment of urban funds is \$31.3 million for fiscal 1974 and \$32.1 million for fiscal 1975 and 1976. These monies will be distributed on the basis of urban population to all urbanized areas as defined in the census and to all incorporated places with a population in excess of 5,000. Federal participation on urban system projects is 72.64 percent of the total project cost.

Oakland County's annual share of federal aid-urban funds is estimated at \$3.9 million for fiscal 1974, and \$4.0 million for fiscal 1975 and 1976. These monies will be available for projects on state trunklines, county primary roads, and city and village streets in the urbanized part of the county. Project priorities will be determined by a task force comprised of representatives of the state highways and transportation department, the county road commission, and cities and villages in the urban areas. Under the TOPICS program, Oakland County was able to obtain almost three times its original allocation of federal monies by aggressively seeking funds which were not being used by other urban areas in Michigan. It does not appear that as much "unused" money will be available under the urban program.

Federal Aid—Secondary. As provided by the Federal Aid Highway Act of 1973, Michigan was allocated \$11.5 million for 1973-74 under this program. Roughly one-third of the allotment is used on the state trunkline system with the remainder distributed to county road commissions according to a three-part formula in which rural population, rural land area, and rural road mileage are equally weighted. Effective July 1, 1973, federal participation was increased from 54.40 to 72.64 percent of the cost of projects financed under this program.

During the past five calendar years (1969 through 1973), federal and secondary grants to Oakland County have averaged \$267,150 per year. However, Oakland County's allocation for fiscal 1973-74 is estimated at only \$165,116. Judging from the appropriation levels authorized by the Federal Aid Highway Act of 1973, it appears that Oakland County's allotment will remain at about this level for fiscal 1975 and 1976.

County Raised Revenue

As defined in the annual report to the state, the category "county raised revenue" includes property tax revenue, appropriations from the county board of commissioners, township contributions, city and village contributions, revenue from special assessment districts and several miscellaneous local revenue items. County raised revenue accounted for 17.8 percent of Oakland County's revenue in 1973 and (based on 1972 data) for 14.5 percent of the total revenue received by all road commissions in Michigan. Table 3 shows the breakdown of county raised revenue in Oakland County by source since 1969.

Property Taxes. Though road commissions cannot levy taxes, the county board of commissioners may impose a millage for road purposes. The law sets limits for such taxation according to a county's state equalized valuation. For counties with a valuation greater than \$300 million (Oakland County is in this group), the limit is one mill out of the county's allocated millage without voter approval. Any county may levy up to five mills with voter approval, provided the millage proposal and planned distribution of revenue is approved by the county board and the legislative bodies of the cities and villages in the county. If the cities and villages fail to endorse the proposal, the extra-voted road millage can still be levied, but the revenue must be shared with the cities and villages in the county. In Oakland County, the distributional formula would allocate roughly half of the millage revenue to the road commission and half to cities and villages.

Despite the explicit statutory authorization for a road millage, only a few counties are imposing the tax. In 1972, counties raised only \$1.8 million from property taxes specifically earmarked for road purposes. This represents 1.0 percent of the total revenue received by road commissions in Michigan. A review of the 1972 annual reports for 16 southern Michigan industrial counties revealed that only one county (St. Clair) re-

ceived revenue from this source. Oakland County has never imposed a millage for roads. In 1968, Oakland County voters defeated a proposal to levy one mill for five years for road purposes.

Table 3
Analysis of County Raised Revenue, 1969-1973
Oakland County Road Commission

	<u>1969^a</u>	<u>1970^a</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Property Tax	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Appropriations from County Board	245,000	400,000	700,000	0 ^b	176,541
Township Contributions	731,731	463,356	514,277	505,070	1,400,719
City and Village Contributions	677,841	61,680	881,480	816,871	602,283 ^c
Special Assessment Districts	85,349	1,280,895	601,898	892,316	688,578
Individual and Corporate Contributions	251,845	156,682	354,649	396,889	702,868 ^c
Other	<u>95,236</u>	<u>8,915</u>	<u>0</u>	<u>90,233</u>	<u>32,496^c</u>
TOTAL	\$2,087,002	\$2,371,530	\$3,052,304	\$2,701,379	\$3,603,485

^a Totals for county raised revenue in 1969 and 1970 were adjusted to conform with current reporting practice and, therefore, do not agree with the totals shown in the Annual Progress Report.

^b In 1972, the county board of commissioners loaned the road commission \$700,000.

^c These totals were adjusted to conform with earlier reporting practices.

Source: Annual Progress Report, 1969-72. 1973 Annual Financial Report as submitted to the state by the Oakland County road commission.

County Appropriations. County road commissions in Michigan have traditionally maintained a large measure of financial independence from the county. A review of 1972 annual financial reports from 16 other southern Michigan industrial counties reveals that only three counties (Bay, Monroe and Ottawa) received an appropriation from the county board of commissioners. On a statewide basis, county appropriations in 1972 were only \$1.8 million or 1.0 percent of the total revenue received by road commissions. In contrast, county appropriations have become an important local revenue source for the Oakland County road commission. In 1973, the county appropriated \$500,000 for the road commission's gravel program to improve local roads (\$176,541 was actually received). The 1974 budget anticipates a \$1,000,000 appropriation from the county—\$500,000 for the gravel program and \$500,000 for resurfacing paved roads in the urban areas of the county.

Township Contributions. As provided in Act 51, motor vehicle highway fund monies cannot be spent on local road construction unless matched by funds from other sources. For this reason, townships are usually required to contribute at least half of the cost of improvements to local roads. Some townships also contribute funds to pay for a higher level of maintenance service on their local road system. Townships can appropriate general operating funds to the road commission or, as provided in Act 51, may levy up to three mills for road purposes. However, if the road millage exceeds the 15 mill constitutional limit, the levy must be approved by the voters. At the present time, only three townships in Oakland County (Bloomfield, Commerce and Highland) levy a special millage for local road improvements and maintenance.

Township contributions in Oakland County rose sharply in 1973 increasing from \$0.5 million in 1972 to \$1.4 million. This is largely a result of the gravel program under which the road commission, the county board of commissioners and participating townships shared the cost of applying an average of three inches of gravel to deteriorated local roads in the county. In 1973, township contributions constituted 6.9 percent of Oakland County's revenue. On a statewide basis, this source accounted for 7.5 percent of total road commission revenues in 1972.

Township contributions per mile of local road in Oakland County were well above the statewide average and the median for 16 southern Michigan industrial counties, as shown in Table 4. Contributions by Oakland County townships in 1973 were on a par with the statewide average and the 16 county median on both a per capita and an equivalent millage basis. However, Table 4 also shows the relatively low level of township participation in Oakland County which was characteristic of the period prior to 1973 on both a per capita and equivalent millage basis.

¹ The 16 southern Michigan industrial counties referred to here and elsewhere in this chapter are Bay, Berrien, Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Macomb, Monroe, Muskegon, Ottawa, Saginaw, St. Clair, Washtenaw and Wayne.

² One major exception to this is improvements to subdivision streets in the local road system which are financed in large part by special assessment to the benefiting property owners.

Table 4
Analysis of Township Contributions to County
Road Commissions in Michigan

	Statewide Avg.—All Mich. Counties (Calendar 1972)	Median—16 Counties (Calendar 1972)	<u>Oakland County</u> Avg. Annual Contribution	
			<u>1968-72</u>	<u>1973 Contribution</u>
Township Contributions Per Mile of Local Road ^a	\$ 223.02	\$262.40	\$312.06	\$776.54
Township Contributions Per Capita—Rural Population Only ^b	4.70	3.01	1.72	4.31
Township Contributions Expressed as an Equivalent Rate in mills ^c	.85 mills	.65 mills	.27 mills	.69 mills

^a Local Road mileage as of July 1, 1972, except for 1973 Oakland County data which is based on mileage as of July 1, 1973.

^b Based on 1970 census. Act 51 defines rural population as the population of all unincorporated areas in the county.

^c Based on 1972 state equalized valuation of townships in the several counties. The S.E.V. of cities has been excluded. Oakland County data for 1973 is based on the 1973 S.E.V. However, both the 1973 contribution of Farmington Township (now the city of Farmington Hills) and the S.E.V. of the township have been excluded from the analysis.

An analysis of the contributions by individual townships in Oakland County reveals wide variations in the level of participation, as shown in Table 5. During the five-year period 1968-1972, the average annual township contribution was equivalent to 0.1 mill or less in ten townships, while only one township (Highland) made a greater tax effort than the statewide average of 0.85 mill. In contrast, 1973 contributions were considerably higher in nearly every township. Only four townships contributed the equivalent of 0.1 mill or less, while seven townships contributed more than the statewide average.

City and Village Contributions. Though not required by law, cities and villages in Oakland County usually pay a portion of the cost of county primary road construction within their corporate limits. In some instances, cities and villages also contribute in order to support a higher level of maintenance on the county primary roads within their boundaries. Also, city and village contributions are sometimes reimbursements for incidental work done on city and village streets by the county road commission. The level of city and village participation has tended to be greater in Oakland County than elsewhere in the state. In 1972, city and village contributions statewide were \$3.8 million or 2.0 percent of the total revenue received by road commissions. This compares with city and village contributions in 1973 of \$0.6 million in Oakland County or 3.0 percent of total revenue.

Special Assessment Revenue. There are approximately 888 miles of subdivision streets in the unincorporated areas of Oakland County. Though legally a part of the local road system, improvements to subdivision streets are financed in large part by special assessment to the benefiting property owners. At the present time, the road commission assumes ten percent of the cost of improvements, the affected township usually contributes ten percent and the benefiting property owners pay the remaining 80-90 percent of the cost. As shown in Table 3 special assessment revenues increased dramatically after 1969. Prior to 1969, special assessment projects were initiated by townships and neither the revenues nor the expenditures were included in the road commission's annual report. Since 1969, all subdivision street improvements have been under the road commission's supervision.

Though special assessment district revenues in Oakland County have declined somewhat from their peak in 1970, revenues from this source are still much greater than elsewhere in the state. Whereas special assessment district revenues of \$688,578 constituted 3.4 percent of Oakland County's total revenue in 1973, only \$2.2 million was received from this source statewide in 1972 and it accounted for only 1.2 percent of total road commission revenues. Ten of 16 southern Michigan industrial counties reported revenue from special assessment districts in 1972, but in most cases the revenue received was relatively insignificant (i.e., less than \$100,000). It should be noted, however, that in some counties subdivision street improvements are handled by townships and, thus, are not included in the county road commission's annual financial report. Though it appears that special assessment revenues are relatively high in Oakland County, this may be because the Annual Progress Report understates the amount of subdivision street improvements in some counties.

Table 5
Analysis of Township Contributions to the

<u>Township^a</u>	<u>Oakland County Road Commission</u>				
	1973 Township Tax Rates (mills) ^b	Avg. Annual Contribution, 1968-72 (dollars) (expressed as equivalent rate in mills) ^c	1973 Contribution (dollars) (expressed as equivalent rate in mills) ^d		
Addison	2.82	\$ 1,876	.1	\$16,603	.8
Avon	2.21	40,071	.3	293,820	1.7
Bloomfield	12.03	167,265	.5	220,123	.6
Brandon	1.26	8,578	.3	58,975	2.0
Commerce	3.40	70,695	.7	75,105	.7
Groveland	2.00	5,700	.3	31,830	1.6
Highland	4.07	52,932	1.2	74,578	1.4
Holly	2.50	18,819	.6	60,301	1.8
Independence	3.02	3,534	—	27,069	.3
Lyon	1.00	12,433	.4	54,707	1.7
Milford	1.90	2,143	—	25,040	.5
Novi	1.50	48	—	0	—
Oakland	2.46	3,633	.1	29,577	.6
Orion	2.14	11,331	.2	7,526	.1
Oxford	2.84	7,373	.2	58,342	1.3
Pontiac	5.40	4,697	.1	23,581	.4
Rose	1.00	236	—	1,294	.1
Royal Oak	2.50	6,972	.3	0	—
Springfield	2.00	5,732	.2	10,413	.4
Waterford	4.50	29,755	.1	119,852	.4
West Bloomfield	5.02	67,060	.3	176,370	.8
White Lake	1.00	6,233	.1	1,662	—
County-Wide Mean All Townships		\$559,710	.27	\$1,400,619	.69

^a Contributions of Farmington Township are not shown (but are included in the totals) because the township incorporated as the city of Farmington Hills, July 1, 1973. Southfield Township was also excluded because it does not have any local road mileage and has not contributed to the road commission.

^b Includes allocated, extra-voted and debt service millage.

^c Based on 1972 state equalized valuation.

^d Based on 1973 state equalized valuation.

Credit Financing

Credit financing is an important source of funding county road improvements. Under Michigan law, future revenues from the motor vehicle highway fund can be pledged for the repayment of bond principal and interest or, with the approval of the county board of commissioners and the electorate, general obligation bonds can be issued which pledge the full faith and credit of the county and are paid by a property tax levy.

Act 51 Bonds and Act 143 Notes

Borrowings against future motor vehicle highway fund payments are authorized by Act 143, Public Acts of 1943, and Act 51, Public Acts of 1951. Act 143 permits road commissions to issue notes which may be used for road construction or the purchase of equipment. The amount of outstanding Act 143 notes cannot exceed 40 percent of the sum of motor vehicle revenues returned to a county for the five preceding calendar years. (This limit applies to notes which are payable over ten years; the maximum amount is proportionately less for notes which mature in less than ten years.) Act 51 bonds can be used for construction, but not for equipment. Though motor vehicle funds are pledged for repayment of the bonds, the statute also provides that the county board of commissioners may pledge the full faith and credit of the county as additional security in the event that motor vehicle funds are insufficient. Outstanding Act 51 bonds cannot exceed an amount which can be serviced (principal and interest) with 20 percent of the total motor vehicle funds returned to the county in the preceding fiscal year. Act 51 also provides that the total indebtedness of the road commission (Act 143 notes and Act 51 bonds) cannot exceed an amount which can be serviced with 50 percent of the amount received from the motor vehicle highway fund during the preceding fiscal year.

As of February, 1974, the outstanding indebtedness of the Oakland County road commission was \$14.4 million—\$7.2 million in Act 143 notes and \$7.2 million in Act 51 bonds. Though the county board of commissioners has authorized the road commission to borrow an additional \$4.0 million, the budget for 1974 only anticipates the proceeds from \$2.0 million of bonds. The remaining borrowing authorization will only be used in the event that 1974 motor vehicle highway fund revenues are substantially less than estimated as a result of the gasoline shortage. With debt service requirements on Act 51 bonds and Act 143 notes currently \$1.2 million (1974 budget), the road commission is substantially below the debt ceiling outlined earlier. However, since Act 51 bonds and Act 143 notes commit future motor vehicle revenues, borrowing to meet current construction needs will reduce the amount of available revenue to meet future construction and operating needs.

General Obligation Bonds

With the approval of the electorate, the county board of commissioners can issue general obligation bonds which pledge the full faith and credit of the county for debt incurred for road purposes. Principal and interest payments on general obligation bonds are paid by a property tax levy. A statute enacted in 1971 provides that the proceeds from general obligation bonds issued for road construction shall be distributed in the same manner as revenue from a road millage. Unless the cities and villages agree to a different arrangement, this means that bond monies must be shared by the road commission and cities and villages in the county as provided by a statutory formula. In Oakland County, the formula would result in bond proceeds being divided almost equally between the road commission and cities and villages.

The Michigan constitution provides that the indebtedness of a county may not exceed ten percent of the state equalized valuation of the county, but bonds which do not pledge the full faith and credit of the county are generally excluded from this limitation. As of April 1, 1974, the outstanding full faith and credit debt of Oakland County was \$310.4 million or 5.3 percent of the county's 1973 state equalized valuation. None of this general obligation debt is for road purposes.

Expenditures

Total expenditures of the Oakland County road commission more than doubled during the past decade rising from \$8.0 million in 1964 to \$21.4 million in 1973. Though expenditure levels fluctuated somewhat during the ten-year period, the overall increase represents an average annual growth in expenditures of 12.6 percent. The largest annual increase (41.3 percent) occurred in 1973 when the road commission first received additional funds from the gas tax increase and the change in the motor vehicle highway fund formula. Though budgeted expenditures are not completely comparable to the expenditure data in the annual report, it is significant to note that the 1974 budget anticipates a 35.1 percent rise in expenditures over 1973. This increase reflects the expected rise in motor vehicle highway funds in 1974, the first full year under the new tax rate and the new distribution formula.

As required by Act 51, the annual report to the state divides road commission expenditures into several broad categories: primary road expenditures; local road expenditures; and, capital outlay and debt service expenditures which are not directly attributable to either road system. In addition, primary and local road expenditures are broken down by major object of expenditure: construction; maintenance; and administrative, accounting and engineering expense.

Primary Road Expenditures

During the past ten years, expenditures on the primary road system increased 128.2 percent from \$5.1 million in 1964 to \$11.5 million in 1973. However, this increase was less than the overall rise in road commission expenditures (164.9 percent) and, as a result, the share of total funds allocated to the primary road system declined from 63.6 percent in 1964 to 54.8 percent in 1973. Based on 1972 data, Oakland County spent a slightly smaller proportion of its total funds on the primary road system than the statewide average for all road commissions (58.5 percent) or the median for 16 southern Michigan industrial counties (57.9 percent).

³ The new format of the 1973 financial report requires road commissions to relate almost all expenditures to either the primary or local road system, including debt service and capital outlay expenses.

Construction. Unlike operating expenses of a recurring nature, the size of the annual construction program varies a great deal depending on the availability of federal aid, contributions from cities and townships, and extra income from borrowings. During the ten-year period under examination, primary road construction expenditures ranged from a high of \$7.3 million in 1973 to a low of \$1.3 million in 1967. Table 6 compares average annual construction expenditures in Oakland County, 16 southern Michigan industrial counties and the statewide average.

Table 6
Analysis of Primary Road Construction-Expenditures

	<u>Average Annual Construction Expenditures, 1968-72</u>		
			Per 1,000
	<u>Per Mile of Primary Road^a</u>	<u>Per Capita^b</u>	<u>Annual Vehicle Miles of Traffic-Primary System Only^c</u>
Oakland County	\$4,113.87	\$3.41	\$1.43
Median - 16 Southern Michigan Industrial Counties	2,290.75	5.23	4.39
Statewide Average	2,257.81	6.22	4.57

^a Primary road mileage as of July 1, 1972.

^b Based on 1970 Census.

^c Estimates of annual vehicle miles of traffic were made in 1970 as part of the Highway Needs Study. I

Source: Data derived from the Annual Progress Report, various years.

When viewed in relation to primary road mileage, average annual construction expenditures in Oakland County are almost double the statewide average and the 16 county median, as shown in Table 6. In contrast, when compared to the number of people using the primary road system and the traffic volume, Oakland County's construction expenditures are relatively low. It should be noted that primary road construction expenditures rose sharply in 1973, increasing from a level of about \$3.1 million (average annual expenditure, 1968-1972) to \$7.3 million. Though partly a result of additional motor vehicle highway fund revenues, this increase may also indicate a greater emphasis on the primary road system than in the past.

Maintenance. During the past ten years, maintenance expenditures on the primary road system have more than doubled, rising from \$1.7 million in 1964 to \$3.8 million in 1973. Whereas, primary road construction expenditures fluctuated up and down during the decade, maintenance expenditures increased steadily at an average annual rate of 9.4 percent. Table 7 compares 1972 primary road maintenance expenditures in Oakland County with the statewide average and the 16 county median.

Table 7
Analysis of Primary Road Maintenance Expenditures

	<u>1972 Primary Road Maintenance Expenditures</u>		
	Per Mile of <u>Primary Road</u> ^a	Per <u>Capita</u> ^b	Per 1,000 Annual Vehicle Miles of Traffic- <u>Primary System Only</u> ^c
Oakland County	\$4,921.62	\$4.08	\$1.71
Median—16 Southern Michigan Industrial Counties	1,955.52	4.19	3.54
Statewide Average	1,854.49	5.11	3.75

^a Primary Road mileage as of July 1, 1972.

^b Based on 1970 Census.

^c Estimates of annual vehicle miles of traffic were made in 1970 as part of the Highway Needs Study.

On the average, Oakland County spends more than twice as much per mile to maintain primary roads than the statewide average for all road commissions or the median of 16 southern Michigan counties. However, primary road maintenance costs are slightly below average on a per capita basis and substantially below average in relation to traffic volume.

Local Road Expenditures

During the past ten years, expenditures on the local road system increased 323.6 percent rising from \$2.2 million in 1964 to \$9.1 million in 1973. Since local road expenditures increased at a faster rate than total expenditures, the share of total funds spent on the local roads system rose from 27.1 percent in 1964 to 43.4 percent in 1973. Based on 1972 data, Oakland County spent a somewhat larger share of its total funds on the local road system than the statewide average for all road commissions (33.7 percent) or the median for 16 southern Michigan industrial counties (39.0 percent).

Because of their greater statewide importance, the motor vehicle highway fund formula earmarks approximately three-quarters of the revenue returned to counties for primary roads and only one-quarter for local roads. However, Act 51 permits counties to transfer funds between the road systems. Under the revised formula which went into effect in 1973, up to 15 percent of the amount allotted to either road system may be transferred to the other at the discretion of the county road commission. An additional 15 percent may be transferred with the approval of the state highway department. (Prior to 1973, ten percent could be transferred at will and another ten percent with permission of the state.) During the past ten years, Oakland County has almost always transferred from the primary system to the local system the maximum amount

permitted without approval of the state. Though it is sometimes argued that these transfers indicate an overemphasis on local roads, the practice appears to be common in other counties. In 1972, ten of 16 southern Michigan industrial counties transferred funds—all from the primary system to the local system. Similarly, on a statewide basis, the net impact of all transfers between road systems in 1972 was to increase local road monies by \$6.0 million. This represents a net transfer of 5.6 percent of total primary road funds to the local system.

Construction. Local road construction expenditures increased more than five-fold during the decade (466.8 percent) rising from \$0.9 million in 1964 to \$5.3 million in 1973. Whereas primary road construction costs fluctuated, local road construction expenditures increased steadily during the ten-year period. The largest annual increase (84.9 percent) occurred in 1973 when expenditures climbed from \$2.9 million in 1972 to \$5.3 million. Table 8 compares average annual construction expenditures in Oakland County, 16 southern Michigan industrial counties, and the statewide average.

Table 8
Analysis-of Local Road Construction Expenditures

	<u>Average Annual Construction Expenditures, 1968-72</u>		
	<u>Per Mile of</u>	<u>Per</u>	<u>Per 1,000</u>
	<u>Primary Road^a</u>	<u>Capita^b</u>	<u>Annual Vehicle</u>
			<u>Miles of Traffic-</u>
			<u>Primary System Only^c</u>
Oakland County	\$1,131.79	\$6.24	\$2.39
Median—16 Southern Michigan Industrial Counties	472.05	5.11	6.82
Statewide Average	336.92	7.09	6.37

^a Local road mileage as of July 1, 1972.

^b Based on 1970 Census. Act 51 defines rural population as the population living outside of incorporated areas.

^c Estimates of annual vehicle miles of traffic were made in 1970 as part of the Highway Needs Study.

As shown in Table 8, local road construction expenditures in Oakland County appear high in relation to local road mileage, average when compared to the number of people using the local system, and low in terms of traffic volume. Though 1973 data is not available for the other counties, the sizeable increase in Oakland County's local road construction expenditures last year suggests that the county may be spending more in comparison to other counties indicated in Table 8.

Maintenance. During the past ten years, local road maintenance expenditures have more than tripled rising from \$1.1 million in 1964 to \$3.5 million in 1973. This represents an average annual rate of increase of 14.4 percent with the largest annual increases occurring in 1972 (26.3 percent) and 1973 (52.7 percent). During the decade, local road maintenance costs rose at a faster rate than primary road maintenance costs

and, as a result, maintenance expenditures on the two road systems were almost equal by 1973. Table 9 compares 1972 local road maintenance expenditures in Oakland County with the statewide average and the 16 county median.

Table 9
Analysis of Local Road Maintenance Expenditures

	1972 Local Road Maintenance Expenditures		
	Per Mile of <u>Primary Road</u> ^a	Per <u>Capita</u> ^b	Per 1,000 Annual Vehicle Miles of Traffic- <u>Primary System Only</u> ^c
Oakland County	\$1,180.64	\$ 6.51	\$ 2.49
Median—16 Southern Michigan Industrial Counties	914.01	9.77	12.96
Statewide Average	638.87	13.45	12.08

^a Local road mileage as of July 1, 1972.

^b Based on 1970 Census, Act 51 defines rural population as the population living outside of incorporated areas.

^c Estimates of annual vehicle miles of traffic were made in 1970 as part of the Highway Needs Study.

On the average, Oakland County spends substantially more to maintain a mile of local road than the statewide average, and slightly more than the 16 county median. In contrast, maintenance costs in Oakland County are low when compared to the number of people using the local road system and the volume of traffic.

Administrative Costs

Though administrative and other overhead costs are separately identified in the annual financial report to the state, apparent inconsistencies in reporting practices among counties and in the same county over a period of time tend to make this data unreliable for analytic purposes. In Oakland County, for example, administrative costs (both primary and local road systems) increased steadily from \$355,104 in 1964 to \$1,532,274 in 1971 and then dropped to \$376,823 in 1972. Administrative expenses were reported as \$729,718 in 1973. This apparent decline in recent years is due to a change in reporting practice as a result of an amendment to Act 51 prohibiting administrative costs from exceeding ten percent of motor vehicle highway fund revenues. It does not signify an actual decline in administrative expenditures. While this study did not examine reporting practices in other counties, the fact that individual counties are allowed latitude in determining what items are to be classified as administrative expenses seems to make this an unreliable source of comparative data. It should also be noted that inconsistencies in reporting administrative expenses may affect other expenditure categories. For example, if administrative expenses are understated in a given year, construction and maintenance expenditures will be overstated by a corresponding amount. However, administrative expenditures are relatively small and it is unlikely that any inconsistency

in reporting practice would significantly alter the report of construction and maintenance expenditures on the primary and local road systems.

Capital Outlay

The statement of capital outlay expenditures in the annual report to the state represents the net addition to the road commission's capital investment after deducting for depreciation and equipment retirements and adjusting for the gain or loss from the trade-in allowance on used equipment. In nine of the past ten years, capital outlay expenditures in Oakland County constituted a net addition to the road commission's capital stock. In 1973, gross capital outlay expenditures were \$1,150,803, while net expenditures were reported as \$305,985. Gross capital outlay expenditures are budgeted at \$707,620 for 1974.

CHAPTER II

ROAD NEEDS IN OAKLAND COUNTY

As required by Act 51, every county road commission must submit an annual "Mileage and Condition Report" to the department of state highways and transportation. The Oakland County road commission reported 2,370.58 miles of roads under its jurisdiction as of December 31, 1973, of which 1,911.96 miles (80.1 percent) were considered inadequate. The state highway department provides the following general definition of an inadequate street or road:

A road or street may be inadequate depending on the volume and character of traffic using it, if alignment, grades, sight distance or width make travel dangerous or cause excessive delay in movement; if the type of surface, base, sub-base, or drainage causes excessive maintenance costs, interference with travel during the spring break-up and other periods, or results in excessive wear on motor vehicles.

During the past decade (1964-1973), Oakland County reported a net increase of 342.87 miles of inadequate roads, while the adequate road mileage declined by 397.70 miles. The percentage of county roads judged inadequate increased steadily during the decade rising from 64.7 percent in 1964 to 80.7 percent in 1973.

Since the determination of whether a road is adequate or not involves an element of judgement by the individual highway agency making the report, the "Mileage and Condition Report" data may not be completely comparable among counties or in the same county over a period of time. However, the data appear to indicate that the county road network in Oakland County is in much poorer condition than elsewhere in the state, as shown in Table 1.

Table 1
Percentage of County Roads Judged Inadequate
Oakland County, 16 Southern Michigan Industrial
Counties and Statewide Average

	Primary Road System (Percent <u>Inadequate</u>)	Local Road System (Percent <u>Inadequate</u>)	All County Roads (Percent <u>Inadequate</u>)
Oakland County	90.7	76.1	80.7
Median - 16 Counties	44.8	48.6	51.1
Statewide Average	37.8	48.7	45.5

NOTE: Data for Oakland County is as of December 31, 1973. The data for other counties is as of December 31, 1972.

Source: Twenty-second Annual Progress Report "1974 Mileage and Condition Report", Oakland County Road Commission.

⁴ Michigan department of state highways and transportation, "Instructions for Preparing the Annual Report for Counties," p. 3.

There is also some evidence that the county road system is in poorer condition than city and village streets in Oakland County. Using the same definition of inadequacy outlined earlier, cities and villages reported only 25.7 percent of their road system inadequate as of December 31, 1972. Whereas the road commission has 1,911.96 miles of inadequate roads, only 372.64 miles of city and village streets are similarly classified. The department of state highways and transportation considers 93 percent of the state trunklines in Oakland County inadequate, but it appears that higher standards are used in evaluating state roads.

The Highway Needs Study

Though the data in the annual "Mileage and Condition Report" is the most current, a more comprehensive study of the county road network was made in 1970 as part of the statewide highway needs study conducted by Wilbur Smith and Associates. As part of this effort, each county road commission was asked to inventory its road network and provide detailed information about existing and anticipated road deficiencies during the period 1970 to-1990. Cost estimates for construction, maintenance, and administration were then developed centrally on the basis of uniform standards. In Oakland County, total county road needs during the twenty-year period (based on 1970 dollars) were estimated at \$1.8 billion. Oakland County's total needs were greater than any other county road commission in the state. Local road needs were especially high. Table 2 breaks down the total needs of the road commission by road system and major object of expenditures.

Table 2
Analysis of Oakland County Road Needs, 1970 to 1990^a
(Amounts are in millions of dollars)

	<u>Primary Road System</u>	<u>Local Road System</u>	<u>Total Needs— All County Roads</u>
IDENTIFIED CONSTRUCTION			
-Right of Way	\$337.4	\$196.3	\$ 533.7
-Grade and Drainage	139.9	184.8	324.7
-Base and Surface	270.8	229.2	500.0
-Structure	15.0	3.8	18.8
-Miscellaneous	17.3	27.1	44.4
-Railroad Crossings	<u>0.6</u>	<u>0.7</u>	<u>1.3</u>
Sub-total Identified Construction	\$781.0	\$641.9	\$1,422.9
STOPGAP CONSTRUCTION ^b	\$ 37.4	\$ 59.0	\$96.4
MAINTENANCE	67.7	60.6	128.3
ADMINISTRATION	<u>70.9</u>	<u>60.9</u>	<u>131.8</u>
GRAND TOTAL	\$956.9	\$822.4	\$1,779.3

^a Cost estimates are in 1970 dollars.

^b Stopgap construction is defined as minor improvements or extraordinary maintenance to retain inadequate roads in a serviceable condition until identified construction needs can be met.

NOTE: Detail may not add to totals due to rounding.

As shown in Table 2, the category “identified construction” constituted the bulk of Oakland County’s total needs. A further breakdown of identified construction costs by the time period in which the construction will be required reveals that two-thirds of the county’s construction needs were existing or “backlog” needs as of 1970. Only one-third of the \$1.4 billion of needed construction was to meet needs which were expected to develop during the twenty-year period under analysis. As this suggests, backlog needs in Oakland County were unusually high. Whereas the county’s existing construction needs in 1970 accounted for nearly a quarter (23.7 percent) of the statewide total, the county’s anticipated construction needs during the twenty-year period comprised only 7.8 percent of the statewide total.

To help counties and other jurisdictions “catch-up” on backlogged needs while keeping abreast of anticipated needs during the twenty-year period, the highway needs study calculated three alternative estimates of average annual financial requirements—a ten-year program in which backlog needs would be met by 1980, a 15-year program in which backlog needs would be met by 1985, and a 20-year program in which backlog needs would be spread over the entire period under analysis. Table 3 shows the average annual financial requirements of the Oakland County road commission under each of the alternative “catch-up” periods. The estimated annual requirements include identified construction, stopgap construction, maintenance and administrative costs.

Table 3
Average Annual Financial Requirements of the
Oakland County Road Commissions
(Amounts are in millions of dollars)

	<u>During</u> <u>Catch-up</u> <u>Period</u>	<u>After</u> <u>Catch-up</u> <u>Period</u>
10-Year Catch-up Period:		
County Primary System	\$ 67.4	\$ 26.7
County Local System	<u>65.4</u>	<u>14.0</u>
Total Avg. Annual Requirements	\$132.8	\$40.7
15-Year Catch-up Period:		
County Primary System	\$ 55.2	\$24.3
County Local System	<u>48.1</u>	<u>17.3</u>
Total Avg. Annual Requirements	\$103.3	\$41.5
20-Year Catch-up Period:		
County Primary System	\$ 47.8	—
County Local System	<u>41.1</u>	—
Total Avg. Annual Requirements	\$89.0	—

a Estimates of average annual financial requirements are in constant 1970 dollars.

NOTE: Detail may not add to totals due to rounding.

Since total expenditures in 1973 (though at a record high) were only \$21.4 million, it is obvious that the road commission will fall far short of meeting all its backlog needs—unless the annual expenditure rate is quadrupled. Indeed, it appears that the county's backlog needs are increasing. Whereas construction expenditures for the last four years (1970 through 1973) have averaged \$7.7 million, the highway needs study estimated that an annual expenditure of \$33.8 million would be required just to meet new construction needs which were expected to develop during the first five years of the study period (1970 through 1974). To make matters worse, the \$89.0 million estimate (20-year program) of average annual financial requirements is based on constant 1970 dollars. Though precise data on inflation in highway construction and maintenance costs in Michigan is unavailable, it is obvious that considerable inflation has occurred since 1970. The national price index for federal aid highway construction increased 23.5 percent from 125.6 in 1970 to 155.1 for the third quarter of 1973 (1967 = 100.0).

A Proposed Construction Program

Though there is ample evidence confirming the seriousness of Oakland County's road deficiencies, the overwhelming cost of meeting all the needs outlined in the highway needs study limits the usefulness of that report as a planning tool for the road commission. Even with the most optimistic assumptions about possible revenue increases, it is unrealistic to expect the annual road commission budget to approach \$89.0 million in the foreseeable future. However, the data compiled for the needs study (along with that available from the "Mileage and Condition Report" and other sources) can serve as the basis for developing a more modest construction program which would enable the road commission to meet some of its most critical needs within present and potentially available revenues. With the assistance of the road commission staff and the engineering consultants retained by the Research Council, a ten-year improvement program has been developed to illustrate the minimum construction requirements if the county is to have a reasonably adequate road system.

Primary Road Needs. Oakland County's primary road construction needs fall into four broad classes: urban primary road needs, rural primary road needs, bituminous overlay resurfacing needs, and intersection improvements. On the urban primary road system, rapid population growth has created serious congestion problems on a number of roads. At the present time, the road commission's planning department estimates that 50 miles of urban primary roads are "critically congested" and another 50 miles are likely to become critically congested in the next five to ten years. Most of these roads are two lane highways which should be widened and reconstructed to five lanes. Assuming an average cost of \$1.25 million per mile to upgrade these roads, the total cost of improving 100 miles of urban primary roads would be \$125.0 million.

Approximately 100 miles of the primary system are unpaved roads in rural areas of the county. A recent survey by the road commission's planning engineer revealed that roughly half of the gravel primary roads could be paved with minimal base, drainage, and alignment improvements. Based on an estimate of \$100,000 per mile to pave these roads, 50 miles of gravel primary roads could be surfaced for about \$5.0 million. The remaining gravel primary roads require more extensive reconstruction. Assuming an average cost of \$250,000 per mile, the remaining 50 miles could be paved for about \$13.0 million.

To keep abreast of surface deterioration on existing paved primary roads, it is estimated that six to seven percent of the system (or 50 miles) should be resurfaced annually at an average cost of \$35,000 per mile.

The total cost of bituminous overlay resurfacing is estimated at \$1.75 million per year. Finally, intersection improvements on the county primary road network are estimated at \$1.0 million per year.

Local Road Needs. Oakland County's local road needs fall into two classes: the needs of local roads other than subdivision streets ("mile type roads") and subdivision street needs. The 1974 "Mileage and Condition Report" lists almost 700 miles of local roads (non-subdivision) as inadequate. These are mostly gravel roads in rural areas of the county. Since the cost of paving all of these roads would be prohibitive, a more feasible alternative is to pave those roads with relatively heavy traffic volumes and continue the road commission's current gravel program to upgrade the remainder. Based on the data collected for the highway needs study, about 340 miles of local roads in poor condition have daily traffic volumes in excess of 500 cars. While many of the 340 miles of local roads will have to be completely reconstructed at a cost of \$300,000 to \$400,000 per mile, some road segments can probably be paved with minimal base, drainage, and alignment improvements. At a cost ranging from \$80,000 to \$150,000 per mile. Assuming an average cost of \$250,000 per mile, it would cost \$85.0 million to pave 340 miles of local roads. In order to improve the remaining unpaved local roads, the present gravel program would be continued with increased emphasis on remedying base and drainage problems as well as applying gravel. The cost of the gravel program is estimated at \$1.0 million per year.

Almost 550 miles of the subdivision streets under the road commission's jurisdiction were classified inadequate according to the 1974 "Mileage and Condition Report." Most of these streets are unpaved. Of the inadequate street mileage, about 400 miles were constructed when there were no design standards or when the standards were inadequate. These streets are generally believed to be in the poorest condition. Based on an average cost of \$100,000 per mile, it would cost \$40.0 million to pave 400 miles of subdivision streets. Most of this cost, of course, would be borne by the benefiting property owners.

Financing the Proposed Construction Program

Over a ten-year period, the total cost of the road improvements outlined in the preceding section would be \$306.0 million—\$171.0 million on the primary road system and \$135.0 million on the local system. This estimate is based on 1973 construction costs and does not make an assumption about future inflation. During the past ten years (1964-1973), the national price index for federal aid highway construction has increased at an average annual rate of 6.7 percent. On the other hand this analysis also disregards any possible growth in road commission revenues during the next ten years. While little is known about the long-term effects of the present fuel shortage on gasoline consumption, the state highways and transportation department originally estimated that motor vehicle revenues would continue to increase at an average annual rate of 4.5 percent. Based on a more conservative set of assumptions, the highway needs study in 1970 forecast an average annual increase in gasoline consumption of 2.9 percent. During the past ten years, Oakland County's state equalized valuation has increased at an average annual rate of 10.9 percent. While some inflation in construction costs during the next ten years seems likely, this analysis of how the road commission might finance its needs should remain reasonably accurate except as the rate of inflation exceeds the growth in road commission revenues.

⁵ The average costs of improving local roads are higher per mile than the costs of improving primary roads because the primary roads are generally in better condition to start with and require less extensive base and drainage improvements.

As shown in Table 4, assuming the road commission continues to spend about \$7.0 million per year from road commission resources on road construction and federal aid averages \$3.2 million per year, roughly two-thirds of the cost of the ten-year construction program (\$204.0 million or \$20.4 million per year) will have to come from locally raised revenues: township, city and village contributions, special assessment district revenues, appropriations from the county board, or revenue from new sources such as a county-wide voted millage or bond issue for road construction. Since locally raised revenues are budgeted at only \$6.3 million for 1974, it is clear that any plan for financing a stepped-up construction program will require a substantially higher level of support from the residents of Oakland County.

There are three basic ways for additional funds to be raised for county road improvements: (1) a county-wide operating millage for road construction; (2) a general obligation bond program; or, (3) a higher level of support from local governments in the county. It should be noted, of course, that these alternatives are not mutually exclusive. For example, a financing plan which combined an operating millage with a higher level of support from local governments or, alternatively, a bond program in conjunction with increased support from local governments are also ways in which additional funds could be raised.

A County-Wide Operating Millage. As discussed in the preceding chapter, with the approval of the voters and the cities and villages in the county, up to five mills may be levied for county road improvements. If all the cities and villages do not approve the proposal, the millage may still be levied, but the revenue must be shared with the cities and villages according to a formula which in Oakland County would divide the revenue almost equally between the road commission and the cities and villages. Assuming revenues from other local sources of \$7.2 million, a levy of 2.3 mills would raise the \$13.2 million needed to bring total local revenues to \$20.4 million per year. This estimate assumes that the cities and villages agree to earmark all the property tax revenue to the road commission. If the money must be shared, a levy of about 4.6 mills would be required to raise an additional \$13.2 million for county road improvements.

A General Obligation Bond Program. With the approval of the voters and the cities and villages in the county, general obligation bonds could be issued to finance county road improvements. These bonds pledge the full faith and credit of the county and are paid by a property tax levy. As in the case of an operating millage, if the cities and villages fail to agree to the proposal, the bonds can still be issued but the proceeds must be shared. Assuming revenues from other local sources of \$7.2 million per year, a \$132.0 million bond program would be required to meet the unfunded construction needs during the ten-year period. At an interest rate of 5.5 percent, debt service requirements after all the bonds were sold would require a levy of about three mills if the bonds were retired in ten years or 1.9 mills if retired in 20 years. Of course, a much larger bond program would be required if the cities and villages in the county shared in the proceeds.

⁶ In 1974, a total of \$6.3 million is budgeted from local sources, including special assessment district revenue of \$1.9 million. The \$7.2 million estimate of local revenue assumes that special assessment revenues will increase to \$2.8 million per year or 70 percent of the \$4.0 million annual requirement.

Table 4
A Comparison of the Proposed 10-Year
Construction Program with the 1974 Construction Budget
(Amounts are in millions of dollars)

	Total Cost 10-Year Constr. Program	Average Annual Financial Requirement	Breakdown of Annual Projected Financial Requirement by Funding source		
			Road Comm. ^a	Locally Federal Aid ^b	Raised Revenue ^c
<u>Proposed Construction Program</u>					
Urban Primary	\$125.0	\$12.5	\$1.0	\$3.0	\$ 8.5
Rural Primary ^c	18.0	1.8	0.9	0.2	0.7
Bituminous Overlays	18.0	1.8	1.3	—	0.5
Intersection Improvements	<u>10.0</u>	<u>1.0</u>	<u>0.5</u>	<u>—</u>	<u>0.5</u>
Subtotal Primary System	\$171.0	\$17.1	\$3.7	\$3.2	\$10.2
Local Roads (non-subdivision streets)	\$ 85.0	\$ 8.5	\$2.2	—	\$ 6.3
Subdivision Streets	40.0	4.0	0.6	—	3.4
Local Road Gravel Program	<u>10.0</u>	<u>1.0</u>	<u>0.5</u>	<u>—</u>	<u>0.5</u>
Subtotal Local System	<u>\$135.0</u>	<u>\$13.5</u>	<u>\$3.3</u>	<u>—</u>	<u>\$10.2</u>
GRAND TOTAL - Proposed Construction Program	\$306.0	\$30.6	\$7.0	\$3.2	\$20.4
<u>1974 Construction Budget</u>	\$ —	\$18.7	\$7.0	\$5.5	\$ 6.3

^a The 1974 road commission budget allocates \$7.0 million from road commission resources to the construction program and the projected financial requirement by funding source assumes the road commission will continue to allocate \$7.0 million annually to the construction program. The breakdown by type of project is illustrative only.

^b Assumes that the road commission receives three-quarters of the federal aid-urban funds allocated to Oakland County.

^c Locally raised revenue includes contributions from cities, villages, and townships, appropriations from the county board of commissioners, revenue from special assessment districts and revenue from “new” sources such as a county-wide millage or bond issue for road improvements.

Increased Participation by Local Governments. Another method of raising additional funds would be for townships, cities, villages, special assessment districts, and the county board of commissioners to increase their level of participation in county road improvements. For example, though townships are authorized to levy up to three mills (with voter approval) for road purposes, 1973 township contributions were equivalent to a tax levy of only 0.69 mill. If every township levied three mills for roads, the road commission would receive about \$6.0 million per year or \$4.2 million more than is expected in 1974. This would cover about one-half of the projected annual requirement for local roads.

Though the road commission cannot force townships to contribute more, it could encourage greater participation by reducing the road commission share of local road improvement costs. At the present time, the cost of local road construction (excluding subdivision streets) is shared equally by the road commission and the affected township. Though Act 51 requires that motor vehicle highway fund monies used for local road construction must be matched by local funds, the law does not prevent the road commission from requiring townships to pay more than half of the cost. If townships were required to contribute 75 percent of the cost, the road commission would probably have ample funds to provide its 25 percent share for any township which wanted to improve its local road network. The same objective could also be obtained by making an across-the-board reduction in local road maintenance expenditures in order to provide additional funds for construction. Under this strategy, the matching ratio on local road construction would remain the same, but townships would have to contribute additional funds to retain the present level of local road maintenance.

Though not required by law, the road commission usually requires cities and villages to contribute a portion of the cost of primary road construction projects within their corporate limits. On federal aid-urban projects, for example, the federal share is about 70 percent, the affected city or village is required to contribute 15 percent, and the road commission pays the remaining 15 percent. In order to shift some of its financial burden to cities and villages, the road commission could require them to pay a larger portion of primary road construction costs on both federal aid and non-federal aid projects. This approach would be especially feasible if the cities and villages in the county were receiving extra funds for road purposes because they wouldn't agree to earmark the revenue from a countywide road millage or a general obligation bond program to the road commission.

Conclusions. Each of the alternative methods of raising additional local revenue to finance an upgraded county road improvement program has advantages and disadvantages. For example, a serious practical problem with either a county-wide operating millage or a general obligation bond program is the requirement that the revenue must be shared with the cities and villages in the county unless they unanimously agree to a different distribution scheme. While this might not pose a problem in a rural county with only a few cities, it is a serious obstacle in Oakland County which has 38 cities and villages. Though either an operating millage or a debt service millage to repay general obligation bonds could be imposed without city and village approval, roughly twice as much money would have to be raised from the taxpayers to yield enough money to meet county road needs. The higher tax rate would, of course, make it more difficult for the road commission to obtain voter approval of either an operating millage or a bond program.

An additional drawback to a general obligation bond program is the extra cost due to interest payments on borrowed funds. If repaid over 20 years, total debt service requirements (principal and interest) would be nearly double the amount of money originally borrowed. On the other hand, by spreading the cost of the construction program over a relatively long period of time, it is possible to reduce the annual cost to the

taxpayer. Another advantage to financing the ten-year program with bonds is that a substantial part of the program could be completed as soon as practicable without the necessity of waiting for future tax collections.

Though an effort to increase participation by local governments is a less certain method of obtaining additional local revenue, this approach has the advantage that it does not require voter approval or the approval of cities and villages in the county. It is also a flexible method of dealing with county road needs. Depending on the level of support, individual townships, cities and villages could have as much (or as little) improvement to the county road network in their jurisdiction as desired. However, the road commission would have difficulty in providing matching funds from present revenues and a county-wide voted tax increase or bond issue or an increase in the appropriation from the county board of commissioners would probably be needed to provide the road commission with matching funds.

It is recommended that the board of county road commissioners adopt a ten-year construction program to meet the priority road needs of the county and that it propose alternate means of financing the program. The proposed program and alternate means of financing should be submitted to the Oakland County board of commissioners for consideration and action.

CHAPTER III

OVERALL ORGANIZATION OF THE ROAD COMMISSION

The top level administrative organization of the Oakland County road commission consists of the board of county road commissioners, the managing director, the county highway engineer, the staff departments responsible to the managing director and the operating departments responsible to the county highway engineer.

The Board of County Road Commissioners

The road commission is headed by a three-member board of county road commissioners who are appointed by the county board of commissioners for six-year overlapping terms of office. The board of county road commissioners is in a process of transition from a full-time body to a part-time body. Prior to 1971 all three members of the board were appointed by the county board of commissioners as "full-time" members. In 1970 the county board of commissioners decided that the board of county road commissioners should be part-time. The members whose terms began January 1, 1971, and January 1, 1973, are considered "part-time" members, while the member whose term began January 1, 1969, is still considered a full-time member. It is understood that when the term of the incumbent full-time member expires on December 31, 1974, that position will also become part-time. The 1974 salary of the full-time member is \$13,500, while the part-time members receive \$8,500 (chairman) and \$7,500 respectively. The salaries are set by the county board of commissioners.

When the members of the board of county road commissioners were full-time, the board operated somewhat like a commission form of government with each of the members of the board assigned responsibility for overseeing specific aspects of the road commission operations. In 1970 the operations were divided among the three members of the board as follows:

Chairman - planning and safety; liaison with board of supervisors, county parks and recreation committee, county planning commission, traffic improvement association.

Vice Chairman - engineering and construction; records and accounting; material and equipment purchasing; legal; public relations; and liaison with inter-county highway commission.

Member - right-of-way; permits and traffic; local roads; special assessments; plats; and personnel relations.

In actual practice the members of the board of county road commissioners did not direct the day-to-day operations of the road commission. The operating departments were supervised and directed by the county highway engineer while the clerk-secretary of the board served generally as financial manager for the commission. Two functions, personnel and purchasing, apparently received relatively limited direct supervision.

With the appointment of the second part-time commissioner effective January 1, 1973, the board of county road commissioners discontinued the commission form of operations and changed the title of the county highway engineer to engineer-manager and made him chief administrator with responsibility for supervising and coordinating all departments of the road commission. In August, 1973, the board created the position of director (subsequently changed to managing director) as chief executive officer of the road commission.

While the commission form of operation has been abandoned, vestiges still remain. Many of the forms used by the road commission still require the signature of a member of the board (as opposed to approval by the board as a whole). For example, the form used to appoint a new employee requires the signature of a board member.

The law requires that “the board of county road commissioners shall act as an administrative board only and the function of the board shall be limited to the formulation of policy and the performance of official duties imposed by law and delegated by the board of supervisors, and no member of the board of county road commissioners shall be employed individually in any other capacity by, or for any other duties with the board of county road commissioners....” (MSA 9.109).

The remaining vestiges of the commission form of operations involving actions taken by individual members of the board should be eliminated.

It is recommended that all matters requiring approval of the board of county road commissioners be submitted to the board as a whole and that action be formally taken by the board.

Road Commission Policies

One of the major problems in the operations of the road commission is the lack of formal policies adopted by the board of county road commissioners. While formal policies have been adopted from time to time in the past, these policies are not comprehensive, some have become obsolete, they have not been catalogued or indexed, and policies have become confused with departmental procedures, internal memoranda and custom. The result is that in many important areas there are no formal policies of the board to guide the staff or the citizen. Many activities of the road commission have a direct impact on the rights and interests of private citizens and other public bodies and it is vital in dealing with these parties that the road commission have a set of formal policies adopted by the board to guide the staff and the public. Many of the present problems confronting the road commission stem directly from the failure in years past to adopt and implement appropriate policies in areas such as subdivision street standards, right-of-way, and other areas of concern.

The present board of county road commissioners has recognized the problem of a lack of appropriate policies and has taken steps to adopt new policies in several areas (e.g., special assessment procedures, specifications for underground contractors). The board should give priority to developing a comprehensive set of policies which should be serially numbered, identified by date, indexed and cross-referenced, and compiled in a separate manual. The board has the responsibility under state law for “the formulation of policy.”

It is recommended that the board adopt formal policies covering all major aspects of road commission operations.

Exhibit 1 lists a series of subjects which should be covered by board policies. The list is not comprehensive but will provide a starting point.

Exhibit 1

Examples of Subjects That Should be Covered by Board Policies

1. Standard specifications for highway construction.
2. Standard for design.
3. Plat development standards and specifications.
4. Street improvement-procedures (special assessment districts).
5. Members of staff authorized to sign for purchases without bids.
6. Members of staff authorized to close a road temporarily.
7. Members of staff authorized to approve changes in highway improvement contracts within limits imposed by board policy.
8. Board policy on contract changes and extras.
9. Cost of relocating public utilities.
10. Drainage in roadside ditches.
11. Ditch enclosures.
12. Pedestrian overpasses.
13. Charge for copies of records.
14. Assisting distressed vehicles.
15. Road abandonment.
16. Natural beauty.
17. Uncertified streets.
18. Private roads.
19. Occupying right-of-way (encroachments).
20. Appraisals on parcels of right-of-way.
21. Political and other signs in right-of-way.
22. Burning rubbish in right-of-way.
23. obstructions on shoulders.
24. Financial participation by other agencies (cities, townships).
25. Calcium chloride regulation.
26. Conduits crossing highway.
27. Tree removal.

In addition to the types of subjects covered in Exhibit 1, the board should also adopt policies relating to internal administrative matters such as the personnel system which are discussed subsequently in this report. While the task of adopting policy statements covering these and other areas will be initially time-consuming, the benefits will be substantial and continuing.

Board Meetings

The board of county road commissioners holds a regular meeting every Tuesday morning at 10:00 a.m. to conduct its regular business. Depending on the agenda items the meetings last about two hours. An analysis of the minutes of 39 meetings during 1973 indicates the number of items of various types that are acted upon by the board:

Permits	3,649
Contracts for construction & maintenance	237
Right-of-way	208
Traffic regulations	134
Special assessments	88
Purchase contracts	80
Intergovernmental agreements	67
Notices of injuries and suits	54
Plat approvals	41
Street abandonments	13
Administrative decisions	64
Miscellaneous	114

The Managing Director

In August, 1973, the board of county road commissioners by resolution established the position of director of the Oakland County road commission (title subsequently changed to managing director). The managing director is the chief executive officer of the road commission. The heads of staff departments (legal, personnel, purchasing, secretary and clerk of the board, and office of public assistance) report directly to the managing director while the heads of the operating departments (engineering, traffic, permits, and maintenance) report to the managing director through the county highway engineer.

The resolution establishing the position of managing director states that "he is responsible to board of county road commissioners for:

- overall direction of the day-to-day operations of the Road Commission in accord with policies established by the Board,
- making policy recommendations to the Board from time to time,
- improving and maintaining relationships with other governmental agencies and units and with the citizenry of Oakland County,

- providing timely meeting agendas and complete back-up materials on agenda items for members of the Board prior to regular and special meetings of the Board,
- preparing annual operating budgets for consideration and adoption by the Board,
- providing the Board a complete and detailed budget performance report once each month,
- preparing and disseminating such public reports and communications as are required by law or deemed advisable by the Board,
- arranging an annual audit of the Commission's financial records and reports by an independent public auditing firm,
- such other responsibilities as the Board may, from time to time, impose."

While the list of duties assigned the managing director by the board is generally appropriate, the managing director should not be responsible for "arranging an annual audit of the Commission's financial records and reports by an independent public accounting firm." The managing director is responsible for supervising financial administration, authorizing expenditures, and signing checks and should not be responsible for arranging the annual audit. The annual audit should provide an independent check upon those responsible for collecting, disbursing and otherwise handling the funds of the road commission and the auditors should be selected by and report directly to the board of county road commissioners.

The creation of the position of managing director has provided supervision, direction and coordination to the staff activities of the road commission which, prior to 1973, had been rather loosely supervised by individual members of the board of county road commissioners. The managing director was responsible for preparing a comprehensive budget for 1974 for consideration by the board of road commissioners and has been administering the budget. It is recommended in the section of this report on financial administration that a finance director be appointed by the managing director to assist in budget preparation and execution. The managing director with the assistance of staff has also drafted for board consideration proposed new policies on special assessment projects and specifications for underground contractors. The preparation of a comprehensive set of proposed board policies should be a primary and high priority responsibility of the managing director. As noted previously the Oakland County road commission has been seriously deficient in the adoption of formal board policies.

One of the most important responsibilities assigned the managing director by the board resolution is "improving and maintaining relationships with other governmental agencies and units and with the citizenry of Oakland County." As noted in the body of this report, road construction and maintenance activities involve a complex series of intergovernmental relationships between the road commission and the federal government, the state, Oakland County government, and the cities, villages and townships within the county and, in some instances, inter-county agreements. While many of these intergovernmental relationships involve primarily technical problems (e.g., scheduling maintenance activities on state trunklines under the maintenance agreement with the state or installing a traffic signal for a city) that are properly resolved by the engineers for the various units involved, policy issues are becoming increasingly important.

It is pointed out in this report that if Oakland County is to make any progress in improving its road system it will be essential that there be increased financial participation by the local units in the county, by the county government, or by the taxpayers of the county. The development of such increased financial support is essentially a political problem rather than a technical problem and will require strong policy leadership.

The establishment of the position of managing director by the board of county road commissioners is warranted by the circumstances in Oakland County. The transition of the board into a part-time body concerned primarily with making policy, the necessity for more effective supervision and control over staff activities, and the need for strong policy leadership in developing and implementing a long-term plan for financing the improvement of the Oakland County road system, justify the move.

It is recommended that the position of managing director be continued and that the managing director continue to serve as chief executive officer of the commission.

The board resolution establishing the position and appointing the managing director did not specify the duration of the appointment. The practice has been for the county highway engineer and the clerk-secretary to be appointed by the board annually for a one-year term, but the incumbent managing director was not reappointed at the January, 1974, meeting of the board. Apparently the intention of the board is that the managing director will serve at the pleasure of the board. In view of the nature of the position this is appropriate but should be formally spelled out.

It is recommended that the resolution establishing the position of managing director be amended to provide that the managing director shall serve at the pleasure of the board of county road commissioners.

Under present organizational arrangements the heads of the staff departments (personnel, purchasing, secretary-clerk, office of public aid, legal counsel) report directly to the managing director while the heads of the operating departments (engineering, maintenance, traffic and permits) report directly to the county highway engineer who is responsible to the managing director and the board for operations. To formalize the existing practice, the resolution establishing the position of managing director and the resolution recommended in this report providing for the position of county highway engineer should clearly state that the county highway engineer reports to the board of road commissioners through the managing director.

The present organizational arrangements of staff agencies reporting directly to the managing director and operating agencies reporting through the county highway engineer is basically sound. The staff activities of the road commission have suffered in the past from a lack of effective supervision and coordination. As noted in the body of this report, there is a need for improved procedures in personnel management and financial administration and the recent report on purchasing prepared by Arthur Young and Company stresses the need for improvements in purchasing procedures. While significant progress has been made in recent months in improving budgeting and purchasing procedures, strong leadership and direction will continue to be needed to upgrade the staff operations.

While the staff-line (operating) division of responsibility has many advantages there are also potential problems. The basic function of the road commission is to improve and maintain the road system in the county and these activities are carried out by the operating departments. While legal requirements and sound public policy dictate that staff departments operations (such as purchasing, financial administration,

and personnel management) involve certain controls over operating activities, the staff agencies are also service agencies to the operating departments. It is essential that the managing director coordinate the activities of the staff departments with those of the operating departments and resolve any problems that might arise.

In terms of the organization of the staff agencies responsible to the managing director, several changes are recommended in the body of this report. It is recommended that a separate department of finance be established and that the office of public aid be placed under the secretary-clerk's office. There would also be some shifting of activities and personnel among the staff agencies. Thus, under the proposed organization there will be five staff departments reporting directly to the managing director including personnel, purchasing, legal, secretary-clerk and finance.

It is recommended that the staff activities of the road commission be organized into the following five departments: personnel, purchasing, legal, secretary-clerk, and finance. It is recommended that the head of each department be directly responsible to the managing director.

The County Highway Engineer

The position of county highway engineer is established by statute: "Said board of commissioners shall employ a competent county highway engineer who shall make all surveys ordered by the board, prepare plans and specifications for all roads, bridges and culverts, and exercise such general supervision over all construction as will insure that the plans and specifications are strictly followed...."

In Oakland County the county highway engineer is appointed annually by the board of county road commissioners and is responsible to the board through the managing director for the operating activities of the road commission. The county highway engineer directly supervises the heads of the engineering, maintenance, traffic and permits departments.

The county highway engineer plays a major role in the development and implementation of the road improvement program as described in detail in the chapter on the engineering department. The county highway engineer attends all meetings of the board of road commissioners and advises the board and the managing director on all phases of operating activities. He prepares the engineering items for the agenda for board meetings and presents proposed contracts and contract changes to the board. The county highway engineer is involved in negotiating intergovernmental agreements with other units of government and in maintaining liaison with public and private agencies and organizations that are involved in highway activities.

The county highway engineer directly supervises the heads of the departments of engineering, maintenance, traffic and permits. Coordination of activities among these departments is achieved through regularly scheduled staff meetings. It is recommended in the chapter of this report on the engineering department that the planning division, which is presently responsible to the director of engineering, be assigned additional responsibilities and established as a separate department responsible directly to the county highway engineer. Implementation of this recommendation would result in the following five departments being

supervised directly by the county highway engineer: engineering, maintenance, traffic, permits, and planning. While the present organization of four line departments is suitable for operating activities, the establishment of a separate planning department under the county highway engineer will strengthen his capability to develop longer range plans and goals and to coordinate and direct the activities of the operating departments.

It is recommended that the operating activities of the road commission be organized into the following five departments: engineering, maintenance, traffic, permits, and planning. It is recommended that the head of each operating department be directly responsible to the county highway engineer.

The present practice in Oakland County is for the county highway engineer to be appointed annually by resolution of the board of road commissioners. There does not appear to be any statutory requirement that the board appoint (re-appoint) the county highway engineer annually although there is a requirement that the board annually certify to the state that it has a registered professional engineer in its employ. It is recommended in the chapter of this report on personnel administration that the board of county road commissioners establish a merit system that covers all employees except the managing director and secretary-clerk of the board. Thus, the county highway engineer should be initially appointed and retained on the basis of merit.

Initial appointment and annual re-appointment of the county highway engineer on the basis of merit has been the practice in Oakland County and the recommendation would formalize this practice and establish it as basic policy for the future, while eliminating the need for annual re-appointment.

It is recommended that the county highway engineer be appointed by the board of road commissioners subject to the merit system proposed in this report.

The duties and responsibilities of the county highway engineer have not been closely spelled out by the board and there have been a number of changes in the title of the incumbent in recent years. In the past four years, the title has been successively county highway engineer, county highway engineer-superintendent, county highway engineer-manager, and back to county highway engineer. When the position of managing director was established the resolution of the board (8/7/73) stated that the director was responsible to the board for "overall direction of the operations of the road commission in accord with policies established by the board." An interdepartmental memorandum of the same date to all employees stated that the director "is vested by the board of county road commissioners with full authority of chief executive officer" and that heads of operating departments will report to the director through the county highway engineer who will be responsible to the director and the board for operations. The lack of a formal description of the duties, responsibilities and authority of the county highway engineer has led to some confusion within the organization, although informally the managing director and county highway engineer appear to be developing some mutual understanding of their respective roles in the organization. The intent of the board of road commissioners appears to have been to utilize the corporate model of dividing responsibility between "a chief executive officer" (the managing director) and "a chief operating officer" (the county highway engineer).

As noted in the section on the managing director, this type of division of responsibility appears to be appropriate for the Oakland County road commission, but the respective duties and responsibilities of the managing director and the county highway engineer need to be more clearly spelled out by the board.

It is recommended that the board of road commissioners by resolution define the duties and responsibilities of the county highway engineer.

Secretary-Clerk of the Board

State law provides that the county clerk shall be the clerk of the board of road commissioners except that when the work is of sufficient volume the board of road commissioners, with the permission of the board of county commissioners, may appoint a secretary who shall be clerk of the board of road commissioners. The Oakland County board of road commissioners, with the approval of the board of county commissioners, a number of years ago appointed a secretary-clerk of the board. The secretary-clerk is appointed annually by resolution of the board. Annual appointment of the secretary-clerk does not appear to be required by statute.

It is recommended that the secretary-clerk be appointed by and serve at the pleasure of the board of road commissioners.

Under present organizational arrangements, the office of the secretary-clerk is considered one of the staff departments and the secretary-clerk reports directly to the managing director.

The office of the secretary-clerk includes the following authorized personnel for 1974:

<u>Clerk's Office</u>		
Secretary-Clerk	1	
Secretary	2	
Switchboard Operator	1	
Account Clerk	1	
Typist Clerk	<u>1</u>	
Subtotal		6
<u>Accounting</u>		
Accounting Supervisor	1	
Asst. Accounting Super.	1	
Chief Payroll Acct.	1	
Timekeeper	1	
Bookkeeping Machine Op.	1	
Account Clerk	<u>4</u>	
Subtotal		9
<u>Data Processing</u>		
Programmer Analyst	1	
Programmer	1	
Typist Clerk II	<u>1</u>	
Subtotal		<u>3</u>
Department Total		18

The secretary-clerk's department has a broad range of duties and responsibilities. In addition to serving as secretary-clerk of the board, the department is responsible for accounting, payroll, treasury management, data processing, administration of fringe benefits, pension administration, insurance, central mail room, telephone service, and a variety of other housekeeping and central office management type functions.

One of the major responsibilities of the secretary-clerk of the board is to prepare, under the supervision of the managing director, the agenda for the weekly meetings of the board of road commissioners, assemble the necessary supporting material and documents, keep minutes of the board meetings, notify appropriate parties of actions taken by the board And keep track of matters pending before and acted upon by the board. As noted in the section of this chapter on the board there are a sizeable number of matters that come before the board for information or action and these items require for documentation a sizeable amount of paper work. The maintenance of central office files is becoming an increasingly important aspect of the work of the office.

The clerk's office provided a telephone operator-receptionist for the road commission until recently when a centrex telephone system was installed. A receptionist is still necessary to receive visitors and to answer calls to the general telephone number of the road commission. Recently, the receptionist was assigned to work directly for the members of the board of road commissioners and the managing director under the general supervision of the secretary-clerk. The receptionist is still general receptionist for the road commission, handles general telephone calls, and reviews telephone bills, etc. The secretary-clerk's office still must provide relief receptionists. This recent change reduces flexibility in staffing and work assignments, divides responsibility, and does not provide adequate supervision of the work of the receptionist.

It is recommended that the receptionist be transferee back to the secretary-clerk's office and work under the-direct supervision of the secretary-clerk.

The secretary-clerk should be responsible for providing clerical assistance to the commissioners and the managing director as required.

Currently the secretary-clerk has major responsibilities for financial administration and data processing. The accounting division and the data processing division both report to the secretary-clerk. The secretary-clerk is directly responsible for working with the county treasurer on treasury management, including submitting vouchers, signing and distributing checks, investing cash balances, receiving and depositing cash, etc. It is recommended in the chapter on financial administration that a separate department of finance be established that would be responsible for all aspects of financial administration and for data processing.

The secretary-clerk's office is also responsible for the administration of some phases of fringe benefits including health insurance, workmen's compensation, and life insurance. It is recommended in the chapter on personnel administration that the personnel department be assigned responsibility for administering fringe benefit programs.

The secretary-clerk serves ex-officio as a member of the retirement system board of trustees and as the administrator of the retirement system. The secretary-clerk's office maintains retirement system records and payments to retirants and the secretary-clerk administers with the county treasurer the investment of pension funds. The secretary-clerk should continue to be responsible for administering the retirement system.

Under the proposed reorganization the secretary-clerk's department would be assigned responsibility for three additional areas: 1) it is recommended in the section on the special assessment program that all incoming and outgoing documents relating to special assessment projects be routed through the secretary-clerk of the board; 2) it is recommended in the separate study on purchasing conducted by Arthur Young & Company that the secretary-clerk's office be given the responsibility for physical control of all bids and for tabulating and recording all bids; and 3) it is recommended in the section on the office of public aid that it be transferred to the secretary-clerk's office and function under the supervision of the secretary-clerk.

In summary, under the proposed organization the primary responsibilities of the secretary-clerk's office would be to provide centralized services relating to the flow of documents and records management, reception, telephone, mail, and secretarial-clerical services. In addition, the secretary-clerk's office would administer the retirement system and the citizen complaint-information system.

Proposed Organization

Chart I shows the present overall organization structure of the Oakland County road commission and Chart II shows the proposed organization. The present overall organization structure of the road commission is basically sound with the exception of the lack of a separate department of finance responsible for all aspects of financial administration. The proposed organization structure shown in Chart II reflects this recommended change, together with the merger of the office of public aid into the secretary-clerk's office and the elevation of the planning division of the engineering department to departmental status. In addition, as described in the body of the report, a number of sub-departmental changes are recommended.

The major problem with the organization structure that has evolved at the road commission has not been with the structure itself, but with the process by which organizational decisions have been made and implemented. In a number of instances organizational units have not been formally established with clearly defined responsibilities and reporting relationships, but have simply resulted from the appointment of a person or the adoption of a new position classification. This lack of a formal process together with the frequent changes in the organizational structure in recent years has contributed to a lack of understanding by many employees of the organizational relationships.

It is recommended that the board of road commissioners adopt by resolution an organization chart showing the departmental and divisional organization and that future changes in organization be adopted by amending the organization chart.

The secretary-clerk should be responsible for maintaining the official copy of the organization chart, cross-referenced to board actions. A copy of the organization chart should be on display at the road commission offices and copies should be given to all department heads.

Chart I

Present Organization
Oakland County Road Commission

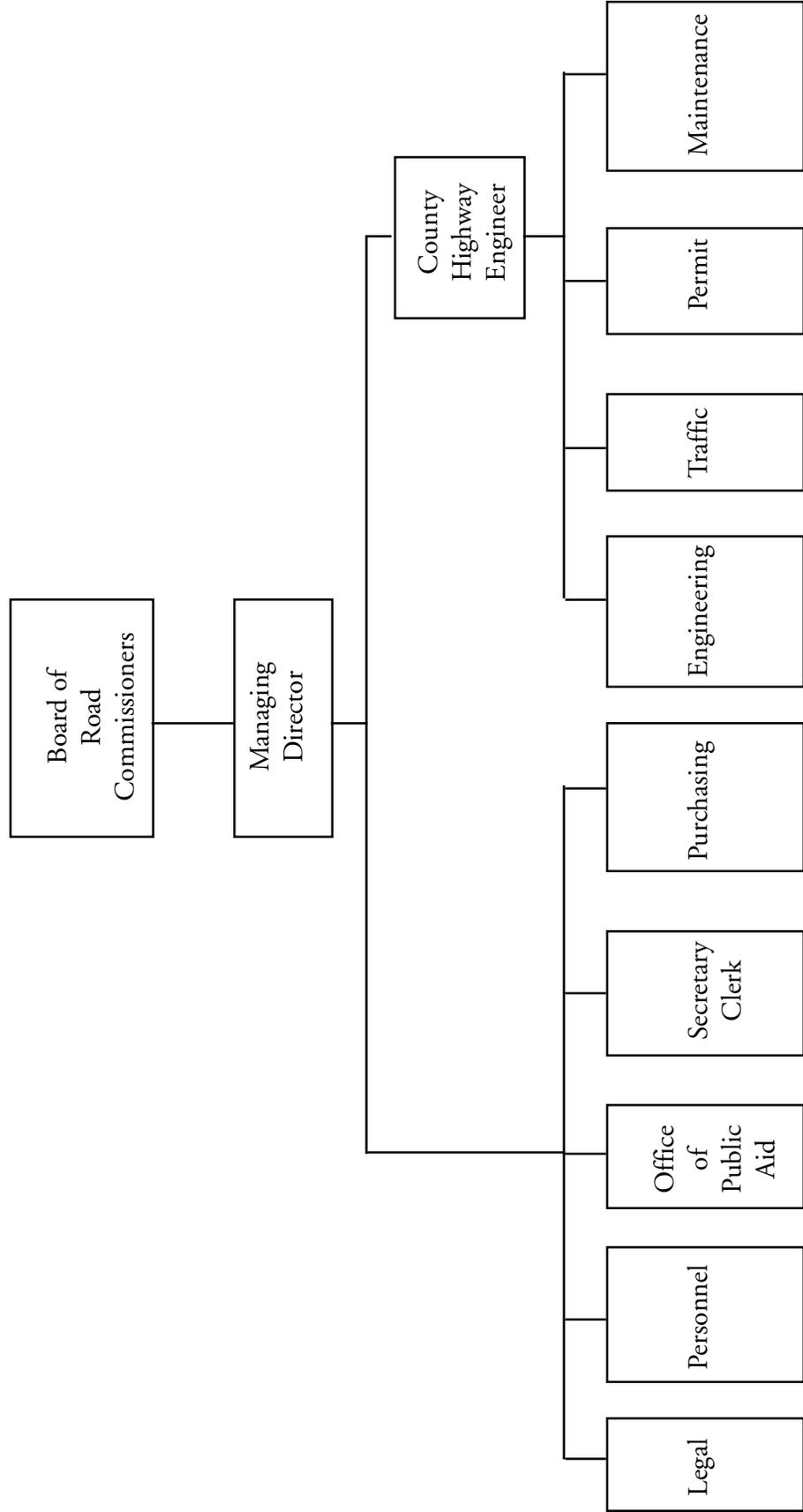
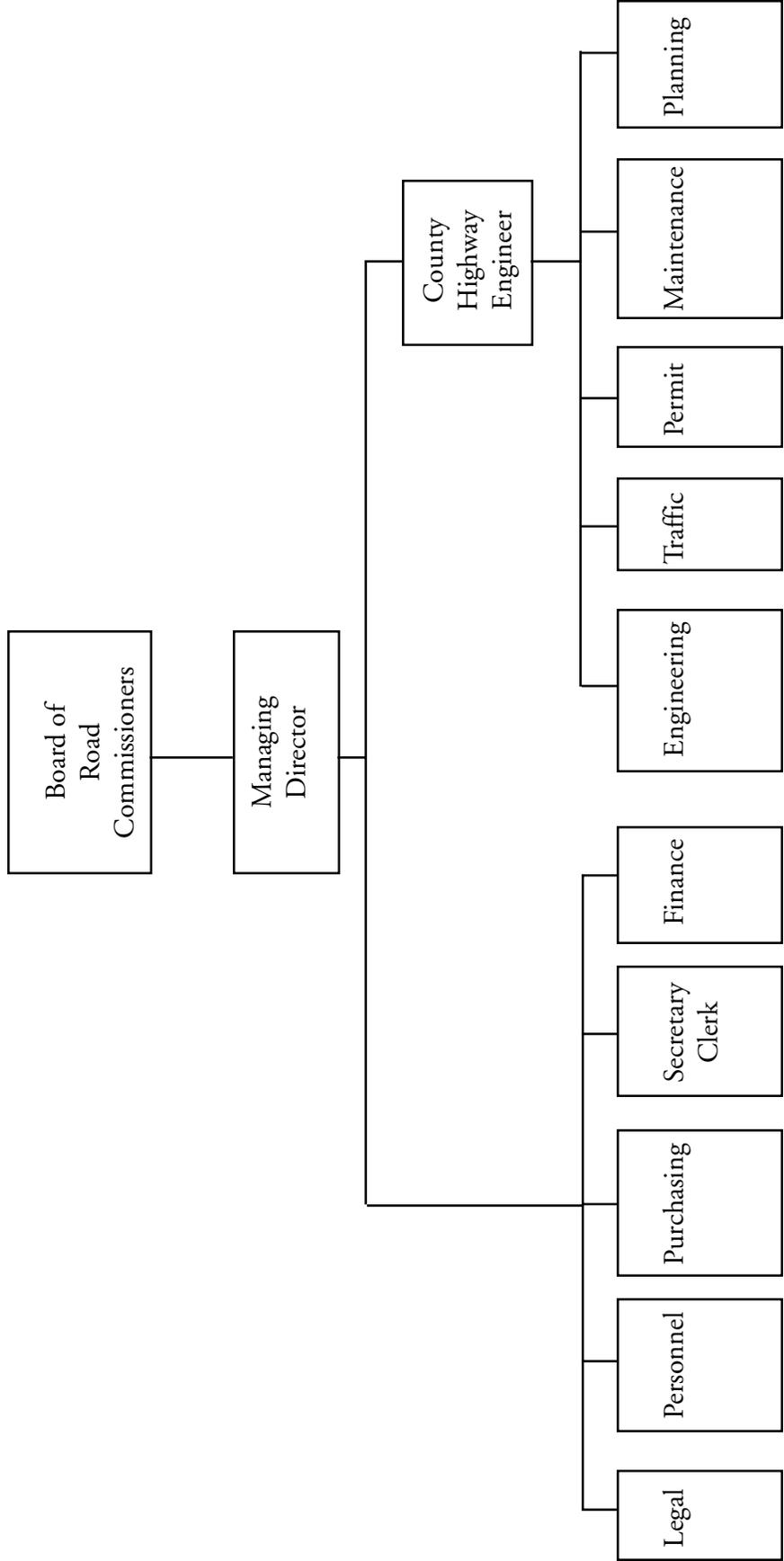


Chart II

Proposed Organization
Oakland County Road Commission



CHAPTER IV

FINANCIAL ADMINISTRATION

A local government's fiscal policy is the course of action adopted by its legislative body as to the types and levels of services to be provided and a plan for their financing. The purposes of financial administration are: to provide information to the chief administrator and to the legislative body for the development of fiscal policy; to insure that operations conform to fiscal policy as set forth in a budget; and, to insure that financial operations are conducted in accordance with legal requirements.

Organizing for Financial Administration

Statutory responsibility for county road commission finance administration is defined in two sections of Act 283 of 1909, as amended. The first (MSA 9.109) provides that the county clerk shall keep the records and accounts of the board of road commissioners, maintain its files in a manner determined by the board, and allows the board to appoint a secretary to serve as clerk to the board. The second provision (MSA 9.125) stipulates that "Accurate accounts shall be kept under the direction of the board of all money received and disbursed by it...." These provisions would appear to grant the board some discretion in determining an appropriate arrangement for the management of road commission financial operations.

In the recent past, responsibility for Oakland County road commission finance functions has been divided between the county highway engineer (then engineer-manager) and the secretary-clerk to the board. The county highway engineer was responsible for budget preparation and execution for both operating and construction programs and for providing general financial information to the board. The secretary-clerk to the board was responsible for supervising the twelve person accounting and data processing operation in addition to a four-person office staff. Accounting division responsibilities encompassed accounts receivable, accounts payable, payroll, and general ledger operations in addition to the preparation of reports dealing with equipment, construction project costs, maintenance operating costs, and other related matters. Most road commission treasury operations are performed by the county treasurer, who: receives and deposits road commission monies in the proper bank account; reviews warrants issued by the road commission and transfers monies to revolving bank accounts against which the warrants are drawn; and, invests road commission pension funds and idle cash by authority of the board of road commissioners. The secretary-clerk's office maintains liaison with the county treasurer and prepares and issues checks, determines the amount of cash available for investment, etc.

The division of responsibility for financial affairs indicates that the county highway engineer, by virtue of having had responsibility for budget preparation and execution, was the chief architect of road commission fiscal policies. Budgets maintained by the prepared by the county highway engineer and financial records accounting division were used for engineering cost accounting purposes, management of cash flow, preparing reports required by state law, and producing financial information requested by road commission staff. However, board involvement in finance matters was generally limited to the consideration and approval of

pay plans, hiring of personnel, and reviewing and awarding contracts with vendors and contractors. In past years, the board neither formally adopted an annual budget nor specifically appropriated monies to each of the various departments to meet objectives outlined in a comprehensive annual budget.

Reorganization of the road commission in mid-1973 resulted in the appointment of a managing director as road commission chief administrative officer and the person responsible for supervision of staff departments—secretary-clerk to the board (including accounting and data processing divisions), legal, personnel, purchasing, and office of public assistance. The engineer-manager's title was changed to county highway engineer with responsibility for supervision of operating departments—engineering, maintenance, permits and special uses, and traffic.

The chief administrative officer of any organization is heavily dependent on administrative controls and procedures to guarantee the conduct of programs in accordance with fiscal policy. While fiscal controls are commonly associated with different areas of financial administration, their interdependent nature and the undesirability of wasteful, duplicating efforts have constituted a strong argument for their administration by units reporting to a single director. In government this has often meant placement of budgeting, accounting, payroll, treasury, purchasing, and more recently data processing, in a single department headed by a finance director. However, the finance director is more than just a department head. As a key aide to top management, the finance director is called upon to assist the chief administrator in budget preparation, the development of short- and long-range financial plans, and management analysis.

It is recommended that the board of road commissioners establish a -finance department headed by a finance director who shall report to the managing director and be responsible for budget, accounting, payroll, and data processing functions. It is further recommended that the finance director assist the managing director in the development of financial plans, operations analyses, and other such matters as may be required.

As part of the overall road commission study, Arthur Young and Company conducted a review and analysis of road commission purchasing department operations. The final report recommended increased segregation of responsibilities involved in the processing of bids. The Research Council concurs with this recommendation and suggests the continued existence of a separate purchasing department reporting directly to the managing director to insure segregation of such responsibilities.

The Budget

The Municipal Finance Officers Association has defined a budget as:

A comprehensive plan, expressed in financial terms, by which an operating program is effective for a given period of time. It includes estimates of: (1) the services, activities, and projects comprising the work program; (2) the resultant expenditure requirements; and, (3) the resources useable for their support.

A budget is the most important tool for the development of policy, for it spells out organization objectives and the plans for accomplishing them. Budget appropriations authorized by the legislative body set up

beginning entries in the accounting system and establish a legal framework for payroll, personnel, and purchasing operations. The lack of a comprehensive budget procedure has been the principal deficiency in financial administration at the road commission in past years.

In late 1973, with assistance of Citizens Research Council staff, the managing director prepared a budget for 1974 road commission operating and construction programs which was adopted by the board in January, 1974. Participation of the Research Council was limited to design of budget format and collection of 1973 revenue and expenditure data. In all instances, 1974 revenue estimates and expenditure recommendations were made by the managing director and appropriate road commission staff.

In addition to estimates of revenue, the new budget contains appropriations for each road commission department and for the construction program. For control purposes, each departmental appropriation is divided into amounts by major object: salaries, contracted services, materials, supplies and parts, fixed charges, other expenses, and capital outlay. Appropriations for the construction program are made by type of construction project: construction to four or five lanes; local road construction requiring township participation; intersection improvements; two-land pavements; etc. The 1974 budget is a good first step toward an annual budget process. As the instrument by which the board spells out road commission priorities and a financial plan for financing its operations, the importance of the annual budget cannot be overstated.

It is recommended that the board require the managing director to submit to it no later than October 15 of each year a recommended budget for Oakland County road commission operating and construction programs for the ensuing fiscal year.

The annual budget process consists of three distinct phases: preparation; consideration and adoption; and execution. The complex nature of budget preparation requires a formal calendar which fixes dates and indicates responsibility for the completion of budget-making tasks.

It is recommended that the managing director prepare a formal calendar to assist in the preparation of the annual budget,

The budget calendar should establish dates for: the preparation of budget request forms; a meeting of the road commission top management at which the managing director evaluates the next year's financial outlook and distributes budget request forms to department heads; the return of completed departmental budget requests to the finance director; the submission of all departmental budget requests by the finance director to the managing director; a series of departmental budget hearings conducted by the managing director; submission of a recommended budget by the managing director to the board of road commissioners; a public budget hearing; and, adoption of the budget by the board of road commissioners. The managing director should find helpful the calendar employed by the budget division of the Oakland County board of auditors.

Budget Preparation

Budget-making begins with the preparation of initial revenue estimates for all funds by the finance director. Early completion of this task gives the managing director an idea of the revenues available to finance the next year's programs and allows him to make a general appraisal of the financial outlook when budget request forms are distributed to department heads.

Forms used to solicit departmental recommendations for operating and construction programs and the appropriations to finance them are distributed at the appropriate time along with a cover letter from the managing director. The cover letter "sets the tone" for the development of departmental recommendations by establishing general service and fiscal guidelines and by reviewing the impact on the proposed budget of population trends, the general economic outlook, and trends in road commission services. Explanation and distribution of the cover letter and budget request forms by the managing director at a formal meeting of the county highway engineer and department heads is suggested to insure complete understanding of basic fiscal policies and the budget-making process.

Three forms are usually distributed to department heads for developing operating budget requests. The first should request a current organization chart of the department—a helpful visual aid for road commission staff and the board when reviewing budget requests.

The second is a personnel request form which provides space for: the number and types of positions authorized for the current year; the number filled as of a specified date; the cost of salaries for the filled positions; the number and types of positions requested; and, the cost of requested positions. e current year information should be entered on the form prior to distribution.

An appropriation request form is used to enter departmental expenditure requests for items grouped into various classifications. This form should provide comparative data on prior year and current year-to-date expenditures, current year appropriations, and requested appropriations for the ensuing fiscal year. The accounting division should enter on the form comparative data for prior year as well as current year-to-date expenditures and revised appropriation prior to distribution.

A budget restricted to objects of expenditure such as salaries, contracted services, materials, supplies and parts, and other measures of input, is of limited value if it fails to explain what the road commission intends to accomplish with its resources. Departmental budget requests should be accompanied by descriptions of departmental objectives, activities undertaken to achieve objectives, and measures of activities. For example, in the maintenance department, the grading of gravel roads is an activity measured by the actual miles of gravel roads graded. For the maintenance and traffic departments, departmental objectives, activities and activity measures should conform as closely as practicable to the "program budgets" prepared in conjunction with the Jorgensen maintenance system. Thorough budget analysis and development of road commission objectives demands that requests for increased appropriations to finance increased costs of existing services or new or additional services be fully explained by each department head with an indication of the impact on departmental programs and activities.

A review of budget preparation forms of the budget division, Oakland County board of auditors, indicates that these forms, subject to minor modification, would be appropriate for road commission use. Therefore, rather than having to "re-invent the wheel,"

It is recommended that budget preparation forms of the budget division, Oakland County board of auditors, subject to appropriate modification, be employed by the road commission for development of its operating budget.

Budget requests of the operating departments should be submitted to the county highway engineer for review and recommendation. The county highway engineer should also submit a recommended construction budget to the finance director, based on the construction program which is discussed elsewhere in the report. The completed budget requests for the operating and staff departments and for the construction program should be submitted to the finance director for tabulation and review. The finance director should analyze and evaluate the budget requests and submit them with his recommendations to the managing director.

The next step in the budget preparation process is the managing director's review of the budget. The managing director should conduct a series of hearings at which time each department head is given the opportunity to explain his budget request and its relationship to departmental objectives. The finance director should be present at all hearings. Departmental budget hearings are administrative in nature and should not be confused with the public budget hearings described elsewhere in this report.

Following the completion of departmental budget hearings the managing director should prepare statements of estimated income and of recommended appropriations for each department for submission to the board of road commissioners. The total of recommended appropriations for the operating and construction programs should not exceed estimated income. The managing director is responsible for the final step in the budget preparation phase—preparation of a letter of transmittal to accompany the recommended budget. Among other things, the letter of transmittal should cover: the general policy under which the budget was prepared; a summary of anticipated changes in the revenue structure; a review of major changes in types and levels of services; a summary that highlights significant changes in revenue and expenditures; and, a summary of recommended new positions and their costs.

Budget Consideration and Adoption

The budget is the principal tool for making road commission policy and the most effective control over administrators available to the board. Anything less than a thorough board study of the managing director's recommended budget is not only unwise, but an injustice to the administrators expected to operate within the confines of the budget and to the citizens of Oakland County.

Article VII, Section 32 of the Michigan constitution provides that:

Any county, township, city, village, authority or school district empowered by the legislature or by this constitution to prepare budgets of estimated expenditures and revenues shall adopt such budgets only after a public hearing in a manner prescribed by law.

There is some disagreement as to the nature of the relationship between road commissions and counties and whether the above constitutional provision applies to road commissions. Semantics notwithstanding, it is highly unlikely that the intent of the constitution is to exclude any agencies of local government from public budget hearing requirements. The purpose of such hearings is to give citizens access to the budget process so they may question, take issue with, or praise local government policies and programs. Granting such access

is one means by which local governments are made accountable to citizens for their use of public resources. A fruitful discussion of the recommended budget should increase citizen awareness of road commission operations and provide the board and administrators with a look at areas of citizen concern.

It is recommended that annual public hearings be conducted on the proposed budget by the board of road commissioners prior to the adoption thereof. It is further recommended that notice of the hearing be placed in a newspaper of general circulation in the county at least six days prior to the scheduled hearing. The notice should specify the date and location of the hearing, and the place or places where a copy of the proposed budget may be reviewed by the public

The public budget hearing should be chaired by the chairman of the board of road commissioners and attended by the managing director, county highway engineer, and all department heads. After the completion of public budget hearings and any revisions to the proposed budget, the board of road commissioners should by resolution adopt a budget and appropriate the monies therein at a regular meeting of the board. Adoption of the budget should take place at least two weeks prior to the start of the new fiscal year to allow time to set up beginning entries in the accounting system. The budget document should be printed in sufficient number to provide copies to road commission board and staff, Oakland County board of commissioners, and the press. Furthermore, it is good practice to keep copies of the budget document in the lobby of road commission headquarters and at public libraries for public inspection.

Budget Execution

Budget execution involves the application of fiscal controls to insure that administrative operations conform to board fiscal policy and that expenditures not exceed revenues. Without effective fiscal controls, the budget becomes a meaningless document.

It is recommended that the following fiscal controls be implemented to insure effective budget administration: appropriation accounting; recording of encumbrances; allotments for expenditures from appropriations; personnel position controls; and, periodic financial reports.

Appropriation Accounting. An appropriation is an authorization by the legislative body to expend a sum of money for a stated purpose. Appropriation accounting is the establishment of appropriation and allotment accounts to conform to a systematic breakdown of departmental objectives by departmental sub-unit and object of expenditure. For control purposes, budgetary appropriation accounts can be subdivided in greater detail than provided in the appropriation resolution. Appropriation accounting also requires the recording of all appropriation transfers supported by proper documentation of the authorization for the transfer.

Recording of Encumbrances. An encumbrance is an obligation in the form of a purchase order, contract, or other document indicating an obligation to be financed from an appropriation. Encumbrance accounting is a valuable fiscal control which helps provide an accurate record of financial obligations at any point. To

record an encumbrance means to reserve part of an appropriation to finance an incurred obligation. Encumbrances are generally restricted to non-salary items and are recorded by submitting purchase orders, contracts, and similar documents through the finance department before execution. The encumbrance should be recorded after determining that the relevant budgetary account contains a sufficient unencumbered appropriation to cover the amount of the obligation. It is customary for the finance director to authorize payment of an invoice after reviewing the report of goods received and the vendor invoice. After preparation of the voucher, the previously entered encumbrance should be cleared by entry of an expenditure in the amount of the invoice. When the board awards a contract for construction of a section of road, the entire contract amount should be encumbered.

Allotments. An allotment is a portion of an annual appropriation set aside to cover expenditures and encumbrances for a fixed period of time, usually monthly or quarterly. Quarterly allotments are more popular because of their greater flexibility and the smaller amount of paperwork required to administer the system. Properly applied, allotments may be used to: effect economies in particular operations; provide tight cash control to maximize investment of idle cash; and provide greater control over departmental expenditures to insure that expenditures not exceed actual revenues and thus help avoid year-end special appropriations. Because an allotment system involves additional paperwork, allotments should be restricted to those items for which significant expenditures are incurred—salaries, capital outlay including road equipment, materials, payments to contractors, etc. It should not be necessary to allot appropriations for objects which account for a small percentage of total expenditures—travel, stationery supplies, membership fees and dues, and publications. At the close of each allotment period, the unencumbered amount of each allotment should be impounded and the next quarter's allotment set up as an available balance. This procedure encourages careful programming of departmental activities and builds a reserve which can be reallocated to meet unanticipated necessities.

Personnel Position Controls. Since salaries usually account for the largest share of governmental costs, the road commission should take steps to insure that the number of persons on the payroll not exceed the number and types of positions authorized by the board in the budget. This is accomplished by requiring the submission of personnel requisitions to the finance director for his approval before vacancies are filled. When the finance director receives a requisition to fill a newly authorized position, he should ascertain whether the conditions responsible for creation of the new position continue to exist and advise the managing director.

Periodic Financial Reports. Financial reports provide the facts to determine an organization's financial position and may be used to indicate the extent to which administrative operations conform to fiscal policy as expressed in the budget. Board interest in the financial position of the road commission is of a broad nature. Therefore, financial reports produced for the board should be fewer in number and less detailed than those for administrative staff. Among the monthly reports the board should receive are: summary statement of receipts and disbursements for all funds; and, a summary statement of expenditures and encumbrances compared with appropriations.

Financial reports prepared for the managing director, county highway engineer, and department heads should provide a more detailed look at the road commission's financial position. Effective revenue adminis-

tration requires a comparative statement of monthly receipts showing for each source of revenue: the budget estimate for the fiscal period; current month estimate and actual amount received; year-to-date estimate and year-to-date actual amount; and, balance of budget estimate to be received. The monthly statement of expenditures and encumbrances compared with appropriations/allotments should show for each budgetary account: initial appropriation/allotment, appropriation transfers and revised appropriations; encumbrances and expenditures for the month; year-to-date encumbrances and expenditures; and, unencumbered appropriation/allotment balance. The importance of this report to road commission staff cannot be over emphasized. The statement of expenditures and encumbrances provides administrators with timely financial information on the status of their budgetary accounts which is essential if they are to be held responsible for insuring that expenditures not exceed budget appropriations. The managing director and the board should also receive monthly reports of cash position.

Revenue-Administration

The purpose of revenue administration is to collect all revenue to which the road commission is entitled and to monitor revenue receipts in relation to the budget estimates. The finance director should be responsible for overseeing the collection of revenues, for reviewing budget revenue estimates, and advising the managing director of any indicated changes in original estimates.

If actual revenues fall below budget estimates, the finance director should recommend to the managing director methods of reducing expenditures to bring them in line with the revised revenue estimates. Among the measures which the finance director may want to recommend are: cutbacks in services; delay of construction projects; impounding unencumbered allotments; postponing or rejecting purchase requisitions; prohibiting the filling of vacant positions; and, employee layoffs. Should revenue receipts exceed budget estimates, the managing director may want to recommend to the board a supplemental appropriation.

Independent Post-Audit

A post-audit is a year-end examination of financial transactions and accounting records to ascertain whether an organization's financial statements accurately present its financial position in accordance with generally accepted accounting principles. Accountability results from the impartial judgments required in auditing public officials' statements as to the manner in which public funds have been spent. Auditing can also help officials and administrators improve the efficiency and effectiveness of governmental operations by bringing to light deficient internal controls and cumbersome procedures. The legal basis for auditing Michigan governments is embodied in Article IX, Section 21 of the Michigan constitution: "The legislature shall provide by law for ... the auditing of county accounts by competent state authority and other units of government as provided by law."

From time to time the state highway department audits specific road commission projects such as the federal aid secondary program. The auditing of all road commission operations is the responsibility of the state treasury department, but it has not undertaken a complete audit of the road commission since 1961. It

would appear that the treasury department lacks sufficient staff to perform annual audits for each of Michigan's 83 counties and their respective boards and commissions. State legal responsibility for county audits notwithstanding, the relationship of the post-audit to insuring accountability is of sufficient importance for the board to require an annual, independent, post-audit of road commission operations.

It is recommended that the board of road commissioners have an annual, independent audit of road commission financial transactions and operations. If the state treasury department is not prepared to perform the audit, the board of road commissioners should engage an independent, certified public accountant to do so. It is further recommended that the audit be performed in accordance with procedures and standards established by the American Institute of Certified Public Accountants and provisions of Act 2 of 1968, as amended.

CHAPTER V

PERSONNEL ADMINISTRATION, COMPENSATION AND FRINGE BENEFITS

The board of road commissioners of Oakland County operates a personnel system that is separate and distinct from the system in operation for the rest of county government. The separation was formally recognized in 1966, when the voters approved a resolution to establish a merit system for Oakland County employees and to exclude road commission personnel from coverage. At present, the road commission employs about 550 full-time employees; other Oakland County governmental agencies employ a total of about 2,500 full-time plus several hundred part-time. It is, of course, not unusual in Michigan for road commission personnel to be set apart from general county government. There are state laws and court decisions which have provided road commission boards with a measure of autonomy in the conduct of business although the status of a road commission as a governmental entity has never been clearly defined by law.

While a personnel system covering all county government employees would offer the advantage of a unified approach, there are some practical problems that would be difficult to resolve. There should be, however, close coordination of the two systems and specific recommendations to this end will be made in the body of this report. General county government and the county road commission do, after all, serve the same citizen constituency and draw from generally the same job market area. Coordinated effort between the two public personnel systems would best serve the interest of the citizen and taxpayer.

Legal Framework for Personnel Operations

Personnel operations are substantially affected by the way in which the governmental unit is organized overall, and the way the personnel system has been designed to meet organizational needs.

The Overall Organization. The main feature of organization at the road commission is the central governing body, the three-member board of road commissioners who are appointed by the county board. State law specifies that:

“The board of county road commissioners shall act as an administrative board only and the function of the board shall be limited to the formulation of policy and the performance of official duties imposed by law and delegated by the board of supervisors, (Sec. 9.109 MSA)

Until recently, the Oakland County board of road commissioners was considered to be a full-time body and the board operated in the manner of the commission form of city government with each commissioner assigned to oversee a particular function or group of functions. The plural executive organization splinters executive authority and in an organization like the road commission fosters a difficult mix of administrative and legislative duties. Now that the board of road commissioners has become a part-time body, its involvement in administrative matters may lessen.

Past habits of operation have prevented the board of road commissioners from making a clear distinction between personnel policy and personnel administration. It has been customary for one member of the road commission to participate in the administration of personnel matters. For example, his signature is required on a payroll form effectuating a change in personnel status (hiring, discharges, etc.). With such involvement in administrative matters, there is a natural tendency to develop policy on a piecemeal basis taking care of each contingency as it arises. Board minutes are more significant from the standpoint of what is off-the-record rather than what is recorded as direct action on personnel policy. This involvement of the board in administrative matters is probably the main reason why broad policy guidelines have not been formally adopted to design a personnel program and to provide for the appropriate delegation of administrative responsibilities.

It is recommended that the board of road commissioners act as a unit in personnel matters and that the delegation of any board personnel function or power to an individual board member be discontinued.

This recommendation follows the requirement of state law that the board of county road commissioners shall act only as a board.

It is further recommended that the board of county road commissioners restrict its activities with respect to personnel matters to the establishment of basic personnel policy. The board should assign responsibility for personnel management to appropriate administrative officials.

This recommendation is in accord with the statutory provision that the function of the board shall be limited to the formulation of policy.

At the present time, policies governing the operation and development of the personnel program are derived primarily from the following sources: (1) provisions set forth in the two collective bargaining contracts, (2) a compilation of board and administrative policies relating primarily to fringe benefits and working conditions for employees who are not unionized (set forth in an employees' manual) and, (3) provisions of the general fund budget for 1974, which fix the number of positions subject to employment contracts and the level of compensation authorized by the board.

Most of the personnel policies adopted by the board are limited in purpose and relate for the most part to providing benefits and services to employees. A public personnel program should be more broadly conceived to assure organizational direction so that objectives can be achieved and the public served. Unless the fundamentals for the operation of a public personnel system are clearly set forth, personnel operations cannot easily be maintained as a unified, orderly, rational system. While the Oakland road commission has a personnel department, the department was not established by the enactment of a resolution creating a department, defining the power and duties of a personnel director, and setting forth broad policies governing the operation of a personnel program. Rather, the personnel department began to evolve about 1965 when some personnel functions were split off from the clerk's office and reassigned to other employees. Even today, the clerk's office administers some important aspects of the personnel program—administration of sick leave and vacation leave policies, processing workmen's compensation claims, verifying payrolls, maintaining various kinds of personnel records, etc.

It is probably not a coincidence that the organization of a personnel department proceeded about the same time that collective bargaining began. At the present time, the personnel department is closely involved in matters relating to employee relations and contract administration. It is suggested that the board of road commissioners give serious consideration to the form and structure of the personnel system.

Types of Personnel Systems

Personnel systems are generally characterized as being either a patronage or a merit form depending upon the basis on which individuals are selected, retained and promoted in the public service. The outright patronage system (where political or personal favoritism is the main consideration) has largely fallen into disuse. This method has not proven to be an effective way to secure the best available talent for the job and it operates to restrict public access to public jobs.

The personnel system at the Oakland County road commission has incorporated some merit principles in its operations. For example, promotion of hourly workers is to be based on qualifications as well as seniority, a matter that was finally settled in arbitration proceedings. Also, step increases provided for in the classification plan are granted on the basis of performance evaluation. But there are other aspects of the system that do not carry out the intent of a personnel program based on merit. There are few objective standards to measure ability in the selection of a new employee and competitive examinations are not administered in the selection process. Also, the present recruitment practices appear to be rather narrowly based. There is, for example, no requirement for advertising job vacancies in a newspaper having county-wide circulation.

The adoption of a merit program as a matter of public policy would help to clarify the system as it now exists so that one part of the program does not operate in contradiction with another part. It should be clearly recognized that in adopting merit as a guiding principle for the selection, promotion and retention of employees, the board of road commissioners would not be committing itself to a particular organizational structure such as a civil service system. The merit system can be adapted to a wide variety of administrative organizations. It should also be noted that the merit system does not contravene existing collective bargaining agreements which clearly state that, "The Union recognizes the Employer's right to manage its affairs and direct its work force, which involves the right to hire, promote, discharge or discipline, and to maintain discipline and efficiency of employees...." (Section 41, paragraph (a) of the agreement with Local No. 92, 1972-75.)

It is recommended that the Oakland County board of road commissioners adopt the merit principle as a matter of public policy to serve as a guiding principle in the administration of the personnel program at the road commission.

The following provides one illustration of such a public policy statement. It is adapted from "Guidelines for Drafting a Public Personnel Administration Law" by International Personnel Management Association, 1973, p. 26-27:

It is the purpose of this Resolution to provide a modern and comprehensive system of personnel administration for the Oakland County Road Commission whereby economy and effectiveness in the personal services rendered to the Oakland County Road Commission,

and fairness and equity to the employees and the citizens of Oakland County may be promoted. To accomplish this end the provisions of this Resolution shall be liberally construed. The following principles and policies shall be observed as basic requirements:

All appointments and promotions to positions in the service of the Oakland County Road Commission and all measures for the control and regulation of employment in such positions, and separation therefrom, shall be on the sole basis of merit and fitness, which, so far as practicable, shall be ascertained by means of competitive examinations, service ratings, or other objective measures of qualification.

Fair and equitable rates of pay shall be provided with due consideration of both the employees and the public and with due observance of the principle of equivalent pay for equivalent work, and suitable differences in pay for differences in work.

The public service, so far as practicable, shall be made attractive as a career, and employees shall be encouraged to render their best service to the public in return for which recognition shall be provided.

It is suggested that the merit system apply to all employees of the board of road commissioners except the managing director and the clerk of the board.

A merit system would provide for objective standards in the administration of all personnel transactions including recruitment, selection, transfer, promotion and discharge. It would facilitate the administration of a classification plan which defines jobs in terms of work and skills and a compensation plan which correlates pay to the classification plan in accordance with the level of skills and responsibilities.

Recruitment. Under a merit system, opportunity to apply for a job is extended to all interested and qualified citizens. Adequate publicity about job openings provides assurance that there is open opportunity. Many governments have a requirement for public advertising. The Oakland County merit system, for example, requires:

“That examinations shall be publicly announced at least seven calendar days in advance of the last date for filing applications by means of an announcement posted on the official bulletin board in the County Personnel Office, by advertisement in the two County published newspapers with the largest County circulation and by such other means as the Personnel Director shall deem appropriate.”

It is recommended that the board of road commissioners provide for adequate publicity of job openings including publication of notices in a newspaper having county-wide circulation.

Selection. A merit system would require that qualifications be fixed for each class of position, and that appropriate measures of qualification be developed for screening applicants for the respective positions. Selection is made from a list of candidates who have been ranked in accordance with an evaluation of their relative ability and fitness for the job. The standards for such evaluation should be realistically job-related and fairly applied. Measurement of fitness and ability could include a written test, performance test, evaluation of experience, training, education, etc.

The development and administration of testing is generally considered to be of a technical nature, often requiring a personnel staff of sufficient size to afford a degree of specialization. Where there is not sufficient work to justify specialization, smaller units of government may contract for such testing services as needed.

It is recommended that the board of road commissioners explore the feasibility of contracting for such testing services as needed from Oakland County.

Transfers and Promotions. A merit system emphasizes appropriate placement of employees and seeks to match individual abilities and interests with jobs. Good placement assures effective job performance as well as job satisfaction.

A transfer moves an employee horizontally from one division to another without a change in the class of position and can be effected without too much difficulty. But a promotion is a more involved placement process because an employee is being moved to a position in a higher class where duties and responsibilities are of a higher order and require additional qualifications.

Salaried Employees. At the road commission, salaried employees are advanced through step increases granted as a result of periodic evaluation of performance. While a step increase allows an increase in pay, it is not the same as a promotion because the employee continues to occupy the same position class with the same duties and responsibilities. A promotion does occur when an employee advances, for example, from an Engineer Aide I to an Engineer Aide II position. When a vacancy to be filled by promotion occurs, it would be desirable to have an established procedure by which candidates are recruited, screened and selected for the position. Promotional examinations should be posted so that all qualified employees can apply. A promotional policy usually provides for successful completion of a probation period.

It is recommended that a promotional policy for salaried employees be incorporated into the personnel rules and regulations.

Hourly Employees. The emphasis upon seniority in the hourly contract and the procedures used to fill a vacancy appear to impede rather than facilitate the progressive advancement of skilled employees. The personnel department posts a notice in each district of vacancies that occur in the hourly employees category as called for in the labor contract. Any hourly employee in any district may "bid" upon a posted vacancy. The employee with the greatest amount of seniority "and who is qualified" is granted a four-week trial period. Since there is at present no test for qualification (the trial period apparently being the test), the selection is made on a seniority basis for all practical purposes. To assume that no prior training or experience is necessary for any of the hourly paid jobs is not realistic especially in the skilled trades such as electrician and mechanic II.

It is recommended that the road commission authorize the personnel director to consult with appropriate officials and develop standards for determining qualifications for granting the four-week trial period in conformity with the union contract.

The equipment instructor, an office in the maintenance department, has the responsibility for administering the provisions relating to the trial period. The extensive use of the trial period (there may be as many as 15 employees on trial period at one time) means that the equipment instructor must spend as much as 75 percent of his time handling such matters. Decisions as to the acceptable performance of the candidate on trial period are made by the district superintendent conferring with the equipment instructor.

The employee who is granted a trial period may terminate it at will, but the employer must give cause for termination. Since the employee is paid at the prevailing pay rate for the job that he is trying out for, and since he may return to his former classification if he chooses, there is no guarantee of his serious intent. For example, a vacancy of loader operator in District No. 2 was posted April 22, 1974. Eighteen applications were filed, some of which were subsequently withdrawn. More than two months later, July 1, the job was still unfilled. Five people had tried out and quit during the trial period including one person who terminated after only one day on the job.

In this instance, the bidding process resulted in a delay of two months in finding an employee willing and able to perform the job and also the job disruption of having five employees try out and quit. It is essential that management develop more effective screening techniques for the filling of vacancies. While it is desirable to extend opportunities for promotion from within the service, the option to recruit from outside should be available in instances where there is difficulty in finding an able and willing employee to take on the job.

The trial period itself lasts only 28 calendar days including days not worked on weekends. If the employee is trying out on a specialized piece of equipment, the scheduling of work may be such that he may be called upon to operate the equipment for only a few days. This is not a reasonable period of time to determine adequacy of performance. A new employee is required to serve a probation period of six months, why shouldn't the trial period be for the same length of time? There would seem to be no reason to make the trial period of shorter duration than the probationary serves. The employee receives the salary for the higher position during the trial period.

It is recommended that the board of road commissioners establish a six-month trial period rather than the present 28-day trial period.

The way in which vacancies are filled at the road commission does not give adequate recognition to those employees who have proven qualifications. For example, if a vacancy occurred as a loader operator, the trial period could be granted to an employee classified as laborer II if he had higher seniority than an employee who is or has been a loader operator with proven qualifications. It would seem to be a matter of common sense to give first priority to employees who are already qualified for the position rather than opening it up to those without proven qualifications and necessitating a trial period, on-the-job training, etc.

It is recommended that in filling vacancies, first priority be given to employees who wish to transfer and who possess the qualifications for the job.

All employees should be given a chance to develop and acquire new skills and thereby become eligible for advancement through promotion to a higher classification. Encouragement can be given through in-service training programs as well as on-the-job training. If the trial period can be shaped into a more efficient and effective operation, management could devote more time to positive employee training programs.

Personnel Organization and Its Relationship to Management

An important question to be decided is how the personnel function should be related to the executive officer. Today, the prevalent thought seems to favor an organization which closely ties the personnel function to the management function. This represents a change from an earlier belief that the personnel unit should be set up with a degree of independent authority. One of the reasons for the change in thought is the recognition that executive direction is a key factor in providing leadership to encourage responsive and efficient operations. Personnel management is one of the basic means available to the executive for meeting his responsibilities.

Another reason is that collective bargaining has required a re-examination of the effectiveness of an independent personnel organization. It is essential to the bargaining process that top management working under the guidance of the governing body be represented by a unified voice.

At the present time, the personnel director is appointed directly by the board of road commissioners. The commissioners should give consideration to changes aimed at bringing the personnel function more sharply into focus as an arm of the managing director subject to the overall policy of the board.

It is recommended that the board of road commissioners provide that the personnel director be appointed by the managing director subject to the provisions of the merit system.

The Oakland County road commission has operated without the benefit of a formal mechanism for citizen input into the personnel system. When a public personnel system becomes too far removed from the citizenry, there is a danger of the development of parochial characteristics. It is believed that there is a need for a broader perspective than is afforded under the present system. A citizens advisory personnel board could serve as a useful sounding board for the managing director and personnel director in personnel administration and for the board of road commissioners in adoption of policies.

It is recommended that the board of road commissioners establish by resolution, a citizens advisory personnel board composed of five citizens appointed by the board of road commissioners for five-year overlapping terms of office. No more than three members of the personnel board shall be of one political party. The board shall elect one of its members as chairman, and the personnel director shall serve ex-officio as secretary. The citizens advisory personnel board would have no administrative or policymaking functions or powers but would:

- (1) represent the public interest in the improvement of personnel administration;
- (2) advise the personnel director and managing director on problems concerning personnel administration;
- (3) advise the personnel director and the managing director on personnel rules and regulations and matters relating to the classification and compensation plan; and,

- (4) prepare and submit to the board of road commissioners at least annually a report on the status of the merit system.

It should be clear that the citizens advisory personnel board is not a policy-making body. Rather, advisory board proposals should be presented to the board of road commissioners by the managing director in a formal report which would identify the problem or proposal and include the essential facts of the situation as well as recommendations of the personnel director and managing director. This procedure would fix responsibility where it belongs and provide a clear line of authority.

Powers and Duties of the Personnel Director

The powers and duties of the personnel director should be specified by resolution by the board of road commissioners. The following general description of the duties of the personnel director is considered appropriate for the type of organization that exists at the Oakland County road commission.

It is recommended that the Oakland County board of road commissioners specify by resolution the duties of the personnel director as follows:

It shall be the duty of the personnel director to:

1. Encourage and exercise leadership in the development of effective personnel administration within the road commission.
2. Advise the managing director on manpower utilization.
3. Foster and develop programs for the improvement of employee effectiveness, including training, safety, health, counseling and welfare.
4. Provide for the administration of the merit system and the direction of the personnel department.
5. Make an annual report to the managing director regarding the work of the department.
6. Consult with the citizens advisory personnel board for advice in matters relating to personnel administration.

The Personnel Department

The personnel department is composed of five employees: a personnel director, a personnel technician, two stenographers (one of whom is shared with the engineering department) and a safety director.

The primary purpose of a personnel department is to facilitate the operations of the respective agencies who are delivering direct services to the public. Much of the personnel work in any organization must be done by the heads of the several departments and agencies because they are directly involved with employees.

Their proximity to the situation, their knowledge and experience with needs and problems, and their responsibility to provide leadership and supervision, places the department head in a key role. Personnel procedures are provided so that personnel actions initiated by the department heads such as filling vacancies, transfers, promotions, disciplinary actions can be consummated. The department head also stands as the originating source for such important administrative matters as authorization of pay, the administration of overtime, the supervision of sick leave and other leave, the scheduling of vacation, etc. The ease with which these things can be accomplished is facilitated by the operation of a system that applies with equity and fairness to all employees.

Rules and Regulations. Rules and regulations are necessary to implement the broad policies established by the board of road commissioners. An example of the need for implementing rules may be illustrated in the matter of holidays. The board provides for the broad policy designating certain days as holidays, the provisions of which may be set out by separate board resolution and by contract agreement. It is also necessary to specify the terms of compensation for holiday work, relationship of the holiday pay to other fringe benefits, the practice when a holiday falls on a Saturday or Sunday, etc. Some of these details may be specified by personnel rule rather than by board action.

At the present time, the board of county road commissioners has not provided a formal system for the establishment of personnel rules and regulations. For example, there appears to be no formal means by which a classification plan is established and revised. Indirectly, the board has given approval to the classification plan by the approval of the compensation plan which is based on the classification plan. Nevertheless, it is not appropriate to leave the matter open to the extent that a classification plan which is prepared and administered by the personnel director is left dangling without a further process for its authentication.

As the policy-making body, the board of road commissioners should establish a process and designate an authority for making personnel rules and regulations.

It is recommended that the board of county road commissioners provide for the following procedures in the establishment of personnel rules and regulations:

1. That the personnel director be responsible for the preparation and development of proposed rules and regulations.
2. That after review, the managing director shall promulgate proposed rules and regulations and submit them to the board of road commissioners.
3. That all personnel rules and regulations shall become effective ten days after submission to a meeting of the county board of road commissioners providing that the board has not disapproved.
4. That any proposed rule or-regulation that has been disapproved shall be returned to the managing director for further consideration.

These procedures recognize that rules and regulations are derived explicitly or implicitly from a policy or an authorization of the county board of road commissioners and therefore it is not necessary to require the board to approve each rule prior to taking effect.

At the present time, there is no comprehensive compilation of all personnel policies and all rules and regulations pertaining thereto. Some policies are explained in the Manual for Administrative Employees, revised February, 1973. other policies are found in the collective bargaining contracts for hourly employees and the foreman. All policies, rules and regulations should be available in one source document and should cover all segments of the personnel system.

It is recommended that the personnel director prepare a compilation of personnel policies and personnel rules; that such a manual be comprehensive of provisions relating to all personnel including salaried and hourly employees.

Rules and regulations are frequently subject to changes in procedures and therefore amendments are needed if they are to retain their relevance. The general practice of maintaining a book of policies, rules and regulations in loose-leaf form (such as Oakland County merit system rules) affords a convenient method for keeping the book up-to-date.

It is recommended that the personnel director develop a method for maintaining the book of personnel policies, rules and regulations in an up-to-date form.

The compilation of a comprehensive book of rules and regulations can prove to be very helpful. It can serve as a guide for administrators on current policies. It can point up differing provisions or the absence of provisions relating to a group of employees. It can serve as a framework for management operating procedures into which can be fitted the various provisions in the labor contracts, rather than the other way around.

Procedures Manual. one of the main missions of a personnel department is to make policy and procedures known and understood by everyone in the organization. One of the most useful ways to accomplish this is to issue a procedures manual to serve as a guide to department heads, supervisors and interested employees. The manual should provide clear and specific instructions concerning the proper steps to be followed in handling and accomplishing personnel transactions such as personnel requisitions, appointments, layoffs, vacation leave, sick leave and other leaves of absence, transfers, promotions, etc. Sample copies of forms to be used should be included. Pertinent extracts from resolutions passed by the board of road commissioners, and rules and regulations and current provisions from collective bargaining contracts should be incorporated to clarify the necessity for following the prescribed procedure.

The existing office procedures manual now used by the personnel office should be expanded to fill the need.

It is recommended that the personnel director provide for a procedures manual appropriately designed for use by department heads and other administrators to effect personnel transactions and that the manual be maintained on a current basis.

Forms. In the past year, a number of changes have taken place at the Oakland County road commission. The establishment of the position of managing director, the installation of a new budgetary system in 1974, and the organization of a finance department as recommended in this report will involve some changes in procedure, and the personnel forms should be changed accordingly.

It is recommended that the personnel director review all current personnel forms that are in use and propose to the managing director revised forms that will conform with the current organization budgetary procedures and personnel rules and regulations.

Personnel forms serve to expedite personnel transactions in accordance with established policy and procedure. At the present time, some of the forms do not adequately recognize distinctions in the types of personnel transactions such as a transfer and a promotion. For example, the "application for job transfer" form for hourly employees is actually used as an application for a trial period preliminary to promotion to a new job classification. This is a distinct transaction and is different from the routine transfer of a qualified grader operator from one district to another.

Two forms of particular importance to personnel and budget control processes are the personnel requisition form and the payroll authorization form. The personnel requisition form represents an administrative procedure initiated by the department head to fill a vacancy that has occurred or will occur in the immediate future. The form should be used for all vacancies and the department head should explain the cause for the vacancy, provide the name of the last incumbent, and specify the need for filling the position. The personnel requisition form should then be forwarded to the personnel director who reviews it to verify whether or not there is such a position in the classification plan and if the position is vacant. The form should then go to the director of finance who verifies whether or not there is an appropriation to finance such a position. If the requisition is not an authorized position in the budget, any further processing must await action by the governing board in case the board wishes to amend the budget. If the personnel requisition is in order after review by the respective offices of personnel, budget and the managing director, the way is clear to process the transaction through established personnel procedures. In case of a new hire, applicants may be screened and selected, or in case of a transfer or promotion, recommendations from appointing authorities may be received, a trial period instituted, etc.

It is recommended that the personnel director in consultation with the director of finance redesign a requisition form providing for orderly processing of personnel requisitions from department heads with appropriate review by personnel, budget and the managing director.

The payroll authorization form represents the final step in the completion of a personnel transaction. It is used to give official notice to the payroll office of a change for payroll processing purposes. At Oakland County road commission, the payroll authorization form should originate with the personnel department. It should be signed by the personnel director whose duty is to certify that it is in conformity with the classification and compensation plans and rules. At this final stage, the payroll authorization form is a routine process and does not require any further signatures.

In the past, OCRC Form No. 36A has been used to serve many purposes including payroll authorization. It should be revised to conform to the orderly processing of information from the personnel department to the payroll office. The personnel requisition form recommended previously eliminates the necessity of routing the payroll authorization form to the department head, the superintendent, the engineer-manager, and a commissioner for the purpose of securing signatures. The payroll authorization should also be revised to provide for the reporting of all types of changes including promotions, reclassifications, suspensions, leaves of absence (other than military), etc. that have a bearing upon payroll processing.

It is recommended that the personnel director in consultation with the director of finance provide for a revised payroll authorization form which will serve the requirements for payroll preparation and processing.

Integration of Personnel Services

A close relationship should exist between the personnel and the finance agencies because each is involved with processes that interface such as payroll processing, timekeeping, the development of pay policy and the administration of fringe benefits.

At the Oakland County road commission, the clerk's office has traditionally handled many matters relating to finance, personnel and record keeping. After the establishment of the personnel department, the clerk's office has continued to be responsible for such services as certifying payrolls and keeping records on attendance and matters relating to compensation, such as sick and vacation leave, overtime, etc. Thus, the personnel department has not had to develop a full complement of services particularly in the record keeping area.

It is believed that those activities relating to timekeeping and payroll processing should be retained as a unified unit of the agency responsible for finance. However, the personnel director should have access to information derived from timekeeping and payroll so that the personnel department can make periodic analysis of such matters, such as use of overtime, the use of sick and personal leave, vacation leave, etc. To the extent that these records are programmed on data processing, ready access to current data would be available.

It is recommended that the personnel director identify operating data that he requires to exercise oversight over the personnel program; and that he submit a report to the managing director which specifies information needs, and use.

There are other personnel matters that do not relate strictly to payroll processing and timekeeping that have been administered by the clerk's office instead of the personnel office. It is not desirable to have functions fragmented to the extent that confusion arises as to who is responsible for administration. An example of fragmentation relates to the provision of extended sick leave for employees who have exhausted their sick leave bank and may be eligible to receive \$80 per week for a specified length of time. The actual authorization of extended sick leave is by approval of the clerk rather than the personnel director who should be the authorizing agent for all sick leave provisions. Another example relates to workmen's compensation claims for injuries on the jobs. The clerk's office keeps records on these and processes workmen's compensation

claims. A safety director who is attached to the personnel department is responsible for investigating injuries on-the-job. But who (the clerk or the personnel director) is responsible for approving an employee returning to work after an injury? The Hillside Medical Center, an industrial medical clinic with whom the road commission contracts for physical examinations, should be clearly advised to report results to the proper official, who has authority to decide whether or not the worker has sufficiently recovered to return to the job. It is believed that the approval of a release to return to work falls under the scope of the responsibility of the personnel director and therefore should require his approval.

It is recommended that the personnel director be designated as the proper authority to approve the application of ALL sick leave provisions including extended sick leave and injury-on-the-job cases including the approval of return to work releases.

It is further recommended that administrative responsibility for employee insurance benefit programs including medical and hospital insurance and group life insurance be lodged with the personnel department.

It is recommended that one and one-half clerical positions which are currently involved in these activities be transferred from the clerk's office to the personnel department.

The purpose of these recommendations is to provide for close co-operation between personnel and finance administration on matters of mutual concern; and to unify administrative responsibilities on personnel matters under the personnel department.

Classification Plan

A classification plan is as basic a tool to personnel administration as a budget is to financial administration. It facilitates the establishment of realistic job-related requirements for the hiring, utilization and promotion of employees, the establishment of a compensation plan, manpower planning and the improvement of efficiency. A sound classification plan provides the basis for an assurance of equal pay for equal work. In operation, a classification plan provides a way to determine what tasks are performed and to identify and classify jobs according to duties and skills required.

The Oakland County road commission has a classification plan which covers 548 positions authorized by the 1974 operating budget. An analysis of the present classification plan indicates that there are some serious deficiencies and underlying problems. The most serious problem is that there is a proliferation of one position classes. Out of 67 class titles in the salaried category, 46 of them, or 69 percent, are established on a one-person position basis. Or to put it in the reverse, only 21 class titles consist of more than one position to the class. This is getting very close to representing each individual employee as a class of positions. This situation is further aggravated by the fact that classes of positions are not grouped in a series, according to occupations. Hence, each class stands alone with little semblance of any logical relationship among them.

Single employee position classes usually occur because the position and its incumbent were not properly differentiated in the classification process. Single position classes, when unnecessary, foster inefficient operation because of excess rigidity in duties that may be performed.

In the hourly rated category of employees, the tendency toward one-person positions is not so extreme although there are 16 one-person class titles out of a total of 51 class titles. Class titles appear to be very narrowly defined, and there is a tendency to define a class of positions in terms of a specific kind of equipment used.

Table 1 shows the number of employees per class title.

Table 1
Oakland County Road Commission
Number of Employees Per Class Title, Fiscal 1974

<u>Number of Employees Assigned</u>	<u>Number of Different Class Titles</u>		
	<u>Salaried</u>	<u>Hourly</u>	<u>Total</u>
0 person class title	3	12	15
1 person class title	46	16	62
2 person class title	1	3	4
3 person class title	3	2	5
4 person class title	2	3	5
5 person class title	3	—	3
7 person class title	—	1	1
8 person class title	1	—	1
9 person class title	1	1	2
11 person class title	1	2	3
12 person class title	1	—	1
13 person class title	—	1	1
14 person class title	1	1	2
16 person class title	1	—	1
17 person class title	—	2	2
20 person class title	1	1	2
21 person class title	—	1	1
22 person class title	—	1	1
25 person class title	—	1	1
26 person class title	—	1	1
28 person class title	1	1	2
31 person class title	1	—	1
38 person class title	—	1	1
TOTAL	67	51	118
1974 Budgeted Positions	229	319	548

An entirely different approach is found in the category of Engineer Aide I, II, III and IV that embraces 96 positions distributed among four departments as shown in Table 2 below.

Table 2
Engineer Aides

<u>Class</u>	<u>No. of Positions in Class</u>	<u>No. of Depts. Having This Class</u>	<u>Eng.</u>	<u>No. of Positions by Dept.</u>		
				<u>Traffic</u>	<u>Permits</u>	<u>Maint.</u>
Eng. Aide I	12	2	11	—	1	—
Eng. Aide II	31	4	23	4	3	1
Eng. Aide III	28	3	24	2	2	—
Eng. Aide III Spec.	14	3	8	—	5	1
Eng. Aide IV	<u>11</u>	3	<u>8</u>	<u>1</u>	<u>2</u>	<u>—</u>
TOTAL	96		74	7	13	2

The backbone of a sound classification plan lies in the detailed documentation of facts describing each job, a systematic grouping of jobs with similar duties and responsibilities requiring similar skills and experience and training into classes of positions, and the drafting of descriptions of these classes of positions commonly called class specification. A full set of specifications covering all positions at the road commission does not exist. It is believed that a complete classification plan is necessary for good personnel administration.

It is recommended that the board of road commissioners authorize the development of a new classification plan.

If a classification survey is undertaken, the board of road commissioners would have to make a decision as to who would undertake the project. It is believed that the survey and the development of a classification plan should be contracted to an outside firm because the personnel department does not have sufficient staff to undertake the project unless it were done on a protracted basis. By engaging a consultant, the board of road commissioners would be securing technical expertise. Also, an outside resource would enable an approach without pre-conceived notions. The board of road commissioners can also expect to receive some spin-off benefits in other areas from a more thorough knowledge of operations.

It is recommended that the board of road commissioners contract with an outside authority for the classification project.

Full participation of employees and close coordination with the personnel department is essential since the process would result in a proposal for a new classification plan. The proposed plan should be reviewed and adopted by the board of road commissioners.

Once a new classification plan is adopted, it is recommended that the personnel department be responsible for maintaining the plan to reflect organizational changes and changes in work assignments.

Compensation

The cost of salaries and fringe benefits amounts to about 60 percent of the 1974 budget (operating budget \$16.4 million, salaries \$7.7 million and fringe benefits \$2.0 million). Fringe benefits include longevity payments, social security, hospital and medical insurance, retirement, life insurance and workmen's compensation. As shown in Table 3 below, fringe benefits amount to about 21 percent of total compensation.

Table 3
1974 Budgeted Salary and Fringe Benefits

		<u>Percent of Total</u>
Salaries	\$6,810,590	
Plus cost of living adjustment est.	136,682	
Plus overtime appropriated	647,300	
Seasonal workers	<u>147,000</u>	
Subtotal	\$7,741,572	79.2%
Fringe Benefits		
Longevity	\$256,812	
Social Security	416,102	
Hospital & Medical Insurance	380,250	
Retirement	831,794	
Life Insurance	26,940	
Workmen's Compensation	<u>117,391</u>	
Subtotal	<u>\$2,029,289</u>	20.8%
TOTAL	<u>\$9,770,861</u>	100.0%

Based on the budgeted authorization of 548 positions for 1974, employees receive an average of \$14,127 in salary plus \$3,703 in fringe benefits for a total average compensation of \$17,830. In the absence of a complete road commission classification plan, it is impossible to compare road commission salaries with those of other jurisdictions. There is some evidence that the levels of compensation for some classes of positions at the road commission may be generally above the level of other governmental units in the area. The Salary Survey Report, October, 1973, prepared by the personnel division, Oakland County board of auditors, shows as much as \$1,000 differential in salary for some clerical classes. This differential is also reflected in the April, 1974, clerical salary schedules for the two jurisdictions. The minimum and maximum salary for a Typist I at the Oakland County road commission is \$7,520 and \$7,855 compared with \$6,300 and \$6,700 for Oakland County general government. The minimum and maximum salary for Typist II at the road commission is \$7,951 to \$9,087 compared with \$7,100 to \$8,300 for Oakland County general government. A comparison of road commission and state highway department compensation schedules for technical and professional classes of employees prompts the observation that entry level positions tend to be higher than the state. The entry level for the state highway department is an 03 class and includes engineer aide, rodman, etc., with \$7,558 minimum and \$8,707 maximum after two years compared with the engineer aide I class at the Oakland County road commission with \$9,870 minimum and maximum \$10,766 after two years.

It is recommended that the classification study be accompanied by the development of a compensation plan for road commission employees.

Cost of Living Adjustment

The Oakland County road commission provides for a quarterly cost of living adjustment of salary rates. The amount of cost of living allowance is determined on the basis of changes in the consumer price index (all cities). For hourly employees, a one cent adjustment in the hourly rate is made for each 0.4 point change in the index; and for salaried employees a \$25 adjustment on the annual salary rate for each 0.4 point change. The 1974 cost of living adjustment is estimated at about \$137,000. In the four quarters of 1973, cost of living adjustments increased salary rates by a flat amount totaling \$725 as shown below:

March 11, 1973	\$100
June 17, 1973	200
September 9, 1973	150
December 2, 1973	<u>275</u>
	\$725

The effects of this flat rate cost of living adjustment on a progressive pay schedule are well known. The Oakland County board of road commissioners took the leveling effect of the cost of living adjustment into consideration in setting the salaries for the 1974 year. It should be understood that in attempting to keep up with inflation at its present dimensions when revenues are increasing at a glower rate, the board will be confronted with the necessity to increase the level of productivity or reduce the level of services.

Longevity Pay

The Oakland County road commission has a generous longevity pay plan. Longevity pay increases budgeted for 1974 total about \$257,000.

All employees including salaried employees and hourly workers covered in the labor contract are eligible to participate in the longevity pay program. Employees become eligible for longevity pay on the seventh anniversary of the date of employment at the following rates:

<u>Years of Service</u>	<u>Percent of Gross Pay</u>
7 to 10 years	2%
10 to 13 years	4
13 to 16 years	6
16 to 19 years	8
19 years or more	10

There appears to be no definition of the pay base that longevity rates are to be applied against. The contract for hourly workers simply states that longevity pay will be paid to hourly employees according to the schedule based on the years of service as an employee of the Oakland County road commission.

For some reason that defies logic, longevity pay has been interpreted to apply to gross cash pay rather than the employee's going rate of pay for his class. There are a number of employees at the road commission who have accumulated as much as \$6,000 a year in overtime pay. Such employees may not only receive time-and-one-half for overtime plus but also an extra bonus for longevity. This could amount to a bonus of \$600 at the maximum rate.

When longevity rates are as high as six, eight and ten percent of gross pay, instances may arise where a subordinate can receive a higher rate of pay than his supervisor. For example, the ten percent maximum rate applied to a \$14,000 position boosts the pay level to \$15,400. The longevity increase of \$1,400 generally exceeds the amount provided in step increases provided for a class of positions and salary intervals existing between related classes of positions. In 1973, about 44 percent of salaried employees and 38 percent of hourly employees were eligible for longevity payments. Roughly 100 employees received over \$1,000 in longevity pay in 1973, and another 100 received between \$500 and \$1,000.

Because longevity provides for substantial increases, considerable importance has been attached to the method of calculation. Contract provisions specify that it is to be figured in the following manner:

“C. During the first year of eligibility for longevity pay, the time used for computing the amount of longevity pay will be pro-rated from the employee's anniversary date to September 30th of the year the longevity is to be paid.”

“D. At succeeding higher levels of longevity, the percentage for longevity pay will be pro-rated for the first year of the percentage change, between the former percent prior to the anniversary date, and the new percent after the anniversary date to September 30 of the year the longevity is to be paid.”

The following examples illustrate the way longevity pay is calculated. Assume that Mr. Madison was employed on July 1 seven years ago. On July 1st of his seventh anniversary, he becomes eligible for two percent longevity for gross pay received for working days falling between July 1 and September 30. If Mr. Madison earned about \$800 per month for these three months, his longevity payment in December of that year would come to about \$48. When Mr. Madison has reached his tenth year of employment July 1, 1977, he becomes eligible for an increased rate of four percent thereafter. His longevity pay is calculated as follows:

2% x gross pay for working days from October 1, 1976, to June 30, 1977

4% x gross pay for working days from July 1, 1977, to September 30, 1977

A further complication is that there are two different payment procedures in effect—one for hourly employees and one for salaried. Hourly employees and the salaried foreman receive the longevity payment as a lump sum by separate check in the December pay period. Longevity pay for salaried employees is distributed in the check for each pay period and calculated at the employee's current effective longevity rate.

The cost of administering such a complicated and unwieldy longevity program should not be overlooked. There is the problem of the unpredictability of costs when salaries are adjusted four times a year for cost of living, and then longevity is applied on gross pay which includes such variables as cost of living, overtime

and holiday pay, shift differential, etc. In addition, 548 anniversary dates are used to determine an effective rate. Then for hourly employees there is the involved procedure of pro-rating the rate to September 30.

A suggestion might be to computerize the whole thing but the question should be asked—why put an irrationality on the computer? It might also be noted that while an employee really ought to know what pay he is entitled to, the longevity pay plan would certainly represent quite a challenge.

The original purpose of longevity pay was to take care of a specific problem—the employee who had reached the maximum step in his salary class and had no other recourse for a pay increase. Today, longevity pay is frequently regarded simply as a reward for long tenure regardless of whether or not the employee is making a substantial advancement in pay through various “built-ins” such as cost of living, step increases, promotions, etc. When longevity pay creates such substantial pay differentials as is the case at the Oakland County road commission, it raises fundamental questions about the equity of the pay plan.

It is recommended that the board of road commissioners discontinue the longevity program. Present dollar value of longevity payments should be continued for all incumbents at the present longevity eligibility level that pertains when the program is discontinued. The longevity payment should be considered part of the regular pay provided in the pay schedule and step pay increases should not be given to any incumbent until the scheduled maximum pay in the position held exceeds the pay of any individual including longevity.

If the board of road commissioners decides to retain longevity pay, it is recommended that the program be modified to eliminate the most objectional features of the present system:

1. Longevity should be applied to base pay rather than gross pay.
2. Longevity pay should be distributed in the bi-weekly pay for all employees—both hourly and salaried.
3. Years of service for longevity pay purposes should be determined from January 1 of the year following hire providing that the employee has a minimum of six months to his credit prior to January 1.
4. Longevity pay should be distributed on a flat dollar amount according to years of service instead of on a percentage basis.

Overtime

The contract for hourly rated employees calls for time-and-one-half for hours worked in excess of the guaranteed eight-hour shift and in most instances for hours worked on Saturdays and Sundays. The contract also calls for a guarantee of three hours pay at the rate of time-and-one-half for an employee called in for emergency duty. Double time is provided for all hours worked on any of the 13 designated holidays. The contract for hourly workers also provides for equalization of overtime hours among the workers. Salaried employees also receive time-and-one-half for overtime.

The need for heavy use of overtime is understandable for the maintenance department in periods of winter maintenance emergencies, and also for the engineering department, the inspectors in particular, for critical periods during the construction process. But the extensive use in the past suggests that overtime has not been given appropriate attention by management. For example, of the 228 salaried employees listed on the December 2, 1973, payroll, only 44 employees received no overtime pay for the year and of these, 18 involved clerical positions. The December payroll also shows that a number of employees grossed substantial earnings from overtime pay as shown below:

Overtime Earnings as of 12/2/73	No. of Salaried Employees
Over \$6,000	3
5,000—5,999	8
4,000—4,999	12
3,000—3,999	31
2,000—2,999	24
1,000—1,999	38

Prior to the adoption of the 1974 budget, overtime was an open ended expenditure item for which there was no appropriation. The 1974 budget establishes an appropriation level of \$647,300 for overtime which is appropriated by department and any increase in the amount requires board approval. The managing director has alerted department heads to monitor expenditures for overtime to assure that such expenditures do not exceed departmental appropriation. The personnel director was asked to prepare bimonthly reports on overtime use.

The board of road commissioners is to be commended for installing a system to manage overtime. Each department head has been made responsible for the management of overtime. The personnel department is presently preparing bimonthly reports which show, by department and division, the appropriation for overtime, cumulative expenditures and the available balance. This data will eventually be shown on the monthly financial statement that the accounting division will produce.

Work Out of Classification

The contract for hourly rated employees provides for higher pay for an employee who is assigned temporarily to work in a higher classification. Section 20, paragraph (d) states:

“Employees required to work in a higher classification for four (4) hours or more shall be paid the rate of the higher classification for the entire day.”

Hourly employees at the Oakland County road commission need work only four hours in a position of a higher classification to be entitled to a full day’s pay at the higher rate. The possibilities for receiving pay at a higher classification are maximized at Oakland County road commission because of the existence of a relatively large number of narrowly defined classes with many positions defined in terms of the type of equipment operated. Table 4 shows that there are fifty different positions in the hourly category and 17 different hourly rates of pay.

Table 4
Hourly Rates for Positions of Hourly Workers—March 24, 1974

<u>Rate</u>	<u>Position</u>
\$2.50	Student - seasonal
2.75	Student - seasonal, 2nd year
4.23	Janitor
4.35	Janitor I
4.46	Janitor II
5.01	Laborer
5.13	Laborer I
5.25	Laborer II
5.34	Tractor operator
5.34	Mower tractor operator
5.40	Loader operator
5.40	Lubrication service
5.40	Laborers - Semi-skilled I
5.40	Small tool repairman
5.40	Truck driver
5.40	Watchman
5.40	Roller operator
5.47	Bituminous repairman
5.47	Bituminous pavement spreader operator
5.47	Float operator
5.47	Land fill site attendant
5.47	Laborers - Semi-skilled II
5.47	Tandem truck driver
5.47	Pavement saw operator
5.52	Tractor-semi - driver
5.52	Painter
5.53	Stock clerk assistant
5.53	Laborers - Skilled I
5.53	Chip spreader operator
5.59	Electrician assistant
5.59	Sign painter assistant
5.59	Curb sweeper operator
5.59	Equipment painter
5.59	Mechanic I
5.59	Laborers - skilled II
5.59	Shovel operator
5.59	Truck-crane operator
5.59	Tar distributor operator
5.59	Tractor semi-distributor driver
5.59	Tree trimmer
5.65	Radio repairman
5.65	Auger guard rail erector
5.65	Grader operator
5.74	Building maintenance man
5.74	Carpenter
5.74	Electrician
5.74	Mechanic II
5.74	Stock clerk
5.74	Sign painter
5.96	Head storekeeper

The pay rates for some of the classes are only pennies apart. Furthermore, it is difficult to ascertain a logical relationship between the skills required for some positions and the pay rate. The paperwork required to administer this “work-out-of-classification” provision probably involves as much in administrative costs as it would cost if pay rates were more properly standardized into a half-dozen classes. A new classification and pay plan, recommended previously, would help to relieve this aspect of the problem.

The provision for a higher rate of pay when assigned to a job in a higher classification is not an uncommon practice. But usually there is an additional requirement that the work performed at the higher classification does, in fact, involve a higher level of skill or responsibility. Otherwise, the work-out-of-class provision is subject to serious abuse.

It is recommended that the board of road commissioners provide standards to assure that pay differential for temporary assignments to a higher classification be based on the principle that the job to which the employee is assigned requires the exercise of special skills or a higher level of responsibility. It is suggested that the following standards be considered: that the duration of a temporary assignment involves work requiring a special skill or a higher level of responsibility; that the employee assigned to fill the temporary vacancy possesses the requisite skills and qualifications required for the higher class; and that the higher rate of pay be granted on actual time worked at the higher level.

Paid Time Off The Job

It has long been an established practice of government to provide employees with paid leave time as a part of the fringe benefit package. Although the cost of these programs may not be shown as a direct cash item in the budget, they may represent a substantial manpower cost and therefore deserve careful consideration. Fringe benefits are not usually extended to seasonal or temporary workers and in the subsequent sections the term "all employees" means permanent hourly and salaried employees eligible for the benefit.

Data compiled from payroll records indicate that Oakland County road commission employees took an average of 34.6 days off in paid leave time in the 1973 year. This includes 13 paid holidays, an average of 12.6 days of paid vacation and an average of 9.0 days in paid sick and personal leave time.

Holidays

All employees are granted 13 days of paid holidays per year. Two-day holidays are provided at Thanksgiving, Christmas and New Year. The 13 holidays are:

New Year's Day	Labor Day
Lincoln's Birthday	Veterans Day
Washington's Birthday	Thanksgiving
Good Friday	Day after Thanksgiving
Memorial Day	December 24
Fourth of July	Christmas
	December 31

Oakland County general government provides for ten full days of paid holidays, plus three hours off Good Friday and one day for state and national general elections. Paid holidays are: New Year, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving and Christmas.

The state of Michigan provides for the following eight paid holidays: New Year, President's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving and Christmas. .

The Macomb County board of road commissioners provides for 11 paid holidays according to the contracts covering maintenance and engineering employees.

It is recommended that the Oakland County board of road commissioners consider a reduction in the number of paid holidays which, at present, is generous.

Holiday pay. The contract for hourly workers at Oakland County road commission calls for double-time pay for all hours worked on the designated holidays. Double time is also provided for salaried workers at the road commission. Oakland County general government, the Macomb County road commission and the state of Michigan provide for time and one-half compensation for working on designated holidays, with the exception that Macomb allows double time for New Year, Easter Sunday, Thanksgiving and Christmas.

The Oakland County road commission policy with regard to holidays and holiday pay is vague in many respects. What is the policy if the holiday falls on a Saturday or Sunday, what is the effect of holiday pay

with respect to other fringe benefits such as longevity pay, and who is entitled to holiday pay? The state of Michigan, for example, excepts certain employees of executive, administrative or professional standing from time and one-half pay.

It is recommended that the board of commissioners provide for a more definitive policy with respect to holidays and holiday pay.

Vacation, Paid Sick Leave and Personal Leave

The following table shows the average number of days in 1973 taken for vacation, sick and personal leave by major division.

Salaried employees took an average of 19.4 days off compared with an average of 23.2 days for hourly workers. The smallest amount of time off (16.5 days) is for the 37 general government employees working in the clerk's office, accounting, personnel, purchasing and other small central units.

For hourly employees, Southfield, District 4S, has by far the smallest average time off with 17.1 days for vacation and sick leave. The average sick leave is only five days, personal leave days 2.1 days and vacation 10.0 days. The Southfield district has a large number of low seniority employees which would limit the availability of vacation leave, but the number of personal and sick leave days taken is also relatively low.

Table 5
Average Number of Days Taken Per Employee by Major Division, 1973
Vacation, Paid Sick Leave and Personal Leave
 (Does not include 13 holidays)

<u>Major Group</u>	<u>Avg. Number of Days Taken Per Employee</u>		
	<u>Vacation</u>	<u>Personal & Sick Leave</u>	<u>Avg. Days Off Sick & Personal Lv. & Vacation</u>
<u>Salaried Employees</u>			
General Government	9.7	6.8	16.5
Permits	12.4	5.9	18.3
Maintenance	16.4	10.5	26.9
Traffic	11.0	6.3	17.3
Engineering	9.7	8.5	18.2
Avg. for Salaried	11.4	8.1	19.4
<u>Hourly Employees</u>			
Dist. 1 Milford	15.8	9.6	25.4
Dist. 2 Davisburg	16.8	10.8	27.6
Dist. 3 Lake Orion	15.1	8.7	23.8
Dist. 4S Southfield	10.0	7.1	17.1
Dist. 4 Pontiac	11.3	7.8	19.1
Dist. 5 Forestry-Pontiac	11.6	12.6	24.2
Dist. 6 Maint. garage-Pontiac	15.4	11.5	26.9
Dist. 7 Sign Department	12.3	9.2	21.5
Dist. 8 Traffic	14.3	10.3	24.6
Avg. for Hourly	13.6	9.6	23.2

Vacation

Paid vacations for salaried and hourly workers are based on length of service. For the first five years, one working day per month of service is granted up to a maximum of ten days. For succeeding lengths of service, one and one-half to two days per month is earned subject to specified maximums. The amount of vacation for each service period is shown below:

<u>Service Period</u>	<u>Maximum Number of Vacation Days</u>
1 to 5 years	10 days
6 to 15 years	15 days
16 years	16 days
17 years	17 days
18 years	18 days
19 years	19 days
20 years or more	20 days

Length of service is determined as of January 1 of the vacation period. The contract for hourly workers provides that employees who are entitled to a fourth week of vacation may receive payment in lieu of vacation for that period, if at the discretion of the employer the vacation cannot be granted.

The contract for hourly workers specifically states that “A vacation may not be postponed from one year to another and made cumulative, but will be forfeited unless completed during each calendar year.” Salaried employees may hold over not more than one-half of the yearly vacation accumulation subject to the approval of the department head.

The vacation period may be split into one or more weeks. The scheduling of vacations for hourly workers is to be established no later than May 15th and preference as to choice is based on seniority.

The nature of the road commission work is such that peak work loads occur in many departments in warm weather months, a time when many employees may be off on vacation. As a matter of policy, vacation leave should be granted at those times when it has least adverse effect upon operations.

It is recommended that each department be directed to prepare a proposed departmental vacation schedule that will best meet the departmental manpower requirements. Upon approval of such departmental schedules by the managing director, vacation date requests from individual employees may be granted on a seniority basis in accordance with the schedule.

It is also suggested that the May 15 date for scheduling of vacations for hourly workers is too late in the year for effective planning.

Sick Leave and Personal Leave

Sick leave is a very important benefit to employees, because it provides a form of income protection in case of illness or incapacity. All employees at the road commission earn sick leave credits at the rate of four hours per each completed bi-weekly pay period or a maximum of 13 work days per year. There is no limitation on

the amount of sick leave days that can be accumulated by an employee.

All employees are also granted three days per year to use for personal business, but personal leave days taken are deducted from earned sick leave. Personal leave days are not cumulative from year to year. Personal leave days are to be taken within a July-June period for hourly employees instead of on a calendar year. Since sick leave is earned on a calendar year basis, personal leave days should also coincide with the “earned” year. To do otherwise creates an extra bookkeeping cost since all other time is recorded on a calendar year basis.

It is recommended that the board of county road commissioners provide that personal leave days be accounted for within the sick leave calendar year.

Salaried employees and the foremen may take time off for medical and dental appointments without having the time deducted from sick leave time whereas the contract for hourly employees specifies that time off for medical and dental treatment shall be chargeable against sick leave time.

It is recommended that the board of county road commissioners provide that time off for medical and dental examination and treatment for all employees be charged to sick leave except where time off was taken because of injury on the job.

Table 6 shows that in the salaried employee category, 87 employees or 40 percent took fewer than five days for sick and personal leave, 97 employees or 45 percent took from five to 12 days, and 32 employees or 15 percent took 13 days or more. In the hourly employee category, 97 employees or 33 percent took fewer than five days, 122 employees or 42 percent took from five to 12 days, and 76 employees or 25 percent took 13 days or more.

The contract for hourly employees specifies that sick leave shall be used for (1) “acute personal illness or incapacity,” (2) “absence from work because of exposure to a contagious disease,” and (3) “medical and dental extractions or treatment to the extent of time required to complete such appointments.” The contract provides that each district superintendent shall be responsible for reviewing employee requests for sick leave and determining their validity. The district superintendent may require daily notification that an employee is taking sick leave; and the employees should give prior notification whenever possible according to the provisions of the contract. The district superintendent shall refuse to allow use of sick leave when the employee has not made a reasonable effort to notify the department of his absence, or when there is insufficient evidence to support the employee’s claim of illness.

In practice the employee is not required to notify the employer when he is ill. When he returns to work if he submits a doctor’s report he receives full pay; if he submits no evidence or even no reason for his absence he receives half-pay for the days absent. Thus, an employee may simply be AWOL and still receive half-pay. The main recourse that the road commission has is to invoke the contract provision (Sec. 12, A(c)) providing that when an employee is absent for five consecutive working days without notifying the employer, he may be discharged. As a minimum requirement to receive any pay for a “sick day” the employee should be required to notify his supervisor each day that he is ill. Further, the present allowance that an employee can be absent five consecutive working days without notifying the employer before he can be discharged invites employee abuse. Furthermore, the provision that the district superintendent shall require a report from a doctor for absences of more than three days appears to be unenforceable.

Table 6
Oakland County Road Commission
Sick & Personal Leave Usage by Major Division, 1973
(Number of Employees Taking Under 5 Days,
5 to 12 Days and 13 Days and over)

<u>Major Group</u>	<u>No. of Employees</u>	<u>Number of Employees Taking Days Off²</u>		
		<u>Under 5 Days</u>	<u>5 to 12 Days</u>	<u>13 Days & Over</u>
<u>Salaried Employees</u>				
General government units ¹	37	19	12	6
Permits	21	7	14	0
Maintenance				
Central staff & field supr.	42	19	17	6
Traffic	23	10	11	2
Engineering	<u>93</u>	<u>32</u>	<u>43</u>	<u>18</u>
Subtotal	216	87	97	32
<u>Hourly Employees</u>				
District 1 Milford	26	8	10	8
District 2 Davisburg	29	8	11	10
District 3 Lake Orion	30	5	20	5
District 4S Southfield	28	12	11	5
District 4 Pontiac	51	23	20	8
District 5 Forestry-Pontiac	19	4	10	5
District 6 Maint. Garage-Pontiac	53	21	14	18
District 7 Sign Dept.-Pontiac	47	16	17	14
District 8 Traffic-Pontiac	<u>12</u>	<u>0</u>	<u>9</u>	<u>3</u>
Subtotal	295	97	122	76

¹ Includes the small general government units: Director, County Highway Engineer's Office, Attorney's Office, Personnel, Purchasing, Accounting, Clerk's Office, Office of Public Assistance.

² Time off for hourly employees refers to paid sick and personal leave and not to time actually absent from the job.

Source: Data compiled from employee leave time records maintained in the Accounting Department for payroll purposes.

It is recommended that the sick leave provision be amended to provide that an employee will receive sick pay only for those days on which he has notified his supervisor of his illness.

It is recommended that the contract be amended to provide that any employee who fails to report to work without notifying his supervisor any two consecutive days or a total of five working days during the year be subject to dismissal.

It should be recognized that a number of employees at the road commission have exemplary records of attendance, but unfortunately there are others who have misused the sick leave program. Problem areas are easily identified and it is urgent that attention be given to these areas.

The general morale of employees is adversely affected when some employees are allowed to take excessive time off, especially when the conscientious employee has to assume extra duties to cover for the absent employee. The public also suffers because loss of time increases the cost of government and lowers productivity.

Some of the excessive use of sick leave time is a direct result of defective or inadequate policy in the contracts, rules and regulations. Other problems have arisen in the past because management has not acted to control usage of sick leave. The lack of management attention has invited abuse of the system.

It is recommended that the responsible supervising employee be notified by the personnel director when any employee has taken six days sick leave during any year and be required to submit a report to the personnel director indicating the reason(s) for such sick leave and whether in his judgment any follow-up action is required.

Such follow-up action would include health counseling by the personnel director, referral to the medical clinic for examination or, if in the judgment of the department head and personnel director the employee is abusing sick leave privileges, future absences should be investigated and disciplinary action taken if warranted.

It is recommended that the personnel director prepare monthly summary reports for the director on the amounts of sick leave used, on problems that have been identified and steps taken to correct those problems and recommendation for action by the director. It is further recommended that the director submit an annual report to the board of road commissioners on the usage of sick leave.

Accumulated Sick Leave

As of January 1, 1974, all employees had accumulated a total of 28,375 days in the sick leave bank. On the basis of an average salary, this represents an unrecorded liability of about \$1.4 million.

An employee or his heirs is entitled to receive one-half of accumulated sick leave at current rate of pay upon his retirement or death. An employee with ten years of service is entitled to be paid for one-fourth of accumulated sick leave upon resignation or discharge (not to exceed 150 hours).

Cash-Out Program. The Oakland County road commission also has a “cash-out” program to provide incentive for prudent use of sick leave. To be eligible to cash-out sick leave at one-half pay an employee must have over 100 days of accumulated sick leave time to his credit. Such cash-out payments are available for the second pay period in April of each year for hourly workers, and in November for salaried workers.

In November, 1973, 59 salaried employees were eligible for “cash out” payments and of these 20 employees exercised the option. Payments to salaried employees totaled \$14,722. In April, 1973, 82 hourly employees were eligible and of these 11 employees cashed out a total of \$5,863.

Since the cash-out program totaled about \$20,635 in 1973, an estimated amount should be included in the annual budget. It is further suggested that the cash-out payments be administered to all employees at one point in time to eliminate duplication of clerical effort.

It is recommended that the board of road commissioners budget the estimated cost of all cash-out payments of accumulated sick leave credits.

Table 7 (following page) shows that the accumulated sick leave time is not growing substantially because employees are using it in time off or receiving cash payments almost as fast as it is being earned. From January 1, 1973 to January 1, 1974, the bank increased by only 228 days.

Extended Sick Leave Payments

In addition to all other sick leave benefits, the road commission provides for extended sick leave payments for eligible employees who have exhausted their accumulated sick leave credits. The extended sick leave payment is \$80 per week. With at least three years of service, an employee may receive benefits up to a maximum of four weeks, and with five or more years of service up to a maximum of 40 weeks.

To be eligible for extended sick leave payments, an employee must also be on approved sick leave or be receiving workmen’s compensation benefits. In the latter case, the road commission will supplement the weekly amount up to a combined maximum of \$80 per week. In recent years, supplementation has not been needed because workmen’s compensation benefits have exceeded the \$80 maximum.

Since the extended sick leave program began in 1969, at least 34 employees have received extended sick leave pay for varying periods of time ranging from one week to a maximum of 40 weeks. Several employees have drawn extended sick leave pay for more than one period of illness but not in excess of the 40 week maximum. As of February 1, 1974, six employees were on extended sick leave.

Shortly after the extended sick leave program got underway, there were problems in its interpretation. In an attempt to clarify the program, an explanation by the then personnel director was appended to the contract for hourly employees:

Table 7
Sick Leave Time Accumulated Jan. 1, 1973 - Jan. 1, 1974

<u>Major Group</u>	<u>Sick Time Accumulated in Days</u>		
	As of <u>1/1/73</u>	Increase or As of <u>1/1/74</u>	(Decrease) <u>1/1/74 over 1/1/73</u>
<u>Salaried Employees</u>			
General government	1,316	1,381	65
Permits	1,409	1,454	45
Maintenance	4,553	4,200	(353)
Traffic	1,392	1,416	24
Engineering	<u>3,599</u>	<u>3,785</u>	<u>186</u>
Subtotal	12,269	12,236	33)
<u>Hourly Employees</u>			
Dist. 1 Milford	1,364	1,447	83
Dist. 2 Davisburg	2,429	2,429	—
Dist. 3 Lake Orion	1,799	1,851	52
Dist. 4S Southfield	768	904	136
Dist. 4 Pontiac	2,525	2,568	43
Dist. 5 Forestry	565	551	(14)
Dist. 6 Maint. Garage	3,861	3,722	(89)
Dist. 7 Sign Department	2,039	2,064	25
Dist. 8 Traffic	<u>528</u>	<u>553</u>	<u>25</u>
Subtotal	15,878	16,139	261
GRAND TOTAL	28,147	28,375	228

“This letter is for the purpose of clarifying the manner in which the extended sick leave is to be applied in proper cases as derived from the discussions and intent of the parties in reaching agreement. Applications of these provisions are to be made in the isolated cases in which an employee is in the unfortunate position during one illness of having depleted his accumulated sick leave and is not receiving any Compensation due to an illness other than that covered by Workmen’s Compensation.

The extended sick leave provisions are not to be applied to employees who have received extended sick leave compensation to one illness and then later, within a relatively short period of time, developed one or more unrelated illnesses to an extent that they could be termed chronically ill rendering them unfit for continuing adequate performance on their jobs.”

Because the mechanics for administration of the program were never set up formally, the objective of the extended sick leave program remains unclear. At the present time, exhaustion of an employee’s sick leave

credits appears to be the main criterion for obtaining extended sick leave benefits. There is a need for rules and regulations that will fill in the specifics such as: designation of the personnel director as the authority to approve extended sick leave, clarification as to whether an employee can deplete his sick leave credits through frequent absences from work and then draw extended sick leave benefits at periodic intervals, clarification of whether an employee is required to have a medical clearance from the road commission's medical clinic prior to return to work to assure physical fitness.

It is recommended that the personnel director submit to the managing director proposed rules and regulations and procedures governing the administration of the extended sick leave program.

Collective Bargaining

Collective bargaining presents a particular challenge because the Oakland County road commission as an organization has tended to approach personnel matters in an informal, folksy way, operating, as it were, out of the mainstream of present-day realities of collective bargaining.

To be successful, collective bargaining requires the best efforts of both management and labor in working out an agreement. But the road commission approaches the bargaining table from a position of weakness because of the vague, ill-defined features of the system. The provisions of the contracts show little effort to correlate fringe benefit provisions to assure that they operate in a reasonable way. At the present time, one benefit operates to accelerate another benefit such as applying longevity on top of gross pay. The one-half sick leave pay program appears to work as an inducement for absenteeism.

The contracts also show that scant attention has been given to the ease of administration. Unwieldy, time-consuming processes represent a real administrative cost to government and divert effort that could be more productively applied elsewhere. Careless use of language has been the source of confusion and misinterpretation of provisions of the contract. There is a need to express the terms of the agreement in more precise language.

There are also substantive matters in the contract that represent an erosion of management's ability to organize and direct the work force such as provisions relating to classification, reclassification and promotion. The posting and bidding process required to effect a promotion for hourly workers has virtually sealed off entrance to the public service, except through the laborer category. Yet, there is little assurance that the laborer recruited today will be prepared and qualified to assume a position of middle management, the foreman of tomorrow.

The board of county road commissioners is technically the "public employer" for collective bargaining purposes according to a state supreme court decision handed down March, 1971. It is therefore incumbent on the Oakland County board of road commissioners to establish the machinery for bargaining. It should be set up well in advance of the expiration of the contract to allow for adequate preparation, because there is a considerable amount of data to be put together including comparative salary surveys, the costing out of fringe benefits, analysis of the operation of provisions in the existing contract, etc. Without such preparation, the commission's collective bargaining effort is not only limited to reaction to the demands of others but such reaction is based on weakness rather than strength.

At the Oakland County road commission it would seem logical for the board of road commissioners to designate the managing director to serve as the board's liaison agent in negotiations. The negotiating team, headed by the director, should also include the personnel director because of his experience in administration of the contract and because it is important to have a link with the general personnel program. The personnel director should be responsible for the preparation of base data. The managing director should be responsible to the commission for the development of a positive management negotiating position and program.

It is, of course, the responsibility of the Oakland County board of road commissioners to develop guidelines in advance of negotiations. The establishment of the broad parameters for bargaining are essential in order to equip the negotiating team with sufficient authority to shape up an agreement that will be subject to final approval by the board.

It is recommended that the board of road commissioners provide by resolution for the establishment and appointment of a negotiating team to be composed of the following: the managing director, as head of the team, the county highway engineer, the personnel director, department heads as needed and a labor relations attorney for technical advice.

Passenger Car Assignments

As of April, 1974, the Oakland County road commission maintained a fleet of 54 passenger cars assigned for use to various officials and employees. Sometimes the cars are left parked on the Pontiac lot overnight but frequently they are driven home after work by the respective employee to whom the car is permanently assigned. Because of the way the cars are assigned and used, they appear to be a form of compensation. If this is the purpose, a more acceptable practice would be to adjust salaries directly.

These passenger cars are serviced at the Pontiac garage of the road commission. Mileage is read and recorded every three months. Some cars are reassigned from year-to-year in order to rotate heavy and light use as indicated by the mileage. Depending on mileage and condition, cars are traded in about every three years.

When an employee uses his personal car for road commission business, he is reimbursed according to the following sliding scale: 14¢, per mile for the first 400 miles per month, 12 cents per mile for the next 600 miles per month, 9 cents per mile for all mileage over 1,000 miles per month.

It is difficult to find grounds upon which to reasonably justify the present system of passenger car assignments and use. In the first place, 54 passenger cars is an excessive number for a relatively small governmental unit. It is equivalent to providing a car to one out of every four salaried employees.

Secondly, it appears that cars have been permanently assigned to individuals on the basis of their status in the organization rather than actual use and need on-the-job (see Table 8 which lists the 1974 car assignments). According to a report prepared by the Committee on Equipment, American Public Works Association, "Passenger vehicles should be assigned to individuals on a permanent basis only when their jobs require almost continuous use." The report goes on to say, "Top-level administrators who are in the office most of the time should use pool vehicles."

Thirdly, vehicle utilization is inefficient and wasteful under the present system. The lack of any formal procedure for shared use of a vehicle means that some cars may sit on the Pontiac lot for most of the day. On the other hand, there may be other employees who do not have access to a road commission car when needed for road commission business. Naturally, this state of affairs leads to pressure for more and more cars as illustrated by additional car assignments to the personnel director, the purchasing director, the clerk to the board and the managing director.

Fourthly, there appears to be no system of accountability in effect that would give assurance that government-owned cars are being used for business purposes. For example, none of the passenger cars are marked as belonging to the Oakland County road commission; and, as mentioned previously, many of these cars are taken home overnight. It is generally recognized that overnight use of government-owned vehicles is fraught with problems, should be generally avoided, and allowed only when strictly regulated to protect the jurisdiction against undesirable use or treatment of the vehicle.

It is recommended that the present practice of permanently assigning passenger vehicles to individual employees of the road commission be discontinued.

Table 8

Oakland County Road Commission Car Assignments January 3, 1974

Commission

Commissioner
Commissioner
Commissioner

Director

County Highway Engineer

Maintenance

Director
Maintenance Operations Engineer
Civil Engineer III
Area Maintenance Operations Supr.
Area Maintenance Operations Supr.
Superintendent - District 1
Superintendent - District 2
Superintendent - District 3
Superintendent - District 4
Superintendent - District 4S
Superintendent - District 5 Forestry
Superintendent - District 6 Garage
Unassigned car - maintenance

Traffic Control

Director
Traffic Engineer
Civil Engineer III
Civil Engineer III
Superintendent - District 7 (Sign Dept.).
Superintendent - District 8

Purchasing

Director

Personnel

Director
Safety Supervisor

Legal

Attorney

Permits & Special Uses

Director
Civil Engineer IV
Civil Engineer III
Engineer Aide III - Spec.
Engineer Aide IV
Engineer Aide III - Spec.
Weighmaster

Engineering

Director
Design Engineer
Subdivision, Improvement and Development Engineer
Planning Engineer
Construction Engineer
Right of Way & Contracts Engineer
Civil Engineer III - Construction
Civil Engineer III - Construction
Civil Engineer III - Construction
Civil Engineer II Construction
Engineer Aide IV Construction Testing Laboratory
Engineer Aide IV ROW
Engineer Aide IV ROW
Professional Community Planner
Civil Engineer III - Plats
Plats Development Supervisor - Engineering Plats
Engineer Aide IV - Subdivision, Improvement and
Development
Two unassigned cars

It is further recommended that all commission-owned passenger cars be clearly identified with the legend Oakland County Road Commission.

The marking of all passenger cars would serve to protect public property as well as to prevent its misuse. The identification of car ownership is a common practice of the state and local governments.

The absence of a central car pool is regarded as the source of many of the problems in the allocation and use of passenger cars. The advantages of managing equipment through a central motor pool are so clear that most larger jurisdictions have a pool in operation. Car pooling systems are designed to reduce the number of units required and to insure effective and efficient utilization of vehicles.

It is recommended that the board of county road commissioners provide for the installation and operation of a central motor pool for passenger vehicles and that charges for use be attributed to the respective user departments.

At the present time, the purchase of passenger cars at the Oakland County road commission is provided for by a line item of capital outlay in the budgetary appropriations to the maintenance department. This is not strictly an operational cost of the maintenance department. The above recommendation provides that the cost for passenger cars be attributed to the respective user departments incurring the cost.

It would seem appropriate for the road commission to draw upon the experience of Oakland County in the design of a central motor pool. Oakland County has a central motor pool that includes 145 passenger cars plus 31 sheriff patrol vehicles and 114 small trucks including pickups and panels. The pool is set up on a revolving fund basis with a charge-back to the using departments. Before the beginning of the fiscal year, a calculation is made to derive a unit cost which covers all actual vehicle costs including maintenance, insurance and depreciation. The current charge is \$100 per month per vehicle plus 11cents per mile. The central motor pool keeps records on mileage of the vehicles and the accounting department provides for the charge-backs to the respective departments. Under this system, the departmental head is responsible for the deployment and utilization of vehicles assigned to his department.

It is recommended that the board of county road commissioners adopt rules and regulations relating to the use of government-owned vehicles and that the managing director be designated to enforce them.

The managing director should propose to the board rules that can be applied in approving temporary assignment and overnight use. One obvious ground rule is that road commission vehicles should not be used to convey an employee from his home to his place of work whether it is to an office or to a work site. With very few exceptions, transportation to and from the place of work is the responsibility of the employee—not the employer. A request for temporary assignment of a vehicle should be clearly explained in terms of need, purpose and duration of the temporary assignment.

Approval of overnight use of a road commission car should be strictly limited to special need. An example of a special need is the top-level supervisors in the maintenance department who, during the winter maintenance period, serve a two-week tour of “on-call duty.” Authorization for use of a vehicle overnight might be extended to an employee whose regular duties require frequent night and weekend meetings for road commission business provided that such use is regularly accounted for.

Some criteria for the denial of use of a government-owned vehicle were developed by the Subcommittee on the Use of State-Owned Autos in a report to the Governor of Michigan.

It is recommended that the denial of use of a government-owned vehicle include the following considerations:

1. Failure of an employee to file an accurate and complete travel log as prescribed by the managing director.
2. Flagrant violation of traffic laws.
3. Flagrant physical abuse and misuse of commission-owned vehicle.
4. Flagrant unauthorized use of a commission-owned vehicle for obviously personal purposes, including travel to and from residence and official work station.
5. Permitting a member of the family to operate a commission-owned vehicle.

Oakland County Road Commission Retirement System

Effective July 1, 1970, the board of road commissioners adopted a new retirement plan and terminated the two pension plans that existed previously.

Board of Trustees

The Oakland County road commission retirement system is administered by a five-member board of trustees. Two of the trustees are ex-officio members: the secretary to the board of road commissioners, and a commissioner designated by the board of road commissioners. The other three trustees are: one hourly employee elected by the hourly employees, one salaried employee elected by the salaried employees, and a citizen member appointed by the board of road commissioners. These latter three trustees serve overlapping three-year terms of office. All five trustees are voting members. The secretary to the board of road commissioners is the secretary to the board of trustees.

The board of trustees is authorized to adopt actuarial tables of experience, to establish rates of interest necessary for administration of the retirement system on a sound actuarial basis, to exercise full authority to invest the assets of the retirement system, and to make administrative determinations necessary for the administration of the provisions of the retirement plan, and to provide an annual report to the board of road commissioners. In summary, the board of trustees is an administrative body with the authority and responsibility for managing the retirement system and for making administrative determinations necessary to carry out the provisions of the plan.

Elsewhere in this report, comment has been made that it is not appropriate for the board of road commissioners or any individual commissioner to have administrative responsibilities. It is believed that a member of the board of road commissioners who is responsible for the enactment of basic policy governing the retirement system should not sit as a member of the board of trustees responsible for administering the system.

It is recommended that the board of road commissioners provide for a change in the composition of the board of trustees of the retirement system as follows: delete the provision that a commissioner shall be an ex-officio member, and in place thereof provide that the personnel director shall be an ex-officio member.

Membership

Generally all employees of the road commission working over 1,000 hours per year are eligible for membership in the retirement system after six months of service. Not included in membership are the road commissioners, persons providing special services on a contractual or fee basis, and persons who are included by law in another retirement system. As of December 31, 1973, there were 500 members in the road commission's retirement system.

Retirement Age

Retirement is compulsory at the age of 65 years with a minimum of eight years of credited service. An extension may be granted to an employee, but this is subject to approval of the department head and the board of road commissioners. In a case where an extension is granted and the employee has at least eight years of credited service, he is not entitled to any further accruals to his credit in his retirement account.

An employee may choose voluntary retirement at the age of 55 years with 25 or more years of credited service or at the age of 60 years with eight or more years of credited service.

An employee with ten years of credited service who becomes totally and permanently disabled may qualify for early retirement on a disability allowance. For disabilities incurred in the line of duty, the ten-year provision is waived.

Retirement Allowance

For the purposes of computing benefits to be received in a retirement allowance, compensation is defined to mean the member's regular salary or wage paid for personal services and does not include bonuses, clothing or other allowances, payments for unused sick leave, expense reimbursement or any other non-recurring form of remuneration. Final average compensation is the average of the highest five years in the last ten years preceding retirement.

The percent of final average compensation used for computing the straight life retirement allowance is as follows: 1.45 percent of the first \$4,200 and 1.70 percent in excess of \$4,200. The amount of the retirement allowance is subject to an overall limitation of 60 percent of final average compensation. To illustrate, an employee with a final average compensation of \$13,000 would receive an annual allowance of \$5,262 after 25 years of service and \$6,315 after 30 years under the straight life payment plan. Employees may elect as an alternative to the straight life payment plan other options relating to the form of payment.

Employees are also covered under the federal social security system and upon becoming eligible may receive benefits that are separate and in addition to the retirement allowance provided under the road commission's retirement system.

Cost of living. The retirement system provides that each retirement allowance shall be adjusted annually in May by up to 1.5 percent to reflect the change in the consumer price index. The aggregate of such adjustments shall not exceed 15 percent of the amount of retirement allowance otherwise payable. The retirement allowance shall not be adjusted downward in the event that the CPI drops in the preceding period.

Accrued Actuarial Assets and Liabilities of the System

As of December 31, 1973, the retirement system had accrued actuarial assets of about \$3.9 million, accrued liabilities for service costs and reserves of \$10.9 million leaving an unfunded accrued liability of about \$7.0 million.

In the four-year period 1970 through 1973, the unfunded accrued liability has almost doubled, rising from \$3.7 million to \$7.0 million as shown below.

Year <u>Ending</u>	Unfunded Accrued Liability <u>(Millions of dollars)</u>
1970	\$3.7
1971	4.5
1972	6.4
1973	7.0

The largest jump over the previous year in unfunded accrued liabilities was in 1972, which reflected an increase in benefits provided by amendment to the retirement plan. In the operations for 1973, the increase in the unfunded accrued liability is attributed to salary increases in excess of long-term assumptions and an increased volume of retirants. There were 34 retirants and beneficiaries at the end of fiscal 1972 and 52 at year-end 1973. Because of age and length of service, it appears that an increasing number of employees will be retiring. For example, at the beginning of 1974 there were 30 employees with 25 years and more service. There were also 65 employees who were 55 years of age or more.

Financing The Retirement System

The retirement system is financed from (1) employer contributions to cover current service costs and to amortize over a period of years unfunded accrued liabilities, (2) employee contributions for current service costs and reserve for refunds, and (3) income from investment of assets. The consulting actuary has determined that for 1975 the road commission contribution will be an average of 13.9 percent of payroll. The employee contribution is fixed at five percent of salary. A breakdown of required contributions for 1975 is shown below:

	<u>Salaried Division</u>		<u>Union Division</u>	
	First	Over	First	Over
	<u>\$4,200</u>	<u>\$4,200</u>	<u>\$4,200</u>	<u>\$4,200</u>
Employer Contributions:				
Current Service	7.64%	9.67%	7.87%	9.97%
Unfunded Accrued Liabilities (active members only)	4.18	4.89	4.28	5.01
Subtotal Employer	11.82%	14.56%	12.15%	14.98%
Employee's Contributions including reserve for refunds	5.00%	5.00%	5.00%	5.00%

The cost of the pension system to the road commission has been increasing as a result of the improvement in benefits and salary increases. The computed contribution of the road commission increased from about \$517,000 in 1972 to \$826,000 in 1974 and a recommended \$911,000 in 1975. In 1972 the contribution was 10.5 percent of payroll, while for 1975 it will be 13.9 percent.

Safety Program

Central responsibility for safety activities at the Oakland County road commission is provided through a safety supervisor, an office which is attached to the personnel department for administrative purposes. The safety supervisor works primarily in the area of personal safety and accident prevention, but he may also become involved in matters relating to the inspection of the safety standards of physical property of the road commission. While it is logically possible to have the office of safety supervisor attached to other departments, its present emphasis on employee safety suggests that it is appropriately located in the personnel department.

The safety supervisor is on call seven days a week to make investigations of all accidents involving employees. He makes a record at the scene of the accident, takes pictures, exchanges information with the police in cases where a police investigation is involved, gives depositions and makes out accident reports. Where there has been an injury-on-the-job, the safety supervisor receives injury reports from the district superintendent (or department head as the case may be), investigates the accident, and makes an evaluation with respect to a claim for workmen's compensation. One copy of the injury report is retained by the personnel department in the employee's personnel file, other copies are sent to the clerk's office for processing and to the employee.

There appears to be very little involvement of the legal staff in these important matters—some claims can run into thousands of dollars.

It is recommended that staff legal services be provided to the personnel department and that the provision of such assistance be considered an integral part of the legal department's responsibilities to the road commission.

The Oakland County road commission contracts with the Hillside Medical Center for pre-employment physical examinations, and also for physical examinations prior to the return to work of an employee who has sustained an injury or an incapacitating illness. These physicals are very important for the protection of the health of the employee and as a protection of the road commission from liability. The personnel department also requires a check on an applicant's motor vehicle record prior to employment.

In the area of accident prevention the safety supervisor spends an average of five hours a day in the field visiting district maintenance garages and various work projects, checking to see that workers are wearing safety devices such as hard hats and goggles where necessary. Some special services are the provision of poison ivy immunization for workers during the season, participation in the blood bank, etc. The safety supervisor works with the equipment instructor of the maintenance department in organizing training programs in the use of equipment and monitoring the performance of equipment operators. Early morning safety training sessions are held in all divisions three times a year. He participates in inspection tours by insurance carrier representatives, by agents of state government, fire marshals, etc.

Because the safety supervisor is out in the field so much, there has been a tendency to use him as the carrier of various messages, including personnel and union communications, and also to attend to miscellaneous tasks. Except for personnel notices in which there is a time urgency, the safety supervisor should not be involved with matters that do not directly relate to his duties.

It is recommended that the safety supervisor be relieved of non-safety related duties.

While the safety program is carried on in a more personalized style than usual, it appears to have produced good results in accident prevention. For workmen's compensation insurance, Oakland County road commission has been assigned an experience modification ratio of .71 for 1974. Macomb County road commission's experience modification for 1973-74 was 1.10. Since the average for employers of this type is 1.00, a .71 ratio indicates that the Oakland County road commission is doing a relatively effective job in employee safety.

The safety program deserves the attention of top management. Although monthly summaries of accidents have been prepared, it has not been the practice to submit an annual report to the board of road commissioners.

It is recommended that the safety supervisor prepare and submit an annual report for transmittal through channels to the board of road commissioners. The report should include a summary of accidents, severity, causes and cost. The report should also include a discussion of corrective actions which have been taken and a statement on unresolved problems.

Safety Committee. The contract for hourly workers provides for the establishment of a safety committee composed of employees (including the steward from each district) and employer's representatives. The committee meets once a month during regular working hours for the purpose of making recommendations to the employer.

The safety committee is chaired by the safety supervisor. Programs vary—safety films may be shown, and sometimes there is a demonstration, such as the use of equipment. The minutes of the committee suggest that a large number of suggestions and complaints are received. The safety committee would benefit from establishing some rules of procedure relating to the investigation and disposition of suggestions received. It is suggested that the safety director consult with the personnel director and the managing director and develop a method for submitting suggestions to management.

Safety of the Traveling Public. One of the safety areas that needs further attention is the safety of the traveling public on construction and repair sites. There are several department heads that have safety responsibilities in this area. Examples are the director of traffic engineering, the director of permits and special uses, the director of maintenance, the director of engineering, and the county engineer. At the present time, there appears to be no formalized procedure to coordinate these efforts.

It is recommended that the managing director create an interdepartmental coordinating committee on safety to the traveling public and that the safety supervisor serve as the secretary.

CHAPTER VI

THE COMPLAINT SYSTEMS AND PUBLIC INFORMATION ACTIVITIES

A formal procedure for handling citizen complaints is an important aspect of governmental operations because it goes to the heart of the issue of responsiveness of government to the needs and desires of the citizenry. From the viewpoint of the ordinary citizen, the degree of responsiveness of government is demonstrated by the way his complaint is acknowledged and his grievance redressed.

In the last few years, citizen discontent with the responsiveness of the Oakland County road commission was widespread. While most complaints related to the condition of the roads, there were a number of other complaints from citizens alleging that they had been treated in a discourteous or abrasive manner, that they had been given inaccurate or incomplete information, and that their complaints had not been taken seriously.

Citizen dissatisfaction reached a crescendo in the spring of 1973, when (after an unusually wet year) the spring thaw rendered many roads impassable. A large number of people were stranded in their homes and school buses and emergency vehicles were unable to reach many areas. An unprecedented number of complaints (several hundred daily) were called into the road commission's offices during the peak period, which extended from the latter part of February through March.

Confronted with a considerable amount of adverse publicity, the board of road commissioners took several steps during the 1973 year to respond to citizen complaints, to improve public relations, and to provide for a constructive public information program. The board appointed a chief public information officer, provided for the establishment of a complaint bureau, and retained a professional public relations consultant. In addition, the board of road commissioners adopted a public relations policy providing for full disclosure of information to the public.

THE ROAD COMMISSION COMPLAINT SYSTEMS

Various aspects of complaints and public information are handled by eight different offices and departments: the managing director who acts as chief information officer, a public relations consultant, and six departments that process citizen complaints—traffic, maintenance, permits and special uses, engineering, the clerk's office and the public assistance office. The Oakland County road commission receives a large volume of complaint calls, an estimated 12,800 general complaints in 1973. Table I shows the number of complaints received by department.

Table 1
Estimated Number of Complaints Received in 1973

<u>Department</u>	<u>Number</u>
Clerk	100
Engineering	200
Traffic-Engineering	2,100 ^a
Permits and Special Uses	1,600 ^b
Maintenance	4,200 ^c
Public Assistance	<u>4,600^d</u>
TOTAL	12,800

^a Based on the actual number (2,098) reported for year ending June 30, 1973.

^b Based on department estimates of 520 complaints in the weighmaster area, plus 1,140 complaints in the construction permit area.

^c Based on department's estimate of receiving about 1,800 calls during office hours, plus 1,800 at night (average of five calls a night) plus about 600 calls on weekends and holidays.

^d Actual count for eleven months that the office was in operation.

As shown above, the clerk's office and the engineering department handle a relatively small number of the total volume of complaints. Complaints referred to the clerk's office above were primarily complaints alleging damage to private property such as mailboxes, sod, etc. Complaints relating to road and street construction are generally referred to the engineering department and its divisions.

Traffic. The traffic-engineering department receives an estimated 2,100 complaints annually relating to signs, signals or electrical devices and-other traffic related markers such as guard rails, guard posts, delineators and pavement markings. Traffic-engineering appears to be handling a growing volume of complaints: 1,126 were recorded for the year ending June 30, 1971; this dropped to 1,086 for the following year; but, rose to 2,098 for the year ending June 30, 1973.

The traffic department uses a specially designed form to record complaints received over the telephone. For complaints received by mail, the traffic department may initially acknowledge the complaint by returning a postcard form. Traffic complaints are entered into a complaint log. Periodically, a list of unclosed cases is compiled and called to the attention of the appropriate employee with a request for a report on action or an explanation for the delay.

The peak period for traffic complaints frequently occurs at the beginning of the school year when a number of parents request devices for school crossings—stop signs, stop lights, etc. To respond to these complaints, the traffic department may mail informational brochures to complainants such as a copy of the "Oakland County Road

Commission Policy Pertaining to Uniform Safety To Be Used in School Zones and School Crossing Areas” and school safety pamphlets prepared by AAA.

Permits. The permit department received approximately 1,600 complaints in 1973. The permit department answers complaints relating to permits granted for construction on the right-of-way and complaints relating to vehicle weights and loads. A complaint relating to underground construction such as sewers, water mains or drains is directed to an inspector assigned to the area who investigates the complaint and makes a finding. Complaints pertaining to driveway permits are sent to one of three inspectors who work out of the Pontiac office and are responsible for driveway inspections. A third type of complaint relates to the weighmaster function. When complaints of over-weight or over-loaded trucks are received, they are assigned to the weighmaster for investigation. The permit department has its own departmental form for recording complaints. After the complaint has been investigated and a determination is made, the complaint is filed under the permit number.

There is an important difference between complaints received by the permit department and general complaints about road commission services. The permit department is concerned with protection of the right-of-way in the interest of the traveling public and abutting property owners. In carrying out this responsibility, the department issues permits to perform work in the right-of-way to agencies and persons such as the county drain commission, the county department of public works, public utilities, private contractors and citizens. Therefore, when a complaint is received relating to a permit user, the complaint has to do with the main objective of the department-to protect the right-of-way. Furthermore, the complaint is usually one that is lodged against a permit holder rather than the Oakland County road commission per se. Upon investigation, the permit department may determine that a cost for damage should be assessed against the holder of the permit.

The present practice of filing complaints under permit number does not adequately provide a meaningful record of performance of the permit holder. Once the complaint is filed under the permit number, retrieval of the information is very difficult. It is believed that the permit department should file with the office of public assistance a duplicate copy of all complaints relating to permit holders, and these complaints should be filed separately under the name of the permit holder. By filing complaints according to name (for example, the county department of public works), the road commission will be able to develop a documented record of the accumulated experience with a particular agency, contractor or person. If the experience indicates that there has been a continuous problem with the performance of a person, contractor or agency on the right-of-way, this matter should be called to the attention of the board of road commissioners so that corrective action may be taken. Complaints relating to permit holders should be retained in a separate file for at least a five-year period.

It is recommended that the board of road commissioners provide for a system for accumulating complaints against permit holders and for reporting significant problems to the board of county road commissioners.

Maintenance. It is estimated that the maintenance department directly received about 4,200 complaints in 1973. This count includes only direct calls into the department and does not include approximately 4,000 other complaints relating to road maintenance received by the office of public assistance and referred to the

maintenance department for investigation and action. At night and on weekends and holidays when the road commission offices are closed, complaints and emergency calls go directly to the maintenance department where the call is received by the night supervisor or watchman.

The maintenance department uses its own special form to record complaints received directly. If an answer to a complaint cannot be obtained at the central maintenance office at Pontiac, the complaint form may be routed to one of the maintenance district garages for investigation and remedial action.

Public Assistance

The office of public assistance was established in February, 1973, to serve as a central point of contact for the receipt of citizen complaints. The office received about 4,600 complaint calls in 1973, about 36 percent of the total volume of complaints received by all road commission departments and agencies. The office of public assistance is directly responsible to the managing director.

Source and Nature of Complaints

Of the total 4,564 complaints received by the office of public assistance, about 2,815 or 62 percent originated from three townships alone: Waterford, 29 percent; Farmington, 16 percent; and West Bloomfield, 17 percent. A considerable drop in the number of complaints can be expected due to the incorporation of Farmington Township into the city of Farmington Hills and the relinquishing of county jurisdiction over a number of roads. Drainage problems are the source of most complaints filed at the office of public assistance, numbering 2,011 or 44 percent of the total. The second most frequent complaint is for holes and rough roads, with 1,547 complaints or 33 percent. Table 2 summarizes the frequency of complaint by major problem. Table 3 shows the number and proportion of complaints by township and the 1970 township population.

Table 2
Complaints by Type of Problem
Office of Public Assistance
(Feb. through Dec. 1973)

<u>Type of Problem</u>	<u>Number of Complaints</u>	<u>Percent</u>
Holes and rough roads	1,547	33.9%
Mud and drainage	2,011	44.1
Ice and snow	136	3.0
Dust	38	0.8
Trees and brush	94	2.1
Signs and signals	99	2.1
Miscellaneous	<u>639</u>	14.0
TOTAL	4,564	100.0%

Table 3
Number of Complaints Received by Office of Public Assistance
by Township (Feb. through Dec. 1973)

<u>Township</u>	<u>Complaints</u>		<u>1970 Township Population</u>	
	<u>Number</u>	<u>Percent of Total</u>	<u>Number</u>	<u>Percent of Total</u>
Addison	81	1.8%	2,809	0.8%
Avon	211	4.6	24,513	6.7
Bloomfield	173	3.8	42,788	11.7
Brandon	44	0.9	4,813	1.3
Commerce	88	1.9	18,857	5.1
Farmington*	730	16.0	48,933	13.3
Groveland	14	0.3	2,570	0.7
Highland	77	1.7	8,372	2.3
Holly	50	1.1	7,396	2.0
Independence	87	1.9	17,361	4.7
Lyon	78	1.7	4,500	1.2
Milford	32	0.7	7,256	2.0
Novi	42	0.9	182	0.1
Oakland	75	1.6	4,793	1.3
Orion	94	2.1	17,110	4.7
Oxford	48	1.1	8,489	2.3
Pontiac	184	4.1	13,219	3.6
Rose	23	0.5	2,502	0.7
Royal Oak	19	0.4	6,326	1.7
Southfield	78	1.7	17,521	4.8
Springfield	25	0.6	4,388	1.2
Troy (city)	57	1.2	—	—
Waterford	1,305	28.6	59,123	16.1
West Bloomfield	780	17.1	28,563	7.8
White Lake	169	3.7	14,311	3.9
Total	4,564**	100.0%	366,695	100.0%

* Entire township was incorporated as a city and jurisdiction over local roads and streets relinquished July 1, 1973.

** Total does not include 52 complaints in process as of December 31, 1973.

There is some evidence that a large number of complaints center on subdivision streets and unpaved roads. While information by type of road and type of surface was not available for 1973, an analysis of 627 complaints retained by the maintenance department in 1972 shows that 68 percent of the complaints related to subdivision streets, ten percent to other local roads, and 22 percent to primary roads. The sample also showed that of the complaints dealing with local roads and subdivision streets, most dealt with unpaved surfaces (69 percent) as compared with paved surfaces (31 percent).

In summary, the source and nature of complaints generally reflects the road problems confronting Oakland County. A large number of complaints have to do with local roads and subdivision streets. Complaints further indicate that drainage is a major problem.

Office Staff and Facilities

The public assistance office is staffed by a director and a clerk-typist. The annual cost of operation (1974 budget) is about \$30,000, which includes \$26,500 for salaries and fringe benefits and \$2,400 per year for the two WATS telephone lines.

The office has four telephone lines—two direct lines which are listed in the 1974 telephone book under a centrex direct dial number, and two toll-free WATS lines for the convenience of citizens living beyond the Pontiac exchange area. The WATS lines (installed in the spring of 1973) are not listed in the current telephone book. However 9 the numbers were made available to the township offices and, were published in the newspapers at the time of installation. Nevertheless, it is unlikely that the ordinary citizen who relies upon the telephone book for such information would know about the existence of these toll-free lines.

The charge for each WATS line (1973) is a flat \$100 per month for fifteen hours of conversation. There is an additional charge of \$6 per hour of conversation over the fifteen hours. In 1973, the billing for calls on the WATS lines never exceeded the maximum of fifteen hours. Currently, relatively little use is being made of the toll-free lines. If the toll-free number were listed in the telephone book, citizens in the local calling area would probably use it more extensively assuming that it is a “hot line” for emergency service. But calls coming in on the WATS lines are processed the same as calls coming in on the regular lines. It should also be noted that most of the area in the county is, and the majority of the people live, in the local exchange area and do not need a toll-free number. In conclusion, usage does not appear to justify the expenditure of \$2,400 annually for an unlisted toll-free line.

It is recommended that the board of commissioners discontinue the WATS telephone service.

A centrex telephone system was installed in the spring of 1974, making it possible for calls to go directly to the department instead of being relayed through a central switchboard. As a consequence, some citizens have tended to put their complaints directly through to the operating department that they assumed to be directly involved with the problem. It is unfortunate that a complaints number as such was not listed in the current telephone book. Such a listing should be included in the next telephone book.

Why Have a Central Complaint Agency?

The primary justification for a central office for the processing of complaints is that the citizen is given an opportunity to appeal to a unit other than the one about which he is complaining. Criticism of the way in which the road commission has handled complaints in the past has indicated a need for a specialized agency whose success depends upon a receptive, citizen-oriented approach.

While the main purpose of a centralized complaint system is, of course, to provide for an effective response to citizen complaints, it can also serve other purposes. A centralized system can serve as a means through which factual information is made available to the public. Some complaints may express dissatisfaction with or misunderstanding of substantive provisions of the law or of administrative practices and procedures. There are likely to be a number of these kinds of complaints in connection with county road operations which tend to involve a considerable amount of detail of a legal and technical nature.

A centralized complaint office can also serve the needs of top management and decision-makers to identify the source and nature of citizen dissatisfaction. Information received through a central complaint system should be organized in such a way that regular reports may be transmitted to management and the operating units.

Procedures for Central Processing of Complaints

The office of public assistance was established pursuant to a motion adopted by the board of road commissioners January 9, 1973, which briefly said: "that the Oakland County Road Commission administration procedures include a section for the purpose of receiving, recording and cataloguing and making written acknowledgement of citizen complaints concerning road conditions..." The procedures for central processing of complaints through the office of public assistance were outlined in the managing director's inter-departmental memoranda dated June 7, 1973 and June 19, 1973. Several other memoranda were issued on specific subjects such as those relating to complaints about damage to mailboxes or minor property damage.

Receiving the Complaint. All calls identified as complaints were to be referred to the office of public assistance. Such a procedure does not prevent a citizen who asks for a specific department from lodging his complaint with that department. There is probably no acceptable way that a public agency can prevent a citizen from talking to whomever he wishes. However, it should be made clear internally that citizens are not to be encouraged to call directly and by-pass the central receiving system. Actually, central reception of complaint calls should be regarded as a service to operating line departments. It should release employees from the job of answering the telephone so that attention can be given to the tasks for which they were hired.

Complaints are recorded on the office of public assistance complaint form. A xerox copy is retained in the "active" file, and the original form is sent to the appropriate department when further investigation and action is indicated.

It is important that employees in the central complaint office have a thorough understanding of the necessary facts that must be obtained in order to properly describe the complaint so that it can be properly acted upon. General knowledge is necessary to record a complaint, but for the vast majority of complaints a

highly technical background is not required. At the present time, the head of the office is assembling a file of procedures and general information. This should be continued.

Investigation and Remedial Action. A centralized complaint procedures usually provides for an orderly process to route to the appropriate department complaints that cannot be answered centrally. The central routing of complaints prevents a citizen from being haphazardly shuffled from one department to another—a procedure likely to aggravate the citizen.

At the present time, complaints received by the office of public assistance and routed to another department are supposed to be investigated, acted upon and returned by the department with a written response within five working days. This appears to be a reasonable rule because promptness is an essential part of effective response. If a longer delay is unavoidable, the department is requested to notify the office of public assistance with the reason for the delay.

Some complaints such as icy and snowy road conditions which reflect a temporary condition need not be routinely referred to the maintenance department because the remedy (salting and snow removing equipment) presumably is on the way. Instead, the complaint office can report that snow removal crews have been dispatched at a certain time, that it usually takes a specified number of hours to make a complete pass of the district, and request the complainant to report back at a given time if the problem is not corrected.

Follow-up and Notifying the Complainant. The office of public assistance is responsible for follow-up of complaints and reply to the complainant. At the present time, the office keeps a duplicate copy of all complaint forms referred by it to the road commission departments in an active file. When a complaint is closed (i.e., the complainant has been notified of action taken) the complaint is removed from the active file and filed by township. When the response from a department is overdue, the office of public assistance may stamp the form “delinquent” and send a duplicate form to the department.

Uniform Complaint Forms

At present, the Oakland County road commission departments use four different kinds of forms upon which to record complaints. The forms used by the office of public assistance, the permit department and the maintenance department are very similar in content. Spaces are provided on each for reporting complaints relating to the following conditions: surface, drainage, trees and miscellaneous. The form for traffic engineering provides spaces to report complaints on the following matters: signs; signals or electrical devices; other (guard rail, guard posts, delineators and pavement marking); and miscellaneous.

It is recommended that the managing director require that the use of specialized complaint forms by each department be discontinued, and that the managing director provide for the design of a uniform form that would be suitable for all uses; and that each department head or his designee be asked to participate in the design of a uniform form. In addition to the present information on the forms, it is recommended that space be provided for the following additional items: (1) class of road—primary, local or subdivision street, and (2) road surface-paved or unpaved.

Central Reporting

One of the purposes that a central complaint system should serve is to provide a feedback of information to management. It is, therefore, necessary to collect information from which a meaningful analysis may be made. At the present time, the office of public assistance has started to compile a monthly report of complaints called in to the central complaint office. In order to assure that the information is more comprehensive of complaints received by road commission agencies, each agency should file a monthly summary of complaints on such form that the public assistance office determines.

It is recommended that each of the departments receiving complaints be required to submit monthly a summary report on the complaints received and that the office of public assistance prepare a monthly report covering all complaints received by the road commission.

Work Load and Flexible Staffing

In 1973, the office of public assistance received an average of 310 complaint calls per month excluding the abnormally high number of complaints attributable to the spring break-up in February and March. In November and December of 1973, for example, the office received 367 and 376 calls per month respectively. The average number of calls for these two months comes to 17 to 21 complaint calls per working day. More currently, June 1974, 335 complaints were received by the office.

The problem that this workload presents is that it does not seem to be sufficient at present to warrant the full-time occupation of two employees even allowing for outgoing follow-up calls. At certain times of the year, such as in periods of snow and ice emergency, a larger volume of complaint calls are received. During this period, additional help may be needed to handle calls. The fluctuation in the work load would seem to indicate that a more flexible staffing arrangement would better meet the need.

The operation of the office of public assistance as a separate organizational entity is seen as a limitation to flexibility of staffing. It is therefore proposed that the office of public assistance be attached as a unit of the clerk's office. It is also suggested that the two centrex telephone lines to receive complaints be continued.

The director of the office of public assistance should be given assistance as needed during peak calling periods and for typing and filing of reports.

It is recommended that the functions of the office of public assistance be attached to the clerk's office, that one person be permanently assigned to the public assistance function, and that additional help be assigned by the clerk as required.

Name of the Unit. The name public assistance is confusing because it is the proper name for a public welfare program. In Oakland County, the public assistance program is administered through the county department of social services. It is, therefore, a misnomer to use the same name for a program provided by another county agency, the Oakland County road commission. The problem of identical names can easily be resolved by a slight change in wording such as citizen complaint bureau, public information and assistance, etc.

It is recommended that the board of county road commissioners officially designate a name for the office and that the name be appropriately descriptive of functions and easily understood by the public.

PUBLIC RELATIONS

In the last year or so, considerable progress has been made toward improving the effectiveness of the road commission's public relations. A turning point may be seen in the adoption of a full disclosure policy by the board in June, 1973. The adopted resolution declared that it is "the policy of the road commission to volunteer detailed and timely information to the general public and other appropriate public agencies..." In further emphasizing its position, the board added that complete disclosure pertains to information that might reflect unfavorably upon the road commission as well as favorably. This unequivocal statement of intent should serve to allay public doubt and suspicion about the activities of the road commission.

In addition, the road commissioners designated that the managing director have overall responsibility for the implementation of a sound public relations program. To assist in this effort, the board contracted for professional public relations services.

Illustrative of progress toward a more enlightened public relations policy is the change in the way claims for mailbox damage is handled. Several years ago, the Oakland County road commission sent out a "To Whom It May Concern" letter which summarily dismissed all such claims. Apart from the wisdom of the policy, the wording was such as to enrage the most placid of citizens.

"In general, the public as a group has the basic right to use public roads and right-of-way which takes precedence over the right of an individual. When a mailbox is knocked over in the process of snow removal or seasonal maintenance work, it can be assumed we are acting in the best interest of the public and occasional scattered damages are unavoidable. As such, neither the public nor the Road Commission, who is acting on behalf of the public, is liable or responsible for any damages. In many cases, the mailboxes are in poor condition to begin with, improperly located, or sod has been improperly placed within the right-of-way. Therefore, the Oakland County Road Commission's policy will be that we will not repair damaged mailboxes, replace sod or recognize any similar claims. Mailboxes, sod and grass are allowed on the public right-of-way for the convenience and benefit of the individual. Therefore, the Road Commission of Oakland County cannot assume any responsibility for any damages; we likewise do not assume any responsibility for utilities that must be repaired or moved."

This policy was changed in December, 1972, to recognize limited responsibility for damage to mailboxes. Responsibility for processing claims was placed with the clerk who was to provide for appropriate investigation and determination with the help of the safety supervisor or personnel in the maintenance district.

The current policy stated in an inter-department memorandum dated October 4, 1973, provides that the office of public assistance shall make the final decision on the disposition of a claim for minor property damage (sod, curb, mailboxes, etc.). This procedure assures the citizen that the legitimacy of his claim will

not be finally determined by the same person or persons who may have perpetrated the damage in the first instance.

A Public Relations Program

The public relations policy adopted by the board of road commissioners is addressed primarily to the question of public disclosure of information and the delegation of administrative responsibility for implementation of that policy. As the governing body, the board is responsible for the approval of a public relations program which would include broad objectives and means to achieve those objectives. Approval of a specified program places the board in a positive, constructive role rather than a passive role where the board is merely reacting to the efforts of others. Furthermore, by articulating a program of public relations, the board has a basis upon which to review, make decisions and exercise legislative oversight. A public relations program may include a broad range of activities including press relations, public reporting, processing of citizen complaints, public relations training of employees and community-based information programs.

It is recommended that the board of road commissioners request the managing director (in consultation with the public relations counsel and others) to recommend a public relations program for board approval. It is further recommended that the following matters be considered: (1) a comprehensive statement of objectives for a public information-public relations program-, (2) a proposal to help unify present organizational efforts to achieve stated objectives, and (3) a regular reporting procedure designed to keep the board informed concerning current problems and progress.

It is noted in the section of this report on the planning division that there is presently available a tremendous amount of information regarding the activities of the road commission that could be used effectively in slide presentations and brochures. In the highway needs section it is pointed out that if the road commission is to meet the priority needs of improving the county road system, it will require the support of the county board of commissioners, local units of government within the county, and the citizens of Oakland County. The task of informing the several publics of the road commission about its activities, accomplishments, problems and proposed solutions should be given a high priority.

Public Reporting

Public reporting at periodic intervals is an important aspect of a public relations program and is widely used as a means to keep the public informed. An annual report serves the purpose of giving the citizenry an overall picture of the work and activities carried on in the preceding year; but all too often it reaches relatively few citizens. The 1973 annual report of the road commission surmounted this problem by publishing the report in a readable newspaper format for distribution as a supplement to seventeen newspapers located throughout the county.

CHAPTER VII

ENGINEERING DEPARTMENT

The engineering department is one of the four major operating departments of the road commission. The engineering department is headed by the director of engineering who is responsible to the county highway engineer.

The primary responsibility of the department is the development and execution of the road commission construction program. The 1974 budget of the road commission authorizes \$18.7 million for new construction projects. The engineering department also provides engineering services as required to the other operating departments of the road commission and participates with other units of government in joint road construction projects.

THE CONSTRUCTION PROGRAM

The development and implementation of the road commission construction program is a complex process involving a number of different agencies within and outside the road commission and a number of separate steps and procedures. Because of the importance of the construction program in the overall operations of the road commission, the county highway engineer plays a major role in the development of the program with the assistance of the engineering department.

During the course of this study new procedures were implemented for developing the annual construction program. While in prior years the road commission had "a construction program," the overall program was not approved as such by the board of road commissioners. Individual projects from the county highway engineer's construction program were submitted to the board for approval as required (e.g., approval of agreements with other units, approval of letting bids, etc.) and the sum total of the individual projects approved constituted the road commission construction program.

In the fall of 1973, the county highway engineer proposed a comprehensive construction program for 1974 with projects listed in recommended priority order. This program was reviewed by the managing director and submitted to the board of road commissioners. The board approved the program and the 1974 budget appropriated funds to carry it out.

In selecting individual projects to be included in the annual construction program there are 15 primary criteria to be considered and evaluated. These are shown in Exhibit 1. The factors included in each of these criteria are discussed in the "Planning Division" section of this chapter.

It is recommended that the road commission utilize the 15 criteria set forth in Exhibit 1 in determining construction program priorities.

Exhibit 1

Criteria Used in Selection of County Road Construction Projects:

- I. PRIOR COMMITMENTS
- II. EMERGENCY CONSTRUCTION
- III. COOPERATION WITH OTHER GOVERNMENTAL UNITS AND AGENCIES
- IV. COOPERATION WITH BUSINESS AND INDUSTRY
- V. COORDINATION WITH OTHER GOVERNMENTAL UNITS
- VI. COORDINATION WITH BUSINESS, INDUSTRY AND UTILITY DEVELOPMENT
- VII. TRAFFIC SERVICE
- VIII. SYSTEM DEVELOPMENT-COUNTY PRIMARY ROADS
- IX. AVAILABILITY OF HIGHWAY FACILITIES
- X. ECONOMIC IMPACT ON AREA
- XI. PHYSICAL CONDITIONS
- XII. SAFETY
- XIII. REDUCTION OF MAINTENANCE COSTS
- XIV. MILITARY TRAFFIC OR DEFENSE NEEDS
- XV. AVAILABILITY OF FEDERAL FUNDING

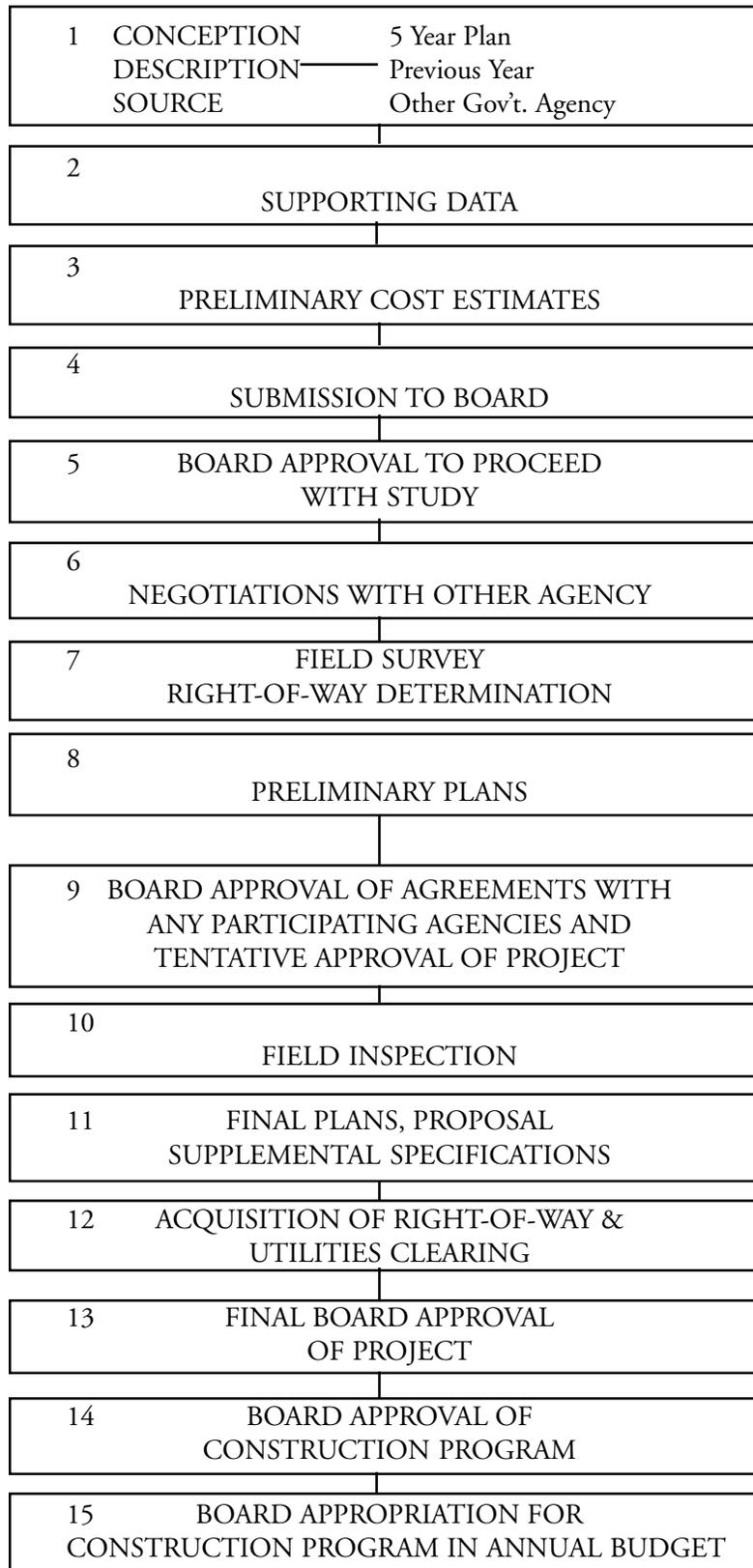
Because of the limited resources available to the road commission in relation to construction needs, it is of primary importance that resources be directed to the highest priority projects. While there is no completely scientific method of determining construction priorities, use of these criteria will aid the commission in developing relative priorities.

In developing the annual construction program there are a series of steps that should be taken with respect to each proposed construction project. These are shown in Exhibit 2. Step 1 in the process is the conception of a particular construction project. In general, construction projects are initially conceived by the road commission staff, by participating units of government, or by private organizations. This step is essentially the "idea" stage in the development of a project.

Step 2 involves the development of supporting data in accordance with the 15 criteria set forth in Exhibit 1. Step 3 involves the development of preliminary cost estimates.

Exhibit 2

Flow Chart for Project Development



Step 4 involves submission to the board of road commissioners of the preliminary project proposal incorporating the data developed in the first three steps. All proposed projects should be submitted to the board with the recommendation of the county highway engineer and managing director as to whether or not to proceed further with individual projects. This will insure that the board is fully informed as to the construction projects that are under consideration and will be able to indicate to interested parties the status of any particular project. In Step 5 there is board action authorizing the staff to proceed with a particular project, or disapproving further work on that project. The commitment of staff time and money in the first three steps is minimal and, for the most part, is derived from the continuing process of data collection, analysis and evaluation by the planning and other divisions of the engineering department. Board approval of the project in Step 5 authorizes the staff to begin to make commitments of significant amounts of staff time and effort.

Step 6 involves staff negotiations with other agencies involved in the project. A large number of road commission construction projects involve financial participation by the federal, state or local units of government. Preliminary approval of the project by the board of road commissioners prior to negotiations with the other agencies should strengthen the staff of the road commission in conducting the negotiations.

Step 7 involves a field survey of the proposed project and determination of right-of-way requirements. In Step 8 preliminary plans are prepared by the staff including more refined and detailed cost estimates for engineering, right-of-way and contract costs.

In Step 9 the negotiated agreements and preliminary plans are submitted to the board of road commissioners for its tentative approval. "Tentative approval" by the board at this step generally would represent a commitment by the board to undertake the project subject to the availability of funds to finance it. That is, the board should make a determination at this stage that the project has sufficient merit for inclusion in the construction program and for further expenditure of funds, but reserve the final determination as to the year in which the project will be funded.

Steps 10 and 11 involve field inspection of the proposed project and developing final plans and specifications. In Step 12 the staff would proceed to acquire the necessary right-of-way and arrange for relocation of utilities. It is recommended in this report that the road commission establish an "Advance right-of-way acquisition revolving account" to be used to acquire necessary right-of-way well in advance of construction. One of the present stumbling blocks in the orderly completion of construction projects is that in some cases the right-of-way has not been acquired sufficiently early. It is proposed that the board authorize the acquisition of right-of-way (if needed) when it gives tentative approval of the project in Step 9. Use of the "revolving account" will give the road commission the necessary lead time in acquiring right-of-way and the revolving accounting will be reimbursed when the project is funded.

Step 13 involves final board approval of each construction project. Steps 1 through 13 should be followed for each construction project. At various points in time during the year, the several projects will be at different steps in the process. As each project is approved it becomes part of the proposed construction program.

By late summer or early fall the county highway engineer should develop an overall construction program from the individual projects that have been approved. The overall construction program should indicate the individual projects by priority rating. The proposed construction program should be submitted to the

managing director for his review and analysis and the managing director should submit the program to the board with his tentative recommendation as to the amount that can be financed in the budget for the following year.

In Step 14 the board of road commissioners will review the proposed program and the priorities established therein (having already approved each individual project). The board should adopt the construction program subject only to appropriation of the funds necessary to finance it in approving the budget.

In Step 15 the board of road commissioners should appropriate the funds needed to carry out the construction and operating programs of the commission. In adopting the budget the board has to weigh the relative priorities of all of the needs of the road commission—construction, maintenance, traffic, permits, new equipment, administrative costs, etc. In Step 15 the board makes a final determination as to the amount of the approved construction program that can be undertaken in the following fiscal year. Normally, any project in the construction program previously adopted by the board that cannot be financed in the budget will be included at the top of the priority list in the program for the following year.

There are a number of advantages in following the proposed procedure. With respect to the steps involved in the development and approval of individual projects, the proposed procedure keeps the board fully informed as to the status of each proposed project and requires the board to decide whether or not to authorize the staff to proceed with the project. It provides an orderly process for board consideration of individual construction projects and prevents the board from being presented with a fait accompli (when, for example, a project is brought to their attention for the first time when it is time to let construction bids). The process also provides policy guidance for the staff and authorizes the staff to expend the increasing amounts of time and money involved as a project progresses.

With respect to the development of an overall construction program, the proposed process is designed to permit and require both the staff and the board to look at the whole forest as well as the individual trees. This proposed process, together with the use of the criteria discussed previously, is designed to insure that not only individual projects are justified, but that the relative priority of individual construction projects is determined and that the priority of the overall construction program is weighed against the operating programs of the commission in the budget process.

It is recommended that the road commission implement the construction project-program development process outlined in Exhibit 2.

The proposed process was submitted to the staff and the board of road commissioners during the course of the study and some elements are currently being implemented. It is contemplated that a 1975 construction program will be submitted for board consideration in the late summer or early fall of 1974. This represents significant progress and timely board approval of the program will permit a head start in implementing the 1975 program.

The goal in the proposed process is to have a full year of lead time so that right-of-way can be acquired and utilities moved in advance of actual construction. Further, one year of lead time will permit orderly scheduling of the various phases of engineering activities and the letting of contracts at optimum times.

It is recommended that the road commission continue its efforts to provide greater lead time in construction program planning and set as a goal a full year of lead time for the 1977 construction program.

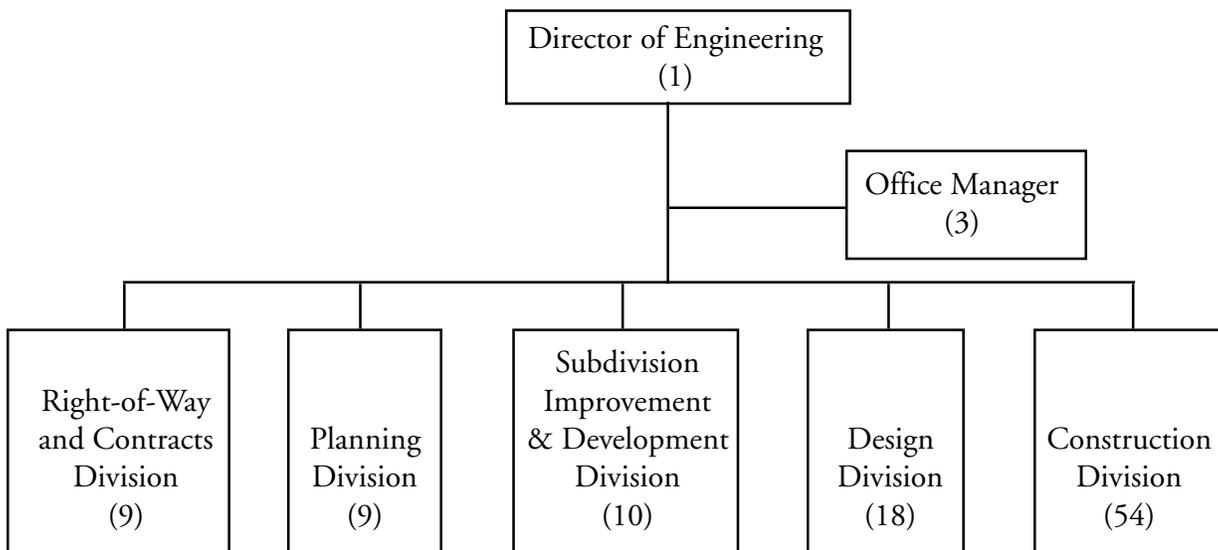
During the remainder of 1974 and in early 1975, the commission should develop the 1976 construction program and in late 1975 should have in process projects for the 1977 program.

ORGANIZATION OF THE ENGINEERING DEPARTMENT

The engineering department is organized in five major divisions as shown in Chart I below.

Chart I

Organization of the Engineering Department
(Total number of employees budgeted in 1974 shown in parentheses)



The 1974,budget authorizes a total of 104 positions in the engineering department.

The director of engineering is responsible for directing and coordinating the efforts of the five divisions in the department. The director works closely with the county highway engineer in developing the construction program and is primarily responsible for supervising the execution of the construction program once it has been approved.

Execution of the construction program involves close coordination of the efforts of the right-of-way and contracts division, the design division, and the construction division. In addition, other operating depart-

ments (traffic, permits and special uses, and maintenance) are also involved in various phases of construction and their efforts must also be coordinated with the engineering department.

The scheduling of the overall construction program as well as the various phases of each construction project and maintaining the schedule are basic responsibilities of the director of engineering. While developing a one-year lead time on construction projects will make easier the task of scheduling projects, this will continue to be a major concern of the director of engineering.

It is recommended that the director of engineering in consultation with his division heads establish time schedules for each phase of construction projects and for the overall construction program and submit a monthly report to the county highway engineer on progress on each project. The county highway engineer should submit a monthly summary report to the managing director for transmission to the board of road commissioners.

Related to the task of scheduling construction projects is scheduling the transfer of personnel between the design division and the construction division to meet peaks in workloads.

It is recommended that the director of engineering establish a schedule for the transfer of personnel between the design division and the construction division.

As described in the section of this chapter on the several divisions of the engineering department involved in the execution of the construction program, there is a sizeable flow of paperwork involved in each project. In order to insure that the necessary paperwork is assembled in one single location and completed in accordance with the time schedule,

It is recommended that the director of engineering establish a central file and clearing house for all documents relating to a construction project and that the engineering aide III specialist who serves as office manager in the engineering department be assigned the responsibility for maintaining the master file and the proper flow of documents.

It was noted during the study that a number of construction projects appear year after year on cost accounting reports. When a project is under construction, all charges should be made to the budgeted appropriation for the project. However, when the project is completed and accepted by the road commission, the budgeted account for that project should be closed out when all the charges incurred prior to the date of acceptance have been recorded. The road commission has a procedure for closing-out projects that requires the various divisions and departments involved to "sign off" that the work has been completed to their satisfaction. However, it does not appear that there is any follow-up to insure that the necessary paperwork is completed.

It is recommended that the director of engineering take responsibility for obtaining the necessary clearances from the divisions and departments involved to "close-out" construction projects.

In performing this task the director should rely on the assistance of the office manager who will be maintaining a central file on each project. While there will be occasional charges attributable to projects that have been closed out, these charges can be made to general engineering costs. Normally these “late” charges are not included in the billings to participating units, but are absorbed by the road commission.

RIGHT-OF-WAY AND CONTRACTS DIVISION

The right-of-way and contracts division is responsible for acquiring right-of-way and for certain duties relating to construction contracts. The division has an authorized staff of nine employees. The right-of-way and contracts engineer is head of the division. The staff consists of one right-of-way attorney, one stenographer and six engineering aides—three of whom are right-of-way buyers, two technicians and one draftsman.

All of the right-of-way required for new construction is acquired by this division and dedications of right-of-way are also handled by this division. Today the Oakland County road commission is paying the price for an historical failure to acquire sufficient right-of-way for its roads. The road commission did not have established policies with respect to acquiring right-of-way and its practice was to acquire as little right-of-way as possible—perhaps because of limited financial resources. The result is that when the commission undertakes road improvement projects, particularly road widening and intersection improvements, it must acquire additional right-of-way. In some cases, the right-of-way is difficult to obtain and the cost is high, particularly in the urbanized or developing areas. The highway needs study undertaken in 1970 indicated that during the period 1970 to 1990 construction needs in Oakland County would total \$1.5 billion. Of this amount, one-third or over one-half billion dollars was identified as the cost for obtaining needed right-of-way.

While the adoption and implementation of the master right-of-way program, described in the section of this chapter on the planning division, should prove helpful in the future, at the present time the acquisition of right-of-way is a major problem. This problem has been complicated by the fact that there has been inadequate lead time in establishing the construction program, with the result that construction of some projects must be delayed until the necessary right-of-way is acquired.

The road commission should assign a high priority to accelerating the acquisition of right-of-way. The goal should be to acquire necessary rights-of-way one year in advance of contract letting. While the previous recommendations regarding the development of the construction program will assist in meeting this goal, several other steps are necessary.

It is recommended that the road commission establish an advance right-of-way acquisition revolving account with an initial appropriation of \$250,000.

This will provide “working capital” to be used for the acquisition of right-of-way in advance of final appropriations for the project. When the appropriation for the entire project is made in the annual budget, the revolving account would be reimbursed for the cost of the right-of-way.

While the staff of the right-of-way and contracts division was augmented by one position in the 1974 budget, it will be difficult for the division to catch-up and to gain one year of lead time. The Michigan department of state highways and transportation apparently now has available experienced right-of-way personnel as a result of reduced freeway work.

It is recommended that the road commission contract with the Michigan department of state highways and transportation for the acquisition of right-of-way for federal aid projects in urban areas.

The road commission staff could then concentrate on acquiring the necessary right-of-way for non-federal aid projects and achieve the one-year lead time.

The contracts work of the right-of-way and contracts division involves the drafting of contracts for road improvements. The basic responsibility of the division is to draft in formal contract language the participation agreements negotiated by others and the construction proposals prepared by the design division. The head of the division and the attorney both have experience in drafting these types of contracts.

At present, apparently some agreements and contracts are signed without review by the right-of-way and contracts division. In order to insure that agreements and construction contracts are in the proper form,

It is recommended that all financial participation agreements and construction contracts be cleared through the right-of-way and contracts division.

The contracts division should be present at the opening of bids and should review the documents necessary for awarding the contract. The contracts division has no direct responsibility for the execution of agreements or construction contracts except that it is responsible for initiating the billings to cities and other counties as provided for in the participation agreements. It does not, however, have similar responsibility for billing townships—this is handled by the accounting division and the county highway engineer. It does not appear necessary for the contracts division to be involved in the billing process.

It is recommended that the responsibility for making billings to cities and other counties be transferred to the proposed department of finance.

The billings would be initiated by the office manager in the engineering department who will provide a clearinghouse function for all of the paper work involved in a construction project.

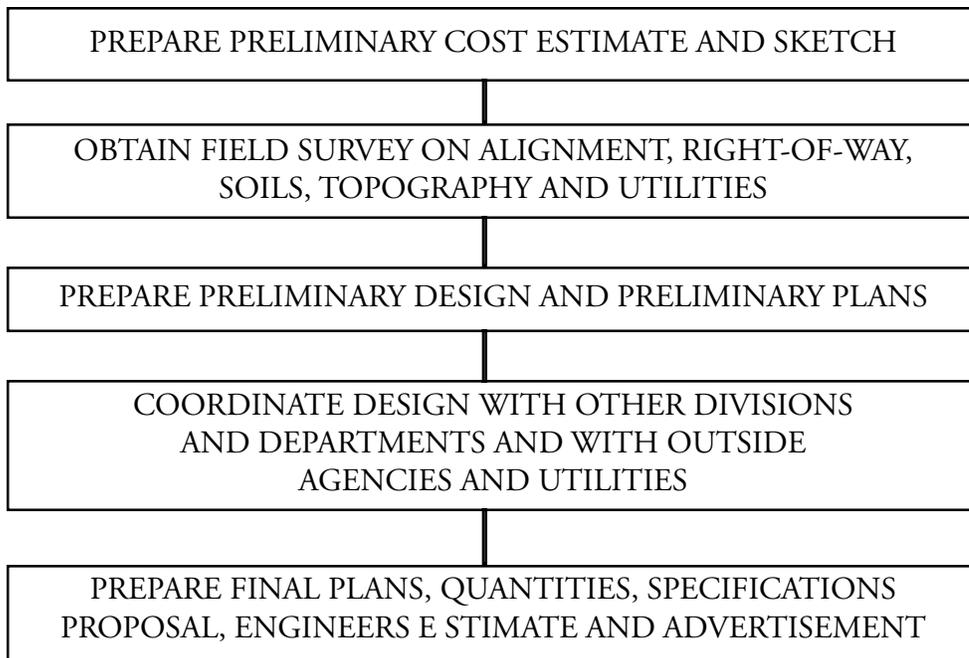
DESIGN DIVISION

The design division is headed by a design engineer who reports directly to the director of engineering. The staff of the division consists of five civil engineers and 12 engineering aides.

The primary function of the design division is to gather all of the data and prepare all of the drawings and specifications for proposed highway improvements. The division plays a major role in construction projects from conception to awarding the contract. Exhibit 3 shows the major steps in the design of a construction project.

Exhibit 3

Flow Chart to Design a Project
Design Division



The design division maintains the sources of information on materials, standards, and methods used in highway improvements by the federal road agencies, the state department of highways and transportation, the Oakland County road commission, and others. From these sources are drawn the standards, specifications, and supplemental specifications needed in all the highway contracts and departmental road work.

In addition to designing primary and local road construction projects, the design division also provides technical assistance to the subdivision improvement and development division, to the maintenance department, and to the permits department.

A primary recommendation in this report with respect to the engineering department is to increase the lead time on proposed construction projects with the goal of having a full year of lead time for the 1977 construction program. The design division plays a vital role in achieving this objective since it is involved in all phases of moving a project to the actual construction stage. The design division has not been staffed and is not currently staffed to provide the necessary lead time on construction projects. In 1972, the road commission spent \$6.6 million on road construction projects. In 1973, this expenditure increased to \$12.7 million.

In 1974 the commission has budgeted a total of \$18.7 million for construction. The 1974 program represents almost a 50 percent increase over 1973 and a 180 percent increase over 1972. During this same period, the authorized staff of the design division was 17 in 1972, 17 in 1973 and 18 in 1974.

One alternative to providing an adequate staff to perform the necessary design work is to contract for design work with consulting engineering firms. The road commission now uses consulting engineers for specialized problems such as bridge design and for the more routine work involved in subdivision street design. However, most of the work performed by the design division does not lend itself to outside contracting since the consulting engineering firms generally have limited experience in highway design work. The design of federal aid projects involves knowledge of very complex rules and regulations. The design of multi-lane primary roads with divided lanes, exit and ingress ramps and complex intersections require considerable expertise and experience.

Preparing specifications, standards, programming, review of plans and of state or federal design standards should be done by design division engineers. New ideas in highway design, new materials, new concepts in road surface must be own to this division. The knowledge and experience gained by the design division engineers in developing construction projects is invaluable to the road commission in undertaking future projects.

It is concluded that staff engineers of the road commission should be responsible for the design of most of the ongoing road improvement projects, with consulting engineers used primarily for specialized design problems in which the staff lacks expertise or for meeting any unavoidable peaks in workload in areas such as the design of subdivision streets.

The problem of meeting peaks or valleys in the design division workload can be minimized by several steps. The design division should be designing projects well in advance of construction—an average of 12 months' lead time has been recommended. To meet peaks or valleys in design work the lead time could be reduced or increased as necessary. There is minimal risk in designing projects in advance of final approval of the project since, if a project is dropped from the construction program for one year because of lack of funds, it will normally be included as a high priority project in the program for the following year.

It is recommended that the design division work toward completing the design of projects one year in advance of construction for the 1977 construction program.

In addition, there is presently an interchange of personnel between the design division and the construction division. During the construction season, personnel are shifted to the construction division for survey work and inspection, while during the winter months personnel are shifted to the design division to do field surveys and drafting. This interchange results in more efficient utilization of personnel and assists both divisions in meeting their peak workloads. Maximum benefit of this interchange can be achieved, however, only if it is carefully scheduled and controlled.

The present staff of the design division is not adequate to meet its present workload and to design new projects sufficiently in advance of construction. While the present number of civil engineers appears to be adequate for the present level of the construction program, additional technical assistance appears to be required.

It is recommended that the director of engineering and county highway engineer develop as part of their 1975 budget requests staffing requirements that will enable the design division to meet the goal of designing projects approximately one year in advance of construction for the 1977 construction program.

Since technical personnel are generally interchangeable between the design division and the construction division, the additional of technical staff should assist both divisions in meeting their workload requirements.

CONSTRUCTION DIVISION

The construction division is responsible for supervising and inspecting the construction by contractors of the road commission highway improvement program. The function is to assure that highway projects are constructed in accordance with the plans and specifications and other terms of the construction contract and to report for payment the work accomplished by the contractor.

The construction division is headed by a construction engineer who is directly responsible to the director of engineering. The 1974 budget authorized total personnel of 54 including: construction engineer 1; civil engineers 8; engineering aides 44; stenographer 1.

The construction division is organized into the following groups which report to the construction engineer:

The central office group consists of the construction engineer, a stenographer, an engineering aide III who serves as the construction records clerk, and an engineering aide III (specialist) who serves as a utilities coordinator.

The materials inspection group is headed by an engineering aide IV who is assisted by seven engineering aides.

The soils inspection group is headed by an engineering aide IV who is assisted by three engineering aides.

There are five project engineer groups each headed by a civil engineer. In addition, there are 33 regular employees assigned to these groups—three civil engineers, who are receiving training, and 30 engineering aides.

Soils Inspection and Materials Inspection

The soils inspection group of the construction division engages in the study of the soil foundation for a highway improvement. After a study of the soil, recommendations are made as to the advisability of strengthening the soil foundation in some manner, completely replacing the soil to a certain depth and area, or using the soil as it is with subbase drainage or other corrective measures. When an embankment is to be

made, or a road base replaced with new material, this group makes frequent tests during the compaction of the new materials to assure that density requirements have been attained.

The materials inspection group within the construction division is responsible for determining the asphalt and portland cement concrete mixtures used in the highway improvement projects. They determine the percent of entrained air in portland cement concrete necessary to combat the detrimental effects of salts used for ice control work. After a portland cement concrete pavement project is completed, samples are taken to determine the average depth of the pavement. The depth of pavement must be as specified or the contractor is penalized. These core samples are then tested for compliance with the strength requirements. This group tests the quality of materials used in construction and their proportions for compliance with the specifications. Such things as aggregates for asphalt and portland cement pavements are tested for gradation and deleterious particles.

These two groups of the construction division perform their respective functions for other departments including permits, maintenance, and the street improvement and development division. When time allows or circumstances require, research work on new materials or mixtures is undertaken.

At present the materials inspection group and the soil testing group each report directly to the construction engineer. A testing group should be completely independent of the division whose work may be delayed or found wanting by an adverse report. In most of their work these testing groups are checking the quality of materials or their proportions—a small but important part of a large operation. The significance of this work can easily be lost in the effort to keep the job progressing.

It is recommended that a separate testing division be established directly responsible to the director of engineering.

The director of the testing division should meet as an equal with the director of the construction division to discuss the findings of the tests. If a judgment must be made as to the extent of non-compliance or variance, it should be made by the director of engineering. The staff for the new division should consist of the 12 engineering aides presently engaged in this work.

Role in the Construction Process

While preliminary construction plans, at least for major projects, are submitted to the construction division for comment, the division's major responsibilities in the construction program begin after final plans and specifications have been prepared and the project is to be let for bids. The construction division provides copies of the plans and specifications to contractors interested in bidding the project and meets with them to review the plans and specifications. The construction division secures from interested bidders their state pre-qualifications for highway construction work, determines how much work the contractor already has under contract and the "unencumbered" balance. The road commission has relied exclusively on the state highway department's pre-qualification of bidders and in some instances has experienced poor performance by contractors despite their pre-qualification for state highway department work. It appears that in some circumstances contractors may use their best talent, equipment and efforts on state or federal projects with

county projects ending up with what is left. While the state highway department pre-qualification list must be used to determine who is eligible to bid on state or federal projects, the road commission could include additional qualifications based on its experience with contractors on county-local unit financed projects.

It is recommended that on other than state and federal projects the road commission include a requirement of satisfactory performance on prior projects in its pre-qualifications for contractors who have previously done work for the road commission.

A procedure for establishing a record of performance contractors is discussed at the end of this section.

Before the contract is awarded the construction division holds a pre-construction meeting with the contractor, sub-contractors, affected utilities and other interested parties. At this meeting a progress schedule is determined which is incorporated in the formal contract and the contractor supplies the bond, insurance, etc. When all necessary documents are assembled, the final contract is submitted to the board of road commissioners for approval.

The construction engineer then schedules the particular project into the overall work program of the division and assigns it to one of the project engineers who generally is responsible for a number of projects in a geographical area. The project engineer, assisted by a group of engineering aides, is responsible for supervising and inspecting the project and approving payments to contractors for work performed.

There are three principal problems involved in this process: (1) scheduling of inspection work; (2) adequate staffing; and (3) auditing and reporting of work accomplished.

Scheduling of Inspection Work. The scheduling of inspection work is normally done in advance based on the bid letting schedule prepared by the design department. However, the letting schedule often changes as a result of delays in design of projects, right-of-way acquisition or other steps that must be taken prior to construction. This contributes to the "bunching" of construction projects with the result that the construction division has a difficult problem in providing inspectional services on the projects.

While a peak workload for the construction division during the construction season is inevitable, improved scheduling of projects during the season would facilitate the inspection process. The previous recommendations regarding achieving a one-year lead time on the design of projects and acquisition of right-of-way should result in a better scheduling of construction work.

Analysis of the construction division's vacation schedule for 1973 indicates that 60 percent of the vacation time was scheduled during the six-month period May through October which is the optimum construction period, while only 40 percent of vacations were scheduled during the winter months.

It is recommended that the construction division schedule vacations to provide the largest possible work force during the construction season.

Adequate Staffing. While improved scheduling of the construction program and of vacation periods for employees will assist in providing better utilization of present staff, the importance of providing adequate staff to perform construction supervision and inspections should be stressed.

The type of construction contract utilized by the road commission is based on a unit price for the estimated quantity of each activity with detailed specifications as to materials. The contracts are very detailed, specifying, for example, the number of trees 8-12 inches in diameter that must be removed and the unit price, or the estimated number of cubic yards of earth that must be excavated with a price per cubic yard. The contractor is paid only for the quantity of work actually performed, so if fewer cubic yards of earth are excavated than estimated in the contract the contractor is paid only for the amount actually removed. The field inspector is responsible for determining the quantities of work performed and that it is done in accordance with the plans and specifications. Thus, an inspector should be on the construction project site when the contractor is working on the site. On minor projects an inspector may be able to inspect several projects at once, but on major projects one or more inspectors must be on the job at all times the contractor is working. Federal regulations require that an inspector be on the job at all times on federal aid projects.

The size and complexity of the construction program on primary and local roads has increased significantly in the past few years, increasing from \$5.0 million in 1972 to \$10.8 million in 1973 to about \$16.2 million budgeted for 1974. These figures exclude the special assessment program which is supervised and inspected primarily by the subdivision improvement and development division.

In 1972 there were 30 projects and five project engineers or an average of six projects for each engineer; in 1973 there were 48 projects and six project engineers or an average of eight projects for each engineer. The prospect for 1974 and subsequent years is for even more projects. Similarly, the survey parties in 1972 averaged 7.5 projects and in 1973 the average was 12. Under the staffing authorized in the 1974 budget, there are five project engineer groups. Each group consists of the project engineer and five to seven engineering aides (or civil engineers who are receiving training in field inspection). These five to seven employees in each group make up a survey crew of two or three members and three or four project inspectors.

Since there are many factors that affect the amount of supervision and inspection required on a project, including size, complexity location, and other variables, no exact figure can be stated as the ideal number of projects that each project engineer can supervise successfully. But as the number of projects increase it will be necessary to reexamine the degree of supervision each project engineer is able to give to his allotted number of projects. When the maximum is exceeded, the quality of the work is bound to suffer.

It is recommended that at the end of each yearly construction program an appraisal be made of the number of projects each project engineer, survey crew, and inspector had to supervise. A quality appraisal should be made to determine whether or not the standard of quality is being maintained.

While the engineering costs on construction projects are a proper matter of concern, they must be viewed in relation to the benefits of having roads well designed and properly constructed. The "Analysis of Construc-

tion” for 1973 prepared by the accounting division from cost accounting records shows the following breakdown of the costs assigned to construction projects in 1973. The figures exclude the \$1.8 million in special assessment projects which are handled by the subdivision improvement and development division.

County Primary & Local Road Costs in 1973
(excludes special assessment projects)

<u>Element</u>	<u>Percent</u> <u>Amount</u>	<u>Costs</u> <u>of Total</u>
Direct labor charges to projects	\$930,209	8.5%
Equipment rentals charged to projects	173,106	1.6
Overhead & fringe benefits	731,954	6.7
Subtotal	(1,835,269)	(16.7)
Materials	468,194	4.3
Right-of-Way acquisitions	279,583	2.6
Construction contracts	<u>8,323,506</u>	76.3
Total Costs Assigned to Construction Projects	\$10,906,552	100.0%

The direct labor charges to construction projects primarily by engineering department personnel totaled \$930,000 or 8.5 percent of the total costs of \$10.9 million. Charges for rentals of equipment used by the field inspectors and others were \$173,000. Overhead and fringe benefits charges is a very broad category that includes all engineering department salaries except those charged to specific projects, a share of the expenses of operating the road commission building (utilities, etc.) and of other overhead costs and fringe benefits costs. These charges were \$732,000 or 6.7 percent of total costs.

These three categories combined, which might be considered “engineering” costs, represented 16.7 percent of total construction costs. While total “engineering” costs as a percent of total construction project costs can be expected to vary depending upon the nature and complexity of the projects undertaken in any years the judgment of the Research Council consulting engineers is that total “engineering” costs of 16.7 percent of total project costs is relatively low.

Auditing and Reporting of Work Accomplished. Not only does the construction division supervise the construction of a contracted highway improvement, it is also responsible for the auditing and reporting of the work accomplished. This is necessary since the contractor is paid at intervals for work accomplished during a pay period.

A review of the methods used in reporting and accounting by the construction division on contract construction projects has resulted in a number of suggestions for a more positive reporting and accounting system. These suggestions deal only with the construction division. The procedure recommended is essentially the same as required where federal funds are involved.

There are four phases involved:

1. Reporting work accomplished daily.
2. Collecting this data on work done and periodically accounting for payments to be made to the contractor.
3. Authorizing any change in the contract.
4. After completion of the project, the final reporting and auditing by the engineering department of all work done and all payments made to contractor, and all costs charged to the project by other departments.

1. Reporting—Each inspector is required to prepare a daily report dealing with the specific section of work under his control. This report made at the site of the work is considered as the authentication necessary to substantiate the fact that the work was actually completed in accordance with the specifications and in the quantity reported. When the item of work accomplished cannot be re-measured by reason of obliteration, removal from the project, or any other reason, authentication is obtained by having the contractor's representative sign a quantity agreement form. These procedures are currently being carried out by the construction division.

2. Authorizing Payments—A compilation report, covering all the reports submitted by the inspectors on a project, is prepared by the project engineer at stated intervals of time, usually monthly in Oakland County. This report is known as the "Contract Construction Estimate."

The contract construction estimate contains the quantities of work accomplished within the designated period, the unit price, and the extension of these figures as the amount earned by the contractor. The project engineer's report is recommended by the construction engineer, approved by the director of engineering and by the county highway engineer, and finally approved for payment by the managing director.

It is recommended that the "contract construction estimate" form be submitted by the county highway engineer to the finance director for review of project appropriation balance prior to final approval for payment by the managing director.

3. Authorizing Changes—If during the construction of a contract project it becomes necessary or desirable for the proper completion of the work to recommend changes, or additional work done, or materials furnished which are not listed as items in the original contract, then this material or work becomes a change in the contract. Another change in the contract may be an extension of time required for completion. Since all of the above items could constitute a change in the contract, written approval of the board of road commissioners, or its duly authorized representative, should be secured. Such authorization should be secured for any of the following: changes of contract; extras to contract; extension of time; or, alteration of existing contract items.

The mechanics for effecting any of the above changes should follow a definite pattern. A change must start with a recommendation to make the change. Recommendations are prepared by the project engineer. They should be worded so they will be self-explanatory to anyone unfamiliar with the details of the work. They should contain all the necessary data including drawings, a complete breakdown of costs, if applicable, and, each change recommendation should be independent of other change recommendations. Each recommen-

dation on a project should be serially identified, and contain the statement “Recommended changes and extras up to and including this recommendation are equal to a net increase or decrease of \$ ____ and ____% of the contract price” (see proposed sample form attached).

The recommendation becomes an authorization only after final approval is given by the board or its duly authorized representatives. In order not to overly burden the board of road commissioners with minor changes, or unduly delay a project, the board should establish policies dealing with these contract changes.

Common practice among highway agencies dealing with highway contracts is to have a procedure dealing with these contract changes based on a dollar value of the change. The control becomes more stringent as the dollar value increases. Usually there are three classes of changes:

a. Minor in dollar value - these are balancing items of work (or materials) as the work progresses, or changes less than \$500 in value. Authorization by the construction engineer, the director of engineering, the county highway engineer, and the contractor would be required. Changes in this class should be presented to the board for approval at the completion of the construction, or when the total of all changes exceeds \$5,000 or five percent of the contract, whichever is smaller.

b. Moderate in dollar value - these would include larger changes in the original contract. Examples might be more extensive removal of unstable soil and replacement with suitable backfill, rerouting of sewer because of an unforeseen obstruction or any condition that will require a substantial revision of contract units of work. The board should establish a policy that would allow certain designated members of its staff to authorize the changes in this class within a dollar value limitation. Approval of these changes would require approval of the finance director and the managing director in addition to approval by the construction engineer, director of engineering and county highway engineer. The signature of the contractor’s representative must appear on all authorizations. The board should authorize the above-listed representatives to authorize any single change not to exceed the amount of \$5,000 or five percent of the total contract, whichever is smaller, or until all the authorized changes exceed the amount of \$20,000 or ten percent of the total contract, whichever is smaller. The changes will be authorized by the board on completion of the construction or when they would exceed the board’s limitations.

c. Major changes - these would include large extra items not originally in the contract, changes exceeding the limitations in item “b”, and all extensions of time for completion of the contract. Examples might include changing the date for completion, removal of major obstruction buried in the ground and not known before excavation, substantial changes in the contract due to additional work such as increasing contract limits or improving an intersection by adding turning lanes. A change recommendation of this class should include all the signatures required in item “b” and be presented to the board for formal approval. If the recommendation is one that requires additional funds, then information on the transfer of money for the increased expenditure should also be included in the recommendation. Work must not be started until the board approves the change.

If an emergency arises on a contract project, the county highway engineer is expected to disregard the usual procedures outlined above in protecting the traveling public and the road commission interest.

It is recommended that the board of commissioners adopt a formal policy on the authorization of changes in construction contracts as set forth herein.

4. Project Completion—When the project is completed, the history of the project will contain a complete balance between work contracted and work actually performed. All changes will have corresponding authorizations and all necessary supporting data. The documentation procedures with reference to changes, and more specifically to extras, should have as an objective the basic requirement that an independent audit of any project will be able to clearly identify any and all changes and the authorization therefor. The “as constructed” history will include the reasons for all changes from the “as planned” together with the required initial authorization and final board approval.

The history should include an opinion on the performance of the contractor. This should list all relevant facts that led to satisfaction or dissatisfaction with his work, and explain in as much detail as necessary the reasons for the judgments formed. This material will be used for future reference in pre-qualification or disqualification of the contractor, so full documentation is essential.

It is recommended that an evaluation be made of the performance of the contractor on each project.

An evaluation form similar to the one that must be used for federal aid projects would be appropriate.

SUBDIVISION IMPROVEMENT AND DEVELOPMENT DIVISION

The subdivision improvement and development division deals with the improvements of those local roads sometimes known as subdivision streets. The road laws of Michigan do not recognize the term “subdivision street,” but the term is well known and for the sake of clarity these local roads will be designated as subdivision streets in this report.

There are five principal parts to the functions of this division:

1. Complete plat review submitted by developers for subdivision street layout.
2. Inspect subdivision street construction done by developers.
3. Hold hearings for street improvements under special assessment process.
4. Prepare plans, let bids and supervise construction of all street improvements under special assessment process.
5. Calculate the amount of benefits for each owner of property included in special assessment district.

To carry out these activities the division has a 1974 authorized staff of ten. The subdivision improvement and development engineer is director of the division and reports to the director of engineering. He is assisted by a civil engineer III, a plats development supervisor, six engineering aides and a stenographer.

Platted Subdivision Streets in New Developments

The laws of Michigan governing the subdividing of land give the road commission the right to set requirements for drainage and standards for the types of surfaces and bases for the streets being platted. These laws became effective in 1967 (Subdivision Control Act of 1967). There were laws that gave the road commission some degree of control of subdivision development as early as 1929. The Oakland County road commission adopted its present Plat Development Standards and Specifications December 8, 1970. The present standards require a 27-foot pavement, full depth of pavement of either concrete or asphalt (6"-9"), treated sub-base and enclosed drainage. The present standards provide for a high-type quality subdivision street.

During the construction of subdivision streets by developers, this division furnished inspectors to enforce the road commission standards and specifications. The division makes recommendations for any changes that seem advisable for improving the serviceability of these streets.

Subdivision Streets in Older Developments

One of the most pressing problems of the Oakland County road commission is the condition of subdivision streets in the older developments. It is necessary to go back into history for the proper perspective of the problem. In the 1920's the land boom in Southeastern Michigan affected Oakland County. Subdivisions blossomed in many townships and the types of streets built in the subdivisions were under township jurisdiction. While the facts are lost in antiquity, it is reasonable to assume most townships had few if any requirements as to type of surface, base and drainage. Even if a high type of pavement had been constructed back in the 1920's, these streets are approaching fifty years of use, which is beyond the normal life expectancy of any type of street.

During the 1930's the state laws were amended, abolishing the townships' jurisdiction over all roads. Thus, under the McNitt Act, the county acquired jurisdiction of all township roads, including the subdivision streets. Although there was very little construction of subdivision streets during the depression years and into the war years, some miles were built during this period.

In any event, the rules and regulations as to type of construction and drainage are not recorded until 1947. During the time from the 1920's until 1946, as many as 235 miles (closest whole numbers have been used in this report) of subdivision streets were constructed in Oakland County with no recorded standards or requirements.

From 1947 to 1955, the board's requirements for platted streets were rather nebulous. In essence they required eight inches of processed gravel in a twenty foot trench with open ditches for drainage. During this period 88 miles of gravel streets were built. Subdividers, of their own choice, added some asphalt surface to another 24 miles. This constitutes 112 miles built under the first recorded attempt to regulate the construction of subdivision streets.

From 1955 to 1961 the Board's requirements were more stringent with the requirement of a two-inch plant mix wearing surface over two four-inch compacted base courses, with narrow gravel shoulders. Under these requirements 80 miles of streets were constructed. In addition, 213 miles were constructed to an even higher standard by the voluntary choice of the subdividers. The total built during this period was 293 miles.

In 1961 the standards were further tightened to include provisions for the treatment of undesirable subsoil drainage and unstable subbase—103 miles were constructed under these requirements.

In 1967 the addition of curb and gutter with enclosed drainage and a wider pavement were required—55 miles were constructed under these requirements.

The final step-up in requirements was started in 1971. These newest standards include a 27-foot pavement, full depth of either concrete or asphalt, treated subbase and enclosed drainage—52 miles have been built under this requirement.

A recapitulation shows the total mileage of subdivision streets constructed as follows:

1920 to 1947	235 miles
1947 to 1955	112 miles
1955 to 1961	293 miles
1961 to 1966	103 miles
1967 to 1970	55 miles
1971 to 1973	<u>52 miles</u>
Total	850 miles

During the period of 1920 to 1947, in which 235 miles of streets were built, it is reasonable to assume that the requirements were minimal or non-existent, and so was the inspection. Some of these streets are as much as fifty years old, the newest are at least twenty-seven. The majority have reached the age of obsolescence. The 88 miles of gravel streets constructed in the period 1947 to 1955 and the 80 miles of streets constructed under the minimal standards in effect from 1955 to 1961 are also obsolete and inadequate. Thus, a total of over 400 miles of subdivision streets, almost half of the total, are obsolete and inadequate and should be reconstructed.

In order to keep these streets functioning, constant maintenance is necessary. Routine maintenance is not sufficient. The cost of anything beyond routine maintenance must be taken from the funds allocated by the state for more heavily traveled roads. At the time these subdivision lots were sold, the buyers paid a very small amount for street improvement. Today's buyers, on the other hand, are required to include the price of today's expensive street construction in their purchase price. The law provides a means for these streets to be reconstructed through use of the special assessments process. This process is described in detail in the following section on "The Special Assessment Improvement Program." While the road commission has made significant progress in the past several years in improving subdivision streets through the special assessment process, the magnitude of the job still to be done indicates a need for a substantial increase in efforts in this area.

It is recommended that the board of road commissioners develop a comprehensive ten-year plan to improve these 400 miles of subdivision streets which are obsolete and inadequate and give high priority to implementing the program.

There are a number of steps that the board of road commissioners can take to facilitate implementation of such a program. First, there are a number of improvements needed in special assessment procedures that are outlined in the section on “The Special Assessment Improvement Program.”

Second, the cost to the homeowner of special assessment improvement projects is an obstacle to encouraging citizens to make greater use of special assessments to improve their subdivision streets. In order to encourage residents and townships to make greater use of the special assessments process for improving the subdivision streets included in the proposed ten-year program,

It is recommended that the board of road commissioners consider increasing its share of special Assessment project costs from the present ten percent to 15 percent of total project costs, providing that the townships provide matching funds.

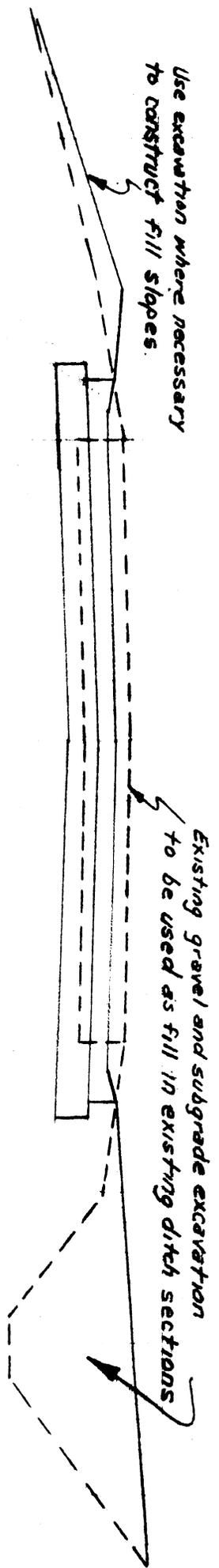
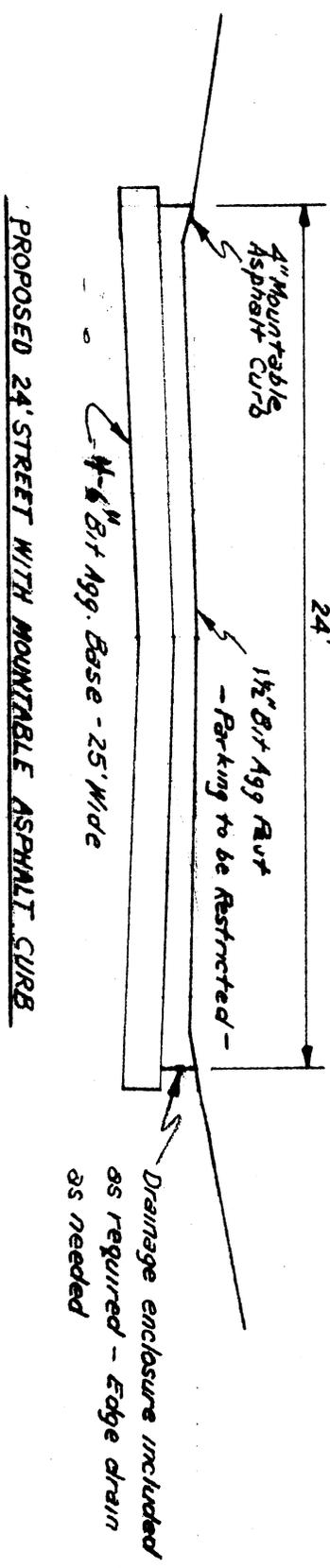
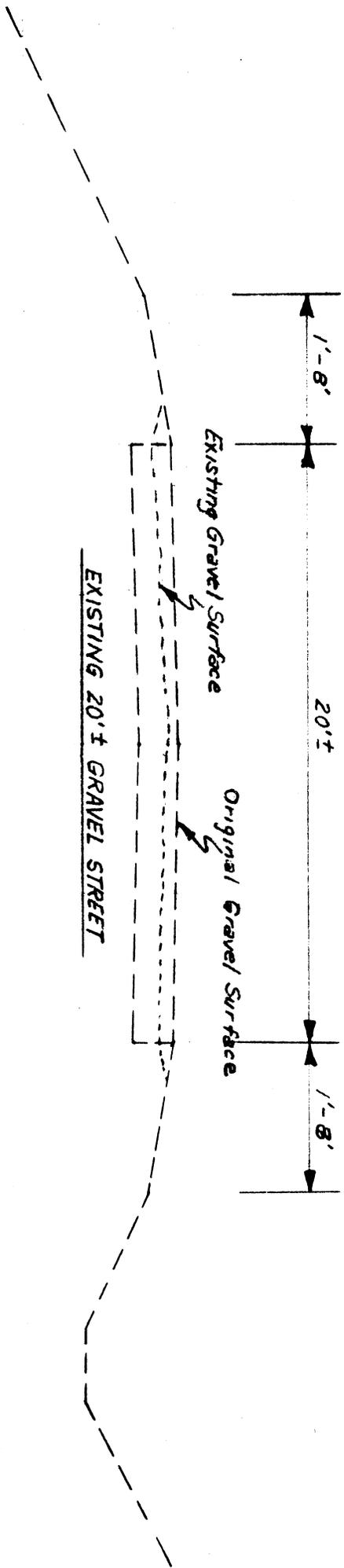
The reduction in the homeowner share of the cost of a special assessment from the present 80-90 percent of total cost to 70 percent should stimulate use of the special assessment process. The road commission should pay a 15 percent share of the cost only if the township agrees to pay a matching 15 percent. While the increase to 15 percent would initially cost the road commission additional money, over the long run the road commission would benefit substantially through reduced maintenance costs, a reduced number of complaints and avoiding “crash programs” to get people out of the mud.

A third step that could be taken to encourage use of the special assessment process to improve these substandard subdivision streets would be to provide an alternative type of construction that is lower in cost. While the present construction standards are not excessively high, they do provide a first class street at an average cost of \$150,000 to \$200,000 per mile. It is possible to provide a somewhat lower quality but still satisfactory improved subdivision street at a somewhat lower cost.

There are a number of elements that must be considered in recommending a type of pavement for upgrading a substandard subdivision street. The design must include those elements that make a pavement durable: proper drainage, adequate base, and a surface that will wear well. All of these must be weighed against the cost.

The consulting engineers to the Research Council on this study, in consultation with staff of the road commission, developed an alternative design which might be suitable for improving many of the present substandard subdivision streets (see drawing on following page). In the alternative design proposed, it is possible to economize by reducing the width of the pavement from 27 feet to 24 feet. This can be accomplished by confining the parking to the south or east sides, or to the north or west sides uniformly wherever this standard is used. Since most of the subdivision pavements have always been narrow, their users have long been accustomed to parking without obstructing traffic, and uniform restrictions should be welcomed rather than resented.

The alternative design provides for a four-inch mountable curb. Proper drainage is provided by a sewer system of closed drainage, with all the existing ditches filled in with the excavated material. If the water table is high, extra drains must be provided. The design calls for rough grading, using all the excavated



RECOMMENDED STANDARD FOR SUBSTANDARD SUBDIVISION STREETS

W. J. Worth, P.E.

material available. The design allows a more formal section to be made by the owner from the top of curb to his property by seeding or sodding after the project is completed.

The base course is a hot mixture of asphalt and aggregates with a varying depth of from four to six inches, depending on the nature of the underlying soil. In some instances it may be necessary to replace subbase material to strengthen the base foundation. This is the type of base course that has been used for many years by the Oakland County road commission, and its value has been demonstrated.

The wearing course consists of one and one-half inches of hot plant mixed asphaltic concrete. The methods and materials recommended for this design are well proven by years of experience under varying-conditions throughout Oakland County and elsewhere.

The cost of the alternate design would be from one-half to two-thirds of the cost of the present design standard for new subdivision streets. At 1973 prices, the alternate design would cost about \$100,000 per mile. The differences between the standard design and the alternate design should be clearly pointed out to any subdivision group considering the alternate because it is a less deluxe improvement although it is serviceable and adequate.

It is recommended that the road commission provide as an option an alternate subdivision street design for special assessment projects that incorporates lower but adequate standards and is less expensive than the present standards.

The proposed alternate standard should be used only for upgrading existing subdivision streets. It is not intended to be used in new subdivisions—the present standard is proper for new subdivision streets.

The consulting engineers also evaluated several other possible types of treatment for these subdivision streets including seal coat, cement stabilization and the use of slagcrete.

Seal coat is a coating of asphalt between 1/16 and 1/8 inch in thickness, covered with mineral aggregates. It is used to cover a dried asphalt surface, surfaces that have small cracks or portland cement surfaces. A seal coat can be compared to a coat of paint. It covers a surface without adding any strength or correcting any base defects or improving riding conditions. Seal coat treatment would not result in any significant improvement for the 400 miles of subdivision streets that need reconstruction.

Cement stabilization is the name given to a mixture used to make the base or foundation for a surface course. It is composed of a well-graded coarse aggregate to which is added six to ten percent of portland cement. This combination is mixed with water and compacted into place. Cement stabilization requires a period of time to attain sufficient strength to allow the placing of the wearing course which follows. The curing period is usually a week or ten days but this period can be prolonged due to unfavorable weather conditions.

The shortcomings of this type of base are its propensity to produce cracks and the time delay before placing the wearing course. Unless the conditions of weather and temperature are ideal and the proper kinds and amounts of materials used are within controlled limits, the resulting base can produce many cracks. These cracks will produce reflective cracks in the wearing course. The other shortcoming is the time delay while the mixture is gathering strength to permit heavy equipment on it for placing the wearing course.

Slagcrete is a proprietary name given to a mixture of slag sand fly ash and hydrated lime that develops into a suitable base course. Approximately three percent of lime and six percent fly ash (stack dust or stack precipitate) is added to slag sand to produce this base material.

Cement stabilization and slagcrete are both designed to provide the base or foundation course and not the wearing surface. Neither is suitable by itself for improving subdivision streets.

New methods and materials are constantly being introduced into the field of highway engineering, and should be tried on a small scale to determine their merits and shortcomings. They should not, be used in a program as extensive as the required Oakland County program or one requiring a large, long-term financial commitment by abutting property owners. Should an experimental pavement fail, it should not be at the expense of homeowners paying special assessments.

THE SPECIAL ASSESSMENT IMPROVEMENT PROGRAM

A. The Need for the Program

The Oakland County Road Commission has under its jurisdiction and thus is responsible for an exceptionally large street mileage—greater than that of any other road commission in the state of Michigan. Of this mileage over 800 miles is contained in subdivision streets in unincorporated areas of the county. Four hundred miles or more of these subdivision streets are totally unpaved, and a substantial proportion of the remainder have surfaces which are not in fully sound condition. During periods of the year when weather conditions are adverse—and particularly during the so-called Spring break-up—many of these streets are muddy, full of deep pot-holes, and even semi-impassible. As a result the road commission then is deluged with complaints from property owners expressing their unhappiness and demanding that these unsatisfactory conditions be taken care of.

The principal underlying cause of this extraordinarily large mileage of unpaved or otherwise not fully satisfactory subdivision streets in unincorporated sections of Oakland County is the development policies followed in earlier years. For a long period of time subdividers were permitted to develop new plats without the necessity of installing either paved streets or adequate drainage systems. Not until the end of the 1950's, were even minimum standards for street paving adopted. A number of the subdivision streets paved to such bare minimum standards (with a thin blacktop surface laid on an inadequately prepared base) have not held up well over the years, and now are in definite need of attention. It was only in the late 1960's and since, that stiffened regulations mandated a relatively high standard of development (full depth paving, curb and gutter, adequate sub-surface drainage), which could be expected to be trouble-free. However, subdivision regulations can only be prospective in nature—they do not retroactively apply to plats which were developed in earlier years. Since large areas of Oakland County were subdivided under the early policies, the magnitude of the problem, as noted, is very substantial.

The road commission has, of course, shared the unhappiness of many subdivision home owners with the condition of their streets. Maintenance of such unimproved roads constitutes a heavy drain on available materials and manpower of the commission. Since, as mentioned previously, the great bulk of the complaints invariably occur during bad weather periods, the commission finds it almost impossible at such times to meet peak demands for maintenance services. In addition, since its basic source of funds is the state gas and weight tax, of which only a fixed proportion can be expended on local streets, the commission is hard-pressed to secure monies for an adequate continuing maintenance program. The end result, therefore, is that all parties concerned have been seeking an answer to the problem. While opinions on this are not unanimous, the road commission engineers at any rate feel that a broad program for permanently improving such streets is the only sound long-term solution.

⁷ In part, this approach may have been due to the fact that in early years a considerable amount of development in Oakland County was of cottages in lake areas. Since these were occupied only in the warm weather season, there appeared to be little need at the time to require that the roads used for access be paved. Today, however, such lake areas are largely developed with year around homes, with far different street demands.

A variety of means exist by which the fiscal burdens of improving streets in subdivisions can be met. By far the most widely utilized method of dealing with the unimproved subdivision street problem to date has been the special assessment. This approach has been generally available to local governments in America for generations as a means of helping underwrite the cost of public improvements which are thought to confer special benefits on certain property owners over and above those enjoyed by the general public. Thus under the provisions of a statute which will shortly be described in detail, there is available in Michigan a procedure whereby streets in unincorporated areas can be improved on an assessment basis. The procedure must be initiated by direct petition of abutting property owners or by resolution of the appropriate township board. The road commission, while in overall charge of the project and its execution, cannot institute it directly. The net fiscal effect of this process is that although the road commission and perhaps other governmental units aid in project financing, the great bulk of the cost is absorbed by the property owners themselves.

The use of the special assessment device under road commission auspices for improving local subdivision streets has been of relatively recent origin in Oakland County. Although the statute authorizing this approach dates back to 1931, it was not until 1969 that it was utilized in the county. Prior to that time any assessment projects were initiated under township public improvement acts. Beginning with a relatively small program in 1969, the commission's scope of activity under this special assessment approach subsequently was expanded, and during 1970, 1971 and 1972, 15 to 20 miles of local subdivision streets were improved annually. Because of the previously described magnitude of the unpaved street problem in subdivisions, the road commission gave a relatively high priority to this special assessment program. The goal of the commission was to undertake annually a program totaling some two to three million dollars in overall cost, with the road commission paying ten percent of the overall expense incurred in each project and the township in which the improvement was located often underwriting another ten percent. Benefited property owners would be responsible for the remaining eighty percent. During the first several years of the program the interest of property owners in subdivisions was high, and the projects were carried through expeditiously and with a minimum of complaint. In most cases a high proportion of the affected property owners signified their desire for a project by signing the necessary initiating petition.

During the past year the Oakland County Road Commission's subdivision street improvement program under the special assessment procedure has encountered substantial difficulties. A number of projects have been either delayed, totally stopped, or greatly reduced in size because of objections by many of the property owners affected. The road commission and its staff have been subjected to considerable public criticism in connection with the special assessment program. Consequently, it seems clear that at the present time a careful study and evaluation of commission policies and procedures in this area is desirable.

⁸ Act 246, Public Acts of 1931, as amended; MCLA 41.271 - 41.286.

B. The Special Assessment Process Under Act 246

In any overall evaluation of Oakland County Road Commission practices in the area of special assessments, a careful examination of the governing statute-Act 246, Public Acts of 1931, as amended—is essential. This is because the basic power of the road commission to undertake assessment projects is derived from this statute—it has no inherent authority to do so. Act 246 outlines the procedure to be followed in special assessment projects, and describes in some detail the specific functions of the road commission (as well as private citizens and other governmental units) thereunder.

Two basic methods of initiating special assessment projects are found in Act 246. The act provides that whenever the owners of over 51 percent of the frontage of lands, located outside the corporate limits of any city or village, which touch upon any public highway, desire a pavement or sidewalk built thereon, they may file an application for such proposed improvement with the county road commissioners of their county. Certain minimum requirements relative to extent of land subdivision or intensity of building construction must be met for the petition to be considered, and land owned by the petitioners must be free from delinquent assessments or taxes. Receipt of such a petition by the road commissioners is declared to confer authority upon them to cause the requested work to be done so that the proper proportion of expense may be met accordingly.

The second method of initiating a special assessment project is by resolution of the township board of the jurisdiction in which the highway or street is located. When such a resolution is enacted, and is received and accepted by the county road commissioners, it confers upon the road commissioners the same authority to undertake an improvement and assess benefits as if a direct petition had been filed by the property owners (the subdivision and building standards required under a petition of property owners also apply here). There are, however, certain procedural differences in the two methods, which will be noted subsequently.

After an application for a street or highway improvement has been filed, the road commissioners are required to examine the location, and, if they deem the proposed improvement necessary, make necessary surveys, establish grades, prepare specifications and develop cost estimates. They further shall have a plat made of the proposed improvement and the lands to be benefited thereby. They also are authorized to adopt the type of material, the grades, and the methods of construction as they deem best under the circumstances. Any auxiliary structures such as bridges, drains, curbing, culverts and additional rights-of-way required are to be deemed a necessary part of the proposed improvement, and the cost thereof included in any special assessment roll.

If, following the making and filing of the survey, the establishment of grades, the development of plans and specifications, and the making of cost estimates, the road commissioners are still of the opinion that the proposed improvement is necessary for the benefit and convenience of the public, they are required to make their first order of determination. To be attached to this order are the specifications for the project (which under certain circumstances may be changed at a later date), and either a description of the boundaries of

the proposed assessment district or a description of the several parcels of land which may be liable to assessment for benefits on account of the proposed improvement.

Following the making of the first order of determination by the road commission, the commissioners are required to hear objections to the proposed improvement at a time and place to be fixed by them either at the office of the road commission or at some suitable place within the township in which the proposed improvement is located. Failure to hold such a hearing within sixty days after the filing of a petition lays the road commissioners open to a mandamus action. Notice of the hearing must be given in three ways—by mail to the affected property owners (this requirement is imposed by a related statute), by publication in a newspaper of general circulation in the district at least once each week for two weeks, and by posting five notices within the limits of the proposed special assessment district in public and conspicuous places therein. The posting, the mailing, and at least one publication in the newspaper must be made not less than ten days prior to the hearing. Notices must set forth a description of the boundaries of the proposed special assessment district or the several parcels of land proposed to be assessed as well as the time and place of the hearing. At the hearing all parties or persons in interest must be given an opportunity to present their objections, if any, to the proposed improvement. At the hearing the road commissioners may make any changes in the specifications of the project deemed advisable without further notice or hearing, provided such changes do not increase the estimate of cost more than ten percent (if the estimate is increased by greater than ten percent a new hearing is required with proper notice). At the hearing the commissioners may alter the boundaries of the proposed assessment district provided, however, that any enlargement of the district or its alteration so as to include additional land will require a new hearing with proper notice.

The statute states that the parties petitioning for the construction of any improvement shall be jointly and severally liable for the cost and expense of proceedings (but not for construction costs) in case the proceedings are dismissed for any cause and the county road commissioners have incurred expense because of such petition.

Within thirty days following the hearing on objections, if the road commissioners still deem the proposed improvement necessary for the benefit of the public welfare and convenience, they must make their final order in writing, determining that the proposed improvement shall be made according to the final specifications adopted by them and attached to said order.

At this point it should be noted that if the board of county road commissioners has designated by resolution one or more hearing examiners to hold the hearings required by the act (rather than holding the hearings themselves), certain additional procedures are required. The hearing examiner, after the necessary examinations and hearings, is required to submit findings of fact and proposed determinations to the board of road commissioners, who may modify such proposed determinations, confirm them as submitted or as modified, and order them placed on file in its office. A copy of the determination of the board must be served by first class mail to each owner of or party in interest in property to be assessed. The determination is final unless within ten days of such mailing the owners of record of more than fifty percent of the frontage, who were

⁹ Act 162, P.A. of 1962, MCLA 211.741 - 211.745.

originally qualified under the provisions of the act to sign the petition, submit a petition for reconsideration by the road commissioners. Upon receipt of this petition signed by the necessary number of persons the board of road commissioners shall set a time and place for hearing the petition for reconsideration, and give notice thereof by first class mail to each owner or party in interest in property to be assessed. At the conclusion of such hearing the board of road commissioners may confirm or modify its previous determination, and such determination shall thereupon be final.

After making the final order with respect to the project, the road commissioners (unless certain tax delinquencies exist within the area to be assessed) then must award the contract for the construction of the proposed improvement to the lowest responsible bidder. The commissioners are required to take such action as may be necessary to commence construction within six months (weather permitting) after making the final order.

At the conclusion of the hearing on objections to the proposed improvement the road commissioners are required to finally determine the special assessment district to be assessed for the benefits of the construction of the proposed improvement, and have no authority to assess any lands not included in such district. If at any time error is discovered in the district as so determined, before the special assessment roll has been finally approved by the commissioners, and if in the judgment of such commissioners further lands should be brought within such assessment district, they are required to give notice of and hold a new hearing as to the limits of the district prior to bringing in such additional lands. At the hearing on objections, the commissioners also are required to determine the number of installments, if any, in which the money to finance the improvement shall be raised, which shall not be more than ten annual installments. Any subsequent change in the number of installments shall require another hearing after due notice.

The statute provides in some detail the method to be used for apportioning the total cost of the improvement. The road commissioners are authorized to apportion up to 25 percent of the total cost of such improvement to the township at large, and may apportion a percentage of the total cost of the improvement against the county road fund. The balance of the cost of the improvement is to be apportioned upon and assessed against the individual lands benefited, according to the benefits received, which apportionment shall be announced at a hearing to hear objections to and equalize such apportionment of benefits. Each assessment district is to be designated by number.

The commissioners are authorized to issue and sell bonds in an amount not exceeding the total assessments levied in the improvement district, and to pledge the full faith and credit of the assessment district for the payment of such bonds (as an alternate they may advance the necessary funds from the county road fund). The township board of any township in which the special assessment district is located under the provisions of this act may by resolution pledge the full faith and credit of the township for the payment of bonds issued on such special assessment district. No indebtedness against the township-at-large shall be incurred without the approval of the township board.

After completion of the improvement the highway authorities having jurisdiction over the highway improved shall maintain and repair it and keep it in a reasonably safe condition for public travel, using for this purpose any money which may be available for the maintenance and repair of such highway. If there is any surplus of money collected after paying the cost of building such improvement, the same shall be turned over to the highway authorities having responsibility for the maintenance and repair thereof and used solely for such purpose.

The procedure for a special assessment project instituted by a township board resolution is generally similar to that initiated by a property owners' petition, with one significant exception. After receipt of such resolution the board of road commissioners must make a declaration of necessity and hold a hearing thereon "in the same manner as if an application had been filed by property owners...." After the date of such public hearing on the declaration of necessity, the property owners of 51 percent or more of the frontage along the proposed improvement may submit within 45 days a petition to the board of county road commissioners requesting that the project be discontinued. If, upon examination, it is determined that valid signatures have been obtained in such a percentage the project must be discontinued by the road commission. If no petition is filed within the 45-day period the project goes forward in the same manner as if inaugurated by property owners, It should be noted that it is far from clear if the hearing on the declaration of necessity is the same as (or at least may be combined with) the hearing required on objections, following a first order of determination, or whether the holding of a separate hearing initially is mandated.

C. Evaluation and Recommendations

Preliminary Comment

In discussing the special assessment program being carried out by the Oakland County Road Commission under authority of Act 246, it is necessary to make a preliminary comment on the statute and certain of its apparent shortcomings. This act, with its emphasis on improvement of individual highways, clearly was drafted for use in assessment projects along county roads—or at best in the now out-of-date subdivision with a "gridiron" street pattern, where a single street project could stand on its own. It does not appear to be nearly as well adapted to the more modern type of subdivision development, with a relatively intricate type of curvilinear street arrangement. More important, perhaps, are certain procedural deficiencies inherent in the statute. As an example, under the petition approach the act does not provide for the giving of information by a road commission relative to a proposed improvement prior to a property owner being asked to sign such petition; states that a petition once received confers full authority on the commission to cause the work petitioned for to be done; and makes no mention of a right to withdraw an individual signature at any time. These factors, taken together with certain decisions of the Michigan courts limiting generally the right of petition-signers to withdraw, place a heavy burden on the individual property owner who is considering joining in the petitioning process. Unless the petition itself contains qualifying language (if this is possible), in effect he is being asked literally to request an improvement without necessarily having any knowledge of its technical features or, even more important, its cost. The alternate method which may be utilized to initiate projects—a township board resolution—to a degree may eliminate certain of these problems, since it

does provide a more clear-cut method for affected property owners to object to and stop a proposed project. However, this approach also has caused difficulties, as will be noted subsequently in this report.

The above-described shortcomings of the governing statute do not make it impossible for a road commission to undertake, in a sound and balanced manner, special assessment projects. They do, however, place on such a body the responsibility for developing procedures and practices which, to the maximum extent possible, make up for statutory deficiencies. For example, it obviously is essential that the commission and its staff be a source of complete and accurate information for citizens in all stages of the procedure. It further should be noted that many assessment projects in any jurisdiction produce controversy to a greater or lesser degree. They cost money—in fact, a considerable amount of it—for the affected property owners, with such levies, under the assessment procedures used, in no way directly related to ability to pay. Consequently, except where the need for improvement is so serious as to be apparent to all, there usually exists in a proposed project area one group of citizens who feel firmly that the improvement is highly desirable and that the convenience it will produce outweighs the cost; and another body of property owners who with equal sincerity either do not see the need at all or who feel that the financial burden outweighs any potential benefit. This condition calls for a careful—and above all a well balanced and impartial—approach by the governmental body involved. Regardless of how seriously the Oakland County Road Commission (and its staff) may view the need for permanent improvement of subdivision streets in order to correct what it feels is a difficult situation, that body is under a clear obligation to proceed with absolute fairness in processing proposed subdivision improvement projects. It clearly is the servant of the public in the overall process, and must conduct itself accordingly. To act in any other fashion can only result in an outcry by unhappy citizens and a lessening of the reputation of the road commission in the eyes of the citizenry and of other governmental agencies, to the commission's ultimate detriment.

Shortcomings of the Special Assessment Program and Recommendations for Improvement

Through intensive examination of records of the Oakland County Road Commission which deal with special assessment projects, through meetings with road commission staff, through interviews of interested persons outside the commission such as property owners living in completed or pending street improvement project areas, and through conferences with officials of state, county and township governments, of other road commissions and of municipal bodies, it has been possible to examine and evaluate in some detail the methods of operation of the commission and its staff in the special assessment field. It is felt that the problems which the road commission has been facing, and the criticisms which it has experienced, can be brought together in certain logical categories, analyzed and evaluated, and recommendations made for new and improved procedures and practices.

¹⁰ Special assessments are not even based on property values, as are ad valorem property taxes.

1. Lack of adequate information by property owners. Unquestionably one of the most often voiced concerns about road commission practices in the special assessment area has been its alleged failure to make essential information about the program fully available to citizens requiring it. Many persons clearly feel that overall information as to how the special assessment street improvement program is carried out generally, as well as meaningful information about a specific project in which they may be vitally interested, is in one way or another seriously inadequate. A review of tapes of hearings on objections (also often called hearings on necessity, particularly if the township resolution approach is used) in a number of projects clearly tends to support the above-mentioned allegations. Time and time again questions are asked at such hearings which indicate a lack of previous information on the specific project under consideration or on special assessment programs generally. Discounting those questions which may be asked by opponents whose intent clearly is to embarrass (and there are some of those), there obviously are many citizens who, regardless of the efforts being made by the commission and its staff at present, have been far from adequately informed in the key early stages on a program which will vitally affect them. For the hearing on objections or necessity is far too late a time, at least if the petition route has been followed, for affected persons to obtain needed information. Sound information on both the overall special assessment program and, to the extent it can be developed, on a proposed project, is needed prior to the time a property owner is asked to sign a petition requesting a street improvement. With such information available he will have a relatively clear understanding of what is involved in the proposed undertaking, and what benefits and burdens his signature may well commit him to. The tendency to later seek to withdraw a signature because of alleged lack of available information (or presentation by other parties of actual misinformation) should be substantially eliminated. Under the township resolution option, also, adequate early information would be of great value. It is clear that citizens in an area swiftly become angry if such a resolution is enacted prior to their having any real knowledge about a potential project. It clearly is desirable that such resolution represent the informed view of citizens in the project.

In order to insure full information going to concerned property owners in a tentative project area, certain specific actions on the administrative level—over and above minimum statutory requirements—are essential. The road commission staff, upon receipt of an expression of interest in an assessment program from a sufficiently large number of persons in an area to insure that a fairly broad desire for a project apparently exists, should thereupon initiate preliminary technical and allied studies of such area. Such studies should in part be geared to determining what is needed to provide a sound project in terms of construction—the type of pavement, drainage, special structures, bridges, etc. However, the study should not stop there. Any potential environmental problems should be considered and solutions or means of achieving them developed thereto. Adequate evaluations of traffic and pedestrian safety problems which may develop following an improvement should be undertaken, so that informed comment can be made. Answers should be developed to the almost universal questions which people invariably have on their minds with respect to special assessment projects—such as priority of pavement vis-a-vis sanitary sewers, the anticipated life of the street improvement proposed and the extent of any commission guarantee of its longevity, and commission practices with respect to maintenance, snow removal, etc., on improved streets. Data on the incidence of complaints on street conditions received by the road commission from property owners in the area should

¹¹ If there is any question about the extent of such interest adequate investigation should be made. The commission cannot and should not spend time on projects for which there is little public support.

be carefully developed as evidence indicating possible need for paving. To the maximum extent possible sound estimates of the cost of the project as well as an estimated per lot cost should be prepared.

Following completion of the above studies the road commission should send a letter to all owners of property who might be affected should a project be developed in the specific area. The letter first of all should alert the property owners to the fact that strong interest has been shown by many of their fellow residents in a special assessment improvement program, and that based on this expression of interest the commission is submitting to all who may be concerned complete information. The letter should discuss in some detail the type of improvement which in the commission's judgment would best serve the area (including any options if this is felt desirable) and what benefits might be expected to result. Technical matters should be discussed in simple, straightforward language, and answers to the inevitable questions in peoples' minds (as described in the preceding paragraph) given. An approximate individual cost of the project and the method by which it was determined should be set forth.

Included with the letter should be a brochure which describes in a clear-cut manner the overall special assessment process from start to finish, and contains a group of typical questions of a general nature dealing with the program together with answers thereto. Comments of citizens who live in projects completed in earlier years would be of decided value. The two methods of initiating a program—direct petition and township resolution—should be described in some detail, and adequately compared and contrasted. Legal obligations which might be incurred by property owners through signing a petition or through the taking of other action should be made clear.

The letter to property owners should conclude by stating that an “administrative information meeting” will be held in or near the area on a specified date to answer any and all additional questions relative to a possible project. It should urge citizens to submit questions in advance of the meeting to the road commission staff by mail or telephone if they wish, so that complete answers might be given at the session.

It is recommended that once a tentative project area has been identified the road commission conduct preliminary studies to determine structural attributes of the project, environmental considerations, traffic and safety factors, approximate costs and other matters of concern to property owners; and it is further recommended that these data along with a detailed description of the special assessment process and notification of the time and place of an administrative hearing relative to the project be transmitted by mail to all property owners who may be affected by the project.

¹² The brochure presently in use by the road commission is judged not adequate.

¹³ It is absolutely necessary that this be an evening meeting—full attendance is a prime objective.

At the administrative information meeting the persons in the area who indicated strong interest in a possible project should open the session. The road commission staff then should describe the nature of the project which could be undertaken. They should make it clear that they recognize that property owners are being called upon to make an important decision, directly affecting their pocketbooks, and that they are there to help by giving full information. Staff must avoid any “hard sell” approach—that can and should be done by those citizens who have shown an early interest in the project. However, a full and complete presentation should be given by staff, and they certainly should be free to give professional opinions, supported by adequate evidence, in areas in which they have competence. If possible, one or more experts in such technical areas as traffic engineering and property assessment should be available to deal with questions in these fields. Use of good slides to show improvements in other areas could be useful at the information meeting, and the availability of persons from projects previously completed to testify as to their experience would be of decided value. If any type of cost-benefit analysis of the proposed project has been made, it should be presented. The staff should conclude its part of the presentation by outlining the two optional routes for undertaking a project, so that everyone clearly understands the procedure. A decision as to the approach to be adopted should be left to the citizens.

It is recommended that the road commission in a completely neutral posture, hold an administrative hearing on each tentative project for the purpose of informing those interested, so that property owners may determine whether or not they wish the project furthered and, if so, by what means.

Assuming a decision is made by citizens of the area to proceed with a project, further steps to disseminate essential information should be taken. If the township resolution option is chosen road commission staff should attend the township board meeting at which the resolution is being considered to explain the proposed project and answer questions. If the petition approach is used, road commission staff should be available to prepare the petition so that errors can be avoided. The overall limits of the project should of course be carefully defined in such petition, so that no confusion arises on that score. The road commission may well find it desirable to attach any additional explanatory material it deems necessary to the actual petitions prior to releasing them to the petition circulators. Insertion of information such as the total and the individual frontage of parcels abutting on a street proposed for improvement would be useful in helping petition circulators determine extent of success in meeting statutory requirements and in avoiding future controversy. The road commission may wish to send a letter to all property owners indicating that petitions are being circulated and giving names of the circulators. This would aid in making certain that all parties concerned were kept fully aware of what was going on.

Clearly the procedure outlined would place a considerable burden on the road commission staff at the very beginning of the proceedings, since it would have to develop initially a substantial amount of information relative to any project. However, the dividends realized from such an approach should be substantial, and fully justify the effort. This is true even though some potential projects may fail to secure the necessary approvals and thus not be carried out. Furthermore, much of the more general type of information relating to the overall special assessment process need be prepared only once, since it can be placed in pamphlet or brochure form for overall dissemination. Whatever the burdens on staff time under the overall procedure outlined, the road commission cannot and should not rely on petition circulators or other private citizens to pass information on to property owners—the possibilities of error or of misrepresentation are simply too

great to risk. Nor—as will be discussed subsequently—can the typical subdivision association be relied upon to perform this function.

It is recommended that the road commission ascertain that project petitions are properly prepared and that information sheets stating the pertinent facts about a particular project are attached to the petition before they are released to the circulators.

The argument may be advanced that the administrative information meeting could be scheduled at a later time in the proceedings—possibly after the township board enacted a resolution if this approach was used, or (under the petition option) after a petition bearing sufficient signatures had been submitted informally but prior to its actual “receipt” by the road commission (the commission presumably would have to adopt rules permitting withdrawal of signatures during this period if such an approach was used). Admittedly scheduling an administrative meeting at such a time would have advantages—in particular, such a session would deal with a more specifically, defined project, and thus perhaps more complete information in some areas (such as cost) might be given. However, there would be decided disadvantages, also. Withdrawal of signatures from a petition can lead to controversy under the best of circumstances, and the enactment of a resolution by a township board prior to the dissemination of very complete information to citizens at a public meeting to which everyone concerned was invited all too often could result in the charge that the action was “railroaded” through and did not represent the affected taxpayers’ viewpoint. The road commission cannot afford to be the object of such criticism. Still another possibility would be to allow withdrawals right up to the end of the formal hearing’ on objections. While this is the practice of some road commissions, it has the disadvantages of producing controversy over withdrawal of signatures and perhaps resulting in termination of a project at a very late date, which results in a major loss of staff time and produces hard feelings among citizens.

Brief comment should be made on later steps in the execution of a project, and of possible benefits which might accrue at such time from a policy of broad and complete dissemination of information in the early stages. Under the new procedure recommended, once a petition that met all requirements established by statute and by commission policy was received, the road commission could feel certain that it had a relatively controversy-free project, supported by a solid majority of citizens involved, and thus could accelerate, to the maximum extent possible, its subsequent carrying-out of the program. Thus, under the petition option, instead of waiting until after the hearing on objections to authorize the development of engineering plans for a project (as is done at present) the commission might well take this step immediately following its initial determination of necessity, at least in projects where the percentage of petition signers was substantial. Consequently, in many instances, construction plans would be available at the hearing on objections, thus giving the property owners the added benefit of a very complete picture of the proposed improvement at

¹⁴ Perhaps after the petition was submitted a brief hearing to determine sufficiency of the petition might be held by the commission at one of its regular meetings, with property owners permitted to withdraw up to the conclusion of such hearing. In connection with this, see section on proposed adoption of policies.

that time. In effect, the hearing on objections would largely be one at which the final construction plans were reviewed and any necessary minor adjustments made. The project thus would be ready for bidding and actual construction at a very early date—far more swiftly than at present. In effect, the commission would greatly benefit time-wise in the later stages of a project from its ground-work at the beginning. Such swift carrying out of a publicly-supported project would reduce overhead costs and would be of real value in enhancing the commission's image.

If the township resolution route was followed, the statute of course does provide for an absolute right of citizens to stop a project by submitting within forty-five days following a hearing on necessity a petition signed by owners of 51 percent or more of affected frontage. Under these circumstances, it probably would be wise for the road commission to enact a declaration of necessity and scheduled hearing thereon immediately following township action. After the forty-five-day period had ended, swift steps could be taken to initiate preparation of engineering plans, so, that they would be available at the hearing on objections.

In any accelerated procedure consideration also might be given reincorporating within the hearing on objections the required hearing on apportionment of benefits (the statute is not entirely clear as to whether these hearings may be combined; thus a legal opinion would be necessary on the point). The only danger here is that too many items would perhaps be involved in a single hearing, thus causing citizen unhappiness.

2. Lack of Clear-cut Road Commission Policies. Closely related to the general unhappiness of many citizens about the lack of adequate and timely information on various aspects of the special assessment improvement program, is an equal concern about the policies of the road commission in its execution of this program. A substantial number of citizens—and numerous public officials from other governmental agencies—clearly share the feeling that commission policies relative to the special assessment program are vague and unclear, subject to constant shifting, and on occasion even flatly contradictory. Furthermore, there exists related concern about the seeming lack of any commission policies whatever in certain vital areas.

¹⁵ See Section "3" for suggested policy on percentage of affected frontage for which signatures should be required.

¹⁶ Citizens owning in excess of fifty percent of affected frontage can, of course, subsequently petition for reconsideration of a project if a hearing officer presides at the hearing on objections. Under the recommended new procedure, this should almost never occur.

As has been previously noted, Act 246 under which the road commission must carry out special assessment improvement programs is to a degree deficient as a working instrument in certain important respects. Not only does the act have shortcomings in terms of basic procedures to be followed, but it also is either vague or totally silent with respect to many other matters on which differences of opinion could and often do arise during the undertaking of a project. Quite obviously, therefore, it would appear essential that a number of policies covering a wide range of matters—both procedural and substantive—need to be adopted by the Oakland County Road Commission to overcome such deficiencies and assist it and its staff in the effective performance of its functions under the act.

Based on careful examination, it is clear that up to the present the road commission has indeed been decidedly weak in the firm adoption of policies dealing with the special assessment programs. This deficiency, quite obviously, begins at the top. The road commissioners themselves do not appear to have formally developed and adopted a body of written policies, rules and regulations which would govern the overall administration of this program. If there has been any expression of policy at the board level, it has been done in a highly informal manner—largely by the occasional voicing of opinions on a subject, or perhaps the issuance of directions to employees on some specific matter at board meetings. At the top staff level the development of policies also has been weak—here it appears to be confined to oral direction or infrequent written memoranda to staff, each covering a limited subject. As a result, to a considerable degree many of the road commission policies dealing with the special assessment program which do exist seemingly are made on an ad hoc basis by middle or lower-level administrative or technical staff. This overall approach can be dangerous in two ways. First, there is evidence that policies occasionally tend to shift from project to project, and even change during the execution of a single project. This is readily understandable considering the procedure followed in policy formulation and the number of persons and levels involved—but it clearly is not sound. Second, the general public or concerned citizens or officials have no real way of knowing what are road commission policies in the assessment field, other than by direct conversation or exchange of letters with commission staff.

No organization carrying out an important and complex special assessment program involving both the expenditure of millions of dollars annually and dealings with thousands of citizens and numerous public bodies can expect to operate in this fashion. In the preceding section, the need for making adequate and accurate information about the program available to the public was emphasized. This information cannot be given, and the program as a whole cannot properly be administered and executed, unless the road commission board adopts in formal fashion and in some detail the policies it will follow in carrying out such a program. Such policies must be reduced to writing, available to anyone who wishes to see them, and must be followed by the road commission and its staff in dealing with citizens and with other public bodies at all times. These policies would, of course, be the basis for all brochures and letters describing the special assessment process which were recommended in this report. Any modification of such policies should be done with equal formality, be well-publicized, and should not apply to Projects under way at the time if such changes would in any way result in unfairness to or impairment of rights of individuals or groups involved.

It is highly desirable that policies, rules and regulations be adopted not only for control of the road commission's external relationships, but to regulate internal conduct as well. In this area, it should be possible for the board to outline general policy, with the details to be filled in by administrative directives adopted by the staff head of the agency. This should be done with an adequate degree of formality. The subject of internal organization will be considered in greater detail subsequently.

It should be mentioned that a small pamphlet entitled, "Street Improvement Procedures" has been utilized by the subdivision improvement and development division of the road commission as a type of guideline for its activities. However, an examination of this pamphlet indicates that, except for a description of the method of apportionment of benefit—and thus the cost—of a project among property owners, it is nothing more than a reiteration of the provisions of Act 246. There also is no indication given that it has been adopted as policy by the governing board of the road commission. A new written description of operating policies and procedures for special assessment improvement programs now has been proposed, and a draft of this presently is being circulated and reviewed, primarily at the staff level. This is a much more comprehensive document than the previously-mentioned one, and does state specifically in its foreword that it contains guidelines adopted by the board of road commissioners. Adoption by the board of a document of this general type together with directions for its use would be a decided step toward achievement of the recommendations made in this section.

It is recommended that the description of operating policies and procedures for special assessment improvement programs now in process of development be completed including items suggested in this report adopted by the road commission as official policy and made generally available for internal use and public information.

3. Specific Problem Areas in Special Assessment Procedures. In addition to the recommendations for improving the process of informing the public about special assessments and for establishing policy guidelines for the special assessment process, there are a number of specific areas that require improvement.

a. Administration of Petitions. A policy governing the overall administration of petitions for special assessment improvements should be adopted in order to improve road commission procedures in this vital area. Many of the items which would be included in such a policy were discussed previously—such as careful definition in the petition of the geographical limits of the improvement plus provision of information relative to frontages involved and names of those seeking signatures. Another matter requiring coverage would be a specific definition of the time period allowed for circulation of a petition. Property owners living in a proposed improvement area are entitled to know within a reasonable length of time (and with full information given prior to circulation of a petition) whether or not a petition effort has been successful—they should not have hanging over their heads indefinitely the vague possibility that a project might come into being. This time should be of only moderate duration in a proposed project of average size. The commission also should consider adoption of a policy requiring that petition circulators certify that a bona fide attempt was made to contact all property owners to be affected by a proposed improvement. A definition of when a petition is "received" by the commission is essential. Other items relative to petitions—such

as their form and terminology and the extent of interest required to be shown in an improvement as a condition to preparation and release of petitions by the commission—could be adopted as board policy or governed by written order of the chief administrative officer.

b. Signatures on Petitions. Perhaps one of the most controversial areas of the overall special assessment process—and thus one demanding full attention in any commission guidelines—is the matter of signatures on the various types of petitions and their adequacy. The problem takes several forms—the formalities required to be met for a signature to be legally meaningful, the percentages of signatures required for a petition to be valid, and the matter of signature withdrawals.

The road commission should state clearly what legal formalities must be met for a signature on any type of petition to be valid. Adoption of such a guideline and its communication to the public would eliminate many of the controversies which have arisen over this issue during recent months and years. Any such policy adopted should include the proviso that the legal staff of the road commission would be readily available to citizens for any -necessary detailed interpretation.

The statute states that for various types of petitions (seeking initiation of a project, its discontinuance, or a hearing on its reconsideration) to be valid signatures representing ownership of certain percentages of the total property frontage involved must be executed. The most critical area here is the initiatory petition—for the statute mandates that over fifty-one percent of the frontage, as represented by the signatures of the owners thereof, is required to trigger initiation of a special assessment project. This could raise problems at times, for, as lot sizes vary considerably, a numerical minority of owners could compel the initiation of a project. Furthermore, fifty-one percent, even if lots were of substantially equal size, is so slightly in excess of a majority of the total frontage involved that problems could arise over any minor question of interpretation of measurements, etc. In exercising its discretion in determining whether or not to proceed with a project that has the legally required minimum of fifty-one percent of the frontage, the road commission may wish to take into account whether a majority of the citizens residing in the special assessment district desire the project. The commission should request its legal counsel to give them an opinion on this question.

¹⁷ In addition, since the method of apportioning cost under formulae used up to the present by the road commission is not directly based on frontage, a group of owners who would be paying substantially less than half the project cost could determine project initiation.

¹⁸ See particularly Section 5 of the statute, giving authority to petitioners to institute a mandamus action if a hearing on objections is not held within 60 days of the time a petition is filed. Otherwise, however, the petition does not appear to be mandatory in nature—i.e., the road commission may exercise its discretion on whether or not to proceed.

The problem of withdrawals is a difficult one and the statute, as previously noted, offers no assistance. Upon implementation by the road commission of the recommendations made in this report for early dissemination of complete information on a proposed project, there would exist considerable justification for adoption of a policy of permitting no withdrawal of signatures on an initiatory petition except in cases of a clear-cut mistake or where actual fraud or misrepresentation could be proved. If a more liberal policy is desired, the road commission could permit withdrawals up until the time a petition was formally received or until the conclusion of a brief hearing to determine sufficiency of the petition (as mentioned previously). In any event, it is essential that the road commission adopt well-publicized and consistent rules stating during what period and under what circumstances it will permit withdrawal of signatures on any one of the three basic types of petitions. These should be applied impartially by staff, and necessary interpretation made in borderline cases by the commission's legal department.

c. Type of Improvements. Controversy occasionally arises over the type of improvement proposed by the road commission or its staff in connection with a project. The board of road commissioners should, therefore, to the maximum extent possible, adopt development standards which they will follow in projects-covering such items as width and type of pavement, drainage, variations of any of the above in different areas of the county, extent to which options will be offered property-owners, etc. The board also should spell out maintenance policies on improved roads, and any guarantees relating to quality of the work.

d. Re-initiation of Defeated or Abandoned Projects. It is imperative that the board adopt a clear-cut policy on the length of time which must elapse and/or other factors which must exist before it will permit the reinitiation of a defeated or abandoned special assessment project. This would apply to projects defeated through a successful petition for discontinuance (under the township resolution approach), or to those in which petition circulators were unable to obtain the necessary signatures and abandoned their efforts. Lack of such rules in the past has led to considerable unhappiness on the part of many citizens, who felt they were being compelled to spend substantial amounts of time dealing with previously-defeated projects.

e. Location and Time of Hearings. The problem of where and at what time public hearings or similar meetings should be held by a governmental agency is always a difficult one. The two basic factors involved are a citizen's right to have public forums dealing with matters affecting him scheduled at such times and places as to facilitate attendance, and the need for the agency to conserve staff time and expense. In balancing the two it seems clear that the concerned citizens' need to know must be given top priority in a program with such important public implications as special assessment. Thus in general the board of road commissioners should lay down a policy decreeing that hearings and other meetings dealing with projects be held in a location as near as possible to the area involved and on such dates and at such hours as to guarantee maximum opportunity on the part of the property owners concerned to attend.

f. Definition of “Improvement” or “Project.” The question of what constitutes an “improvement” or a “project” under Act 246 is confusing, but of considerable importance to both road commission staff and to property owners involved. Whether such improvement or project is made up of separate individual streets, a group of interrelated streets, or a total subdivision, will vitally affect staff planning and cost estimates for the upgrading of an area. It also will affect the citizens living in the area, since they will pay a cost or receive benefits depending in part on the scope of the project or improvement. Furthermore, success or failure of various petitions—both to initiate a project or to block or defeat it—may depend in considerable part on such definition.

In establishing a policy on what it will consider to be a project or improvement the board of road commissioners first should seek an interpretation of the act by its legal staff. Following this, and depending on how much flexibility it is then held to enjoy, the board should define in clear terms what will normally constitute a project or improvement for purposes of petition or resolution. The alternative to this would be for the board to deal with each case individually—i.e., to define what was acceptable to it as a project before any petition was placed in circulation or a township resolution sought (even then at least a very general statement of policy would be of value). One positive advantage of establishment of such an overall policy would be that when communicated to the public and to officials of other involved jurisdictions it could influence advance planning for possible improvements. A beneficial by-product of adoption of such a policy would be the substantial elimination of the occasionally-heard charge that projects sometimes are “gerrymandered” to achieve a favorable majority.

g. Apportionment of Cost. The board of road commissioners should adopt guidelines defining how overall cost of improvement projects will be determined and how the property owner’s share will be apportioned among those benefiting. If more than one method of apportionment of cost is to be used it should be clearly stated when and under what conditions each will apply. Adoption of a clearly defined policy in this area is of decided importance, since nothing will destroy a program more quickly than a charge that any type of favoritism in cost apportionment is possible.

4. Impartiality of the Road Commission. Earlier in this report the importance of the Oakland County Road Commission maintaining an attitude of absolute fairness in the administration of the special assessment process was noted. In the eyes of at least a segment of the public, however, the commission has not always achieved such a goal. Citizens have from time-to-time charged the road commission with unfairness and lack of candor in performing its key role in the special assessment program, and with a decided “pro-improvement” approach in its operations. More specifically, allegations have been made that the road commission—meaning basically its staff—have changed rules to suit the occasion, dealt with small and unrepresentative groups of citizens in promoting or administering projects, been anything but frank and responsive in dealing with legitimate questions of concerned citizens, and conducted hearings in other than an impartial manner.

In considering these charges, it should be noted that many of the complaints in effect involve areas previously dealt with in this report the recommendation that full information relative to a proposed project be made available to citizens prior to actual legal initiation thereof in large part should solve the criticism of

unresponsiveness to questions. The charge of lack of rules in key areas, or constantly shifting rules, should substantially be met by the proposal for adoption by the commission of firm written policies for the administration of projects. And the initiation of such policies as requiring hearings to be held at a time and place most convenient to the citizens involved and setting forth the method to be used in apportioning cost should be of decided value in meeting claims of unfairness in certain procedural and substantive areas.

A few additional items do require specific consideration in the field of candor and fairness. At the public hearings which are held to consider proposed projects the commission representative almost invariably has been a member of the staff of the subdivision improvement and development division (members of the board itself very seldom attend such sessions). This person in effect serves in a dual capacity—he is the moderator or hearing officer, and he also is the technical representative giving advice and opinions which have considerable bearing on the need for improvements. This places such a person in an impossible position—at one time he is supposed to listen impartially to, and ultimately evaluate through findings of fact and suggested determinations, the objections and other comments of citizens on the proposed improvement, and at another time he must give an opinion which in the eyes of the public represents the taking of a stand on the project. It is essential, if the road commission is to be known as a fair-minded organization, for these responsibilities to be divided between two persons. The hearing should be conducted and moderated (and the findings of fact and proposed determinations for the board made) by a person who has no connection with the staff unit working in the subdivision improvement field, and perhaps no connection with the road commission at all other than in his special capacity (possibly a panel of several qualified persons available for such assignment could be prepared). This would then enable the representative from the subdivision improvement division to give his considered opinion or judgment on various aspects of the proposed project when asked to do so without fear of allegations of bias. When the respective roles of each of these persons were made known at the beginning of each hearing it could be assumed that both the fact and the appearance of fairness of the commission in the public eye would be enhanced.

It is recommended that staff members of the road commission be barred from serving as the hearing officer at public hearings on proposed projects, though representatives of the division should be available at the hearing to answer questions. It is further recommended that the board of road commissioners appoint a panel of outside hearing officers consisting of qualified and impartial citizens to conduct each formal public hearing from which the board of road commissioners should appoint a hearing officer.

¹⁹ It also should be noted that toward the end of the hearing on objections the representative of the subdivision improvement unit has occasionally stated that he planned to recommend to the board that it give final approval to the project. This is not wise—it suggests that such representative has long since made up his mind, and that comments of citizens are of little importance. The hearing officer instead should state, as he brings the session to a close, that he is taking the matter under advisement, and that after he has fully evaluated the evidence presented he will make his findings and proposed determination.

A second area necessitating discussion is the relationship between the road commission and subdivision associations or similar informal bodies which may exist in areas in which projects are proposed. The commission and its staff must recognize that such bodies have little or no legal standing and, as a practical matter, may or may not represent the viewpoint or the desires of a majority of the people living in the proposed project area. Most such organizations are loosely-knit, their officers are elected informally, and their charters or by-laws neither readily available or easily interpreted. The commission, therefore, cannot view contact with such bodies as a substitute for contact with the individual citizens in a proposed project area. On two or three occasions during the past two years, the commission staff has come under sharp criticism for allegedly working closely and perhaps almost exclusively with officers or other representatives of such groups in the initiation of projects and in the adoption of a method of apportioning cost. Contact with a subdivision association may be of some value in early public relations activity in an area—but not in the more formal aspects of project initiation and administration.

A final goal to be considered in achieving fairness is that of keeping citizens fully informed as to the status of an improvement project at all times. This is absolutely essential if the road commission is to be regarded with complete confidence and respect by concerned citizens. Consequently whenever any decision is made affecting a project—including abandonment of petition efforts—the persons living in the project area should be given written notice. Generally speaking, the road commission, with only an occasional slip, has done a reasonably sound job in this field, particularly in the past year or so.

In discussing the subject of fairness a few comments should be made from the point of view of the road commission. While the commission—and its staff—must display fairness and balance in performing its role in the special assessment field, it is not required to hamstring its operation in an effort to do so. For example, as has been indicated earlier, the subdivision improvement staff, especially when relieved of hearing officer duties, should be free to render opinions based on sound engineering judgment as to technical aspects of a project. Fairness does not mandate absolute silence—the staff is being paid with public funds and the citizenry have a right to obtain the benefits of their expertise. However, while discussing the pros and cons and technical merits and deficiencies of a project the staff should make it clear that under the statute the citizens make the final decision. Likewise the board of road commissioners must not be fearful of moving forward with a sound project that meets legal requirements despite the objections of a vociferous minority—or the total program will soon come to a halt.

5. Internal Coordination. A review of present organization and operating procedures of the various staff units within the road commission which become involved in the special assessment field reveals some decided deficiencies which vitally affect program execution.

a. Coordination between the Legal and Subdivision Improvement Staffs. There is a decidedly weak relationship between the staff unit which has been assigned the most important responsibilities in the overall special assessment program area—namely the subdivision improvement division—and the road

commission's legal office. In view of the fact that so many aspects of the assessment program have important legal implications, it reasonably could be anticipated that these two units would be in continuous close contact with each other. With rare exceptions, this has not been the case, either in the broad development of special assessment procedures or in the carrying out of specific improvement projects.

The situation described above needs to be remedied. It is clear that the subdivision improvement division must seek and receive adequate, continuing advice and guidance from the commission's legal office if it is to do an effective job of performing the responsibilities assigned to it. This legal guidance, whenever possible, must be given on a preventive rather than a remedial basis. Thus the subdivision improvement staff should be advised as to what the principal legal danger areas are in project execution, so that it can regulate its conduct accordingly. As noted earlier in this report, the legal office also should be available to give advice to affected citizens and internal divisions of the road commission on such matters as adequacy of signatures on petitions, legality of signature withdrawals, etc.

It is recommended that there be a much closer liaison between the subdivision improvement division and the road commission's legal office.

b. Coordination With Other Divisions. In addition to establishment of a much closer relationship between the subdivision improvement division and the road commission's legal office, greater I I integration of effort than exists presently will be required among all departments and divisions whose work to any degree bears upon the special assessment area if this program is to be upgraded. Thus in order to develop successful and smooth-running projects, it is essential that all concerned units of the commission—including the two mentioned above plus traffic engineering, design, planning, maintenance and perhaps others—coordinate their efforts from early planning to the conclusion of each improvement. Tapping the know-how of each unit will be particularly beneficial in the early analysis of problems and the development of the strong initial presentation to concerned property-owners which has been recommended previously in this report.

Two other brief comments relating only to the special assessment division should be made. At present, the quarters occupied by this unit are cramped, and not conducive to a productive operation. More adequate working space should be provided as quickly as possible. Secondly, it is urged that every effort be made to schedule the work of this division so as to make maximum use of staff efforts during the winter months as well as the construction season. Such personnel could be kept busy during the so-called off season in such areas as public information programs plus the advance planning of potential projects.

c. Involvement of Board of Road Commissioners. At present the three road commissioners participate in all legal steps necessary to process special assessment projects (orders of determination, declarations of necessity, etc.) but otherwise do not appear to have especially close contact with the program. Increased commissioner participation, particularly in those aspects of the program involving contact with concerned citizens, could be of decided value. As an example, citizens who were seeking to initiate a special assessment improvement project could be occasionally invited to a board meeting for a mutual exchange of views with

the commissioners. This should be beneficial both in giving the road commissioners an opportunity to obtain a grass-roots picture of the extent of public desire for street improvements, and in providing an opportunity for citizens to express opinions directly to the policy-making body. It similarly would be most worthwhile for individual commission members to frequently attend administrative information meetings and public hearings in order to keep abreast of community opinion and to check on the adequacy of presentations made by their own staff, plus citizen reactions thereto.

d. Board Secretary's Role in Processing of Projects. At present, practically all incoming and outgoing documents relating to the special assessment program flow through the subdivision improvement division. This does not appear to be sound practice. Documents received from or sent to citizens or other public agencies normally are—or should be—in the name of the board of road commissioners, which of course is the body that must take all formal action relating to assessment projects. Consequently it would appear to be desirable that such documents be handled primarily by the office of secretary to the board of road commissioners. This will remove the unit which in the eyes of the public may have expressed an opinion on the need for a project from the handling of petitions or other papers involving such project; will assure the citizens that their petitions and related papers are going to an administrative office representing the board; and should encourage the centralized keeping of important documents within the road commission.

It is recommended that documents relating to the special assessment program be handled by the office of the secretary of the board rather than the subdivision improvement division.

e. Centralization of Information Sources on Assessment Programs. When citizens seek information on either the special assessment program generally or on specific projects at the present time, they may find themselves speaking to any one of several staff members in the subdivision improvement division. Each of these employees appears to feel he is competent to discuss with citizens a rather wide variety of assessment program questions, including matters which may have definite legal implications.

While the present approaches may result in citizens receiving immediate answers to their questions on the overall assessment program or on specific projects, there exists the very real danger that such answers may be inconsistent or, worse still, partially or wholly incorrect. It seems clear that an administrative policy must be developed with respect to citizen questions which first of all will centralize in one or two thoroughly knowledgeable staff members responsibility for receiving such questions and developing correct answers thereto. Secondly, in order to make certain that answers are not misconstrued, except in relatively unimportant matters or in cases where a quick response is absolutely essential such answers should be incorporated in a letter to the person making the inquiry. In addition, any questions containing legal implications should be answered or at least reviewed by the legal office of the commission.

It is recommended that responsibility for responding to public inquiries concerning special assessment programs be centralized in one or two thoroughly knowledgeable staff members; that, as a general rule, responses be in writing; and that responses containing legal implications be reviewed by the legal officer of the commission.

f. Written Internal Procedures. Rules and regulations governing internal procedures and processes of the road commission in the planning and execution of special assessment projects should be reduced to a single written document and approved by the chief administrative officer and by the board. Subsequently all internal functions should be performed in accord with such rules and regulations.

It is recommended that rules and regulations governing internal procedures of the commission in respect to special assessments be reduced to writing and approved by the board of road commissioners.

6. Inadequate Coordination with Other Departments of the County Government. There are two county agencies whose activities to a considerable degree interrelate with those of the Oakland County Road Commission. These are the Department of Public Works, which has important responsibilities in the provision of sanitary sewers throughout much of the county, and the County Drain Commissioner, with broad duties in the field of storm water drainage. Many of the sanitary sewers installed by the Department of Public Works are located within street rights-of-way; while numerous storm water drainage projects under jurisdiction of the drain commissioner interrelate with drainage systems for streets and roads.

Despite the obvious need for coordination between the road commission and the two agencies mentioned above in their respective fields of work, many citizens and officials of other jurisdictions have felt that any type of really united approach has been lacking. For example, there appears to have been little effort on the part of the road commission and the department of public works to jointly schedule the timing of projects. Thus the road commission has gone ahead with street improvement activities without serious concern about possible future plans by the Department of Public Works for installation of sewers in the area to be paved. Conversely the public works department has performed sewer work in a number of areas having unpaved streets without making any real effort to restore the street to its original condition, or to alert citizens, township officials, or the road commission to the desirability of a follow-up Improvement project.

It seems clear that the three agencies concerned need to coordinate their efforts much more closely than is done at present. Projects proposed by any one of the three agencies should as a standard procedure be submitted at a very early date to each of the other units for review and comment. Periodic joint meetings of personnel of the three agencies should be held to consider common problems and develop solutions. An integrated effort by the three units would aid greatly in insuring that the overall public improvement needs of the citizens of Oakland County were being met effectively and at minimum cost.

PLANNING DIVISION

The planning division is headed by a planning engineer who is directly responsible to the director of engineering. The planning engineer directs a staff of eight persons—one community planner, two civil engineers, four engineering aides and one stenographer.

The primary function of the planning division is to gather and develop pertinent information relating to the county road system, analyze and interpret the data, and prepare programs to meet the highway needs of the county. The data developed by the planning division are used for a variety of purposes including preparing reports for the state, meeting federal requirements, developing the road commission construction program, promoting intergovernmental cooperation in highway activities, providing information and staff assistance to the other divisions and departments of the road commission, and a number of other uses.

Preparing State Reports

Each year the road commission must submit to the Michigan department of state highways and transportation the following reports: (1) certification of primary and local roads', (2) mileage and condition reports of primary and local roads; (3) construction progress; (4) biennial construction programs; (5) safety funding; and, (6) highway needs study update. In addition, an annual financial report accounting for all monies received and expended for road purposes, by systems, is prepared by the accounting division.

Certification of primary and local roads is required by Act 51 of 1951. Act 327 of 1972 requires a separate certification of primary and local road mileage within the designated Federal Aid Urban Area Boundaries. This certification includes all roads open to licensed motor vehicular traffic and maintained by the road commission. It is summarized on forms for each governmental unit and is shown on appropriate maps.

The mileage and condition report summarizes miles of adequate and inadequate primary road, and miles of adequate and inadequate local road. Definitions for adequate and inadequate road as specified by the Michigan department of highways and transportation are:

“An adequate road or street is one which provides safe travel for the volume and character of traffic using it, without undue delays under normal conditions and with a normal maintenance cost. A road or street may be inadequate depending on the volume and character of the traffic using it, if alignment, grades, sight distance or width make travel dangerous or cause excessive delay in movement; if the type of surface, base, subbase, or drainage causes excessive maintenance costs, interference with travel during the spring breakup and other periods, or results in excessive wear on motor vehicles. A stone or gravel road would be considered adequate if it is safe for travel by light traffic, throughout the entire year without excessive maintenance costs. For traffic volumes over 100 vehicles per day, a gravel surface is generally inadequate because of high maintenance and dust prevention costs.”

The mileage and condition report for 1974 shows that of the total 2,371 miles of roads under the jurisdiction of the road commission, 1,912 miles or 81 percent of the total are classified as inadequate.

The construction progress form submitted lists each project on which monies were expended within the previous year giving such information as termini, project length, legal system classification, surface type prior to and subsequent to construction, length and expenditures.

A biennial construction program form is submitted which lists each project on an individual basis noting the termini of each project, the road classification, description of the road and proposed type of work to be performed, and the cost of each project. This program is a combination of future adopted programs and uncompleted projects noted in the construction progress report.

Safety is reported for the federal aid system on a progress report giving road name and FAS number, termini or location, corrective action, total cost, amount of federal funds and completion date.

In order to keep current the Highway Needs Study 1970-1990, information on appropriate changes are noted on forms furnished by the department of highways and transportation and on the computer printout and the maps which identify the control sections. Appropriate changes are those created by improvements, jurisdictional changes and system obsolescence.

The data, tabulations and maps used in preparing these various reports to the state are also used extensively by other divisions and departments of the road commission.

Role in Federal Projects

The federal rules, regulations and procedures have in recent years become increasingly complex as citizen involvement and environmental considerations have come to the forefront of programming requirements. Contrasting with the one sheet application form previously used for Federal Aid-Secondary projects is the voluminous document now necessary.

The initial step in federal project programming is the preparation of a strip map denoting the project schematically. After approval of the project concept by the departments and divisions involved, the cost is estimated and air and-noise pollution computations are made. When these are available, the public notices are printed. During the legal time requirement for public response various minor computations, application forms and text are made and compiled in a booklet.

The bound document is approved by the County Task Force, the Southeast Michigan Council of Governments, the Michigan Department of State Highways and Transportation, the State Planning Clearing House and the Federal Highway Administration. These are time-consuming steps, taking approximately one year, which materially affect advance program scheduling.

Upon notification that the review process is completed, project description and funding allocation information is communicated to the contracts section of the Michigan department of state highways and transportation for inclusion in the state agreement. The resulting agreement is then transmitted to all involved parties

including the road commission. The signed document and copies of the approval resolutions must be finalized prior to bid letting.

Another major program of the planning division during the past few years has been promoting a large number of federal aid projects under the Traffic Operation Program to Increase Capacity and Safety (TOP-ICS) which pays approximately one-half the cost of construction. Among these projects are:

1. Eleven Mile - Lahser – Northwestern
Widen bridge from four to seven lanes on Lahser
Widen pavement from two lanes to seven lanes on Lahser
Cost: \$2,000,000
2. Orchard Lake - Twelve Mile
Widen Orchard Lake from four lanes to seven lanes and channelization
Widen Twelve Mile from two lanes to five lanes
Cost: \$950,000
3. Fourteen Mile, I-75 to John R
Construct six lane divided highway plus protected left turn slots
Cost \$850,000
4. Clintonville - Walton Boulevard
Widen from two lanes to four lanes on Clintonville
Install traffic signals
Cost: \$200,000
5. Traffic Signal Interconnect Project
Coordinate timing of 170 signals on nine roads in a grid pattern to facilitate progressive movement in 17 communities
Cost: \$300,000

This program has had significant impact on the traffic problem. A total of 33 projects constituting \$5.5 million in federal funds triggered a \$14 million program. It made a major contribution to the construction program.

The TOPICS program has been phased out but federal funding under a new program entitled “Urban Systems” is continuing. The road commission is represented on the steering committee for these programs by the director of engineering and the planning engineer, the latter serving as chairman. Thus the division performs the service of collecting, tabulating and coordinating the data for the governmental units in the urbanized portion of the county. The planning division develops plans and programs, such as the “Oakland County Urban System Network” and the “SEMCOG 20Year Road Improvement Program.”

In response to Section 136(b) of the Federal Aid Highway Act of 1970, which directed that the secretary of transportation develop guidelines of standards for consideration of economic, social and environmental factors on future federal aid highway projects, the Michigan department of state highways and transportation prepared a program referred to as the “Action Plan.” The document contains an explanation of the

processes, studies and arrangements used in the planning processes with special emphasis on four fundamental planning issues.

1. Identification of social, economic and environmental effects.
2. Involvement of the public throughout the planning process.
3. Consideration of alternative courses of action (including the no-build alternative and other transportation modes).
4. Systematic interdisciplinary approach to planning.

This document will be the future guideline in the development of projects which involve federal funding, especially those having a significant impact on the social, economic and environmental conditions.

In the past the planning division has had a major role in federal aid projects and as federal aid requirements become increasingly complex and broader in scope, the planning division will become even more deeply involved in federal aid projects.

Master Right-of-Way Program

A major effort of the planning division has been the development Of the Master Rightof-Way Program.

In 1925, a Master Plan for highway right-of-way was prepared for Wayne, Oakland and Macomb Counties which specified that highway rights-of-way should be as follows:

Superhighways	204 feet
Major Thoroughfares	120 feet
Secondary Thoroughfares	86 feet

Although the Oakland-Wayne Superhighway Commission approved the plan August 31, 1926, very little was done to effectuate it in Oakland County.

While the Oakland County road commission adopted a Master Plan of Right-of-Way in 1953 and subsequently revised it, action in implementing the plan was slow. It was recognized that local master thoroughfare plans were not coordinated, that overall network continuity was lacking and that the development of A plan which was the same for all governmental units be they local, county, regional or state was needed.

About seven years ago the road commission, in cooperation with the Inter-County Highway Commission and the local units of government in the county, began developing a Master Right-of-Way Program. Meetings are held by road commission staff with the local planning commission, their planning consultant, state and regional plans are reviewed, and a negotiated consensus plan developed. This normally requires several meetings. The agreed-upon plan is adopted by the governing body of the local unit and by the road commission.

The basic purpose of the right-of-way plan is to preserve right-of-way for future growth, minimize the disruption of land use and the displacement of people, provide a plan for yard set-back standards for all new

developments and encourage local zoning which is compatible with need for right-of-way for transportation and utility purposes.

When the right-of-way program is adopted in a local unit, the road commission prepares an attractive brochure. The brochure portion of the program is a very necessary ingredient. Modern legal concepts place a premium on the right of citizens to know what is being planned if it affects them. This brochure fulfills this need and also alerts the prospective builder or developer as to future planning that affects him. Development in coordination with the program eliminates hardship and inconvenience when road improvements occur and saves the public money which would otherwise be used to acquire property developed in a non-conforming manner.

The master right-of-way program is not self-executing, but requires implementation by the local government through its zoning and building ordinances. The program must also be kept current.

To date about two-thirds of the local units in the county have adopted the master right-of-way program. The importance of securing adequate right-of-way has been stressed elsewhere in this report. While the master right-of-way program cannot retroactively make up for past failures to secure necessary right-of-way, it can contribute significantly to securing right-of-way in developing areas of the county.

It is recommended that the road commission continue its efforts to have all of the local units in the county adopt the Master Right-of-Way Program.

Planning and the Construction Program

In developing the board's road improvement program, the planning division staff gathers and interprets a vast amount of information which is used by management in the selection of projects for each year of a five-year program. This program is modified each year by execution of the first year's list of projects, revising the lists for years two through five, and adding a tentative list of projects for the fifth year.

To aid the management and the board of road commissioners in selecting construction projects the criteria shown in Exhibit 4 should be used. The planning division should have a major responsibility for developing and assembling the data required to utilize these criteria. (See pp. 164-166 for Exhibit 4.)

In Chapter 2 of this report on "Needs" it is recommended that a comprehensive ten-year program be developed to meet the priority construction needs of the county.

It is recommended that the planning division be assigned the staff responsibility of preparing a proposed ten-year program to meet the priority construction needs of the county.

The planning division already has available much of the data required for such a program. The plan should be thoroughly reviewed by the management and a proposed staff plan submitted to the board of road commissioners for its consideration in early 1975. The proposed ten-year plan should place primary emphasis on the priority needs of the county and the alternative means of meeting those needs in terms that can be readily understood by public officials and laymen.

Other Activities of the Planning Division

The planning division utilizes the computer printouts of accidents by section of road and intersections from the Traffic Improvement Association and the traffic volume counts made by the traffic department in analyzing the road network. Each year a map is prepared which shows the value of, and where each count was taken. A "Capacity Rating Map" is prepared which shows, in color, relative congestion on the entire road system in six classifications. Thus the sections of road which are the most deficient from the stand-point of congestion are easily identified.

Prior to 1965, the road system had very few miles which were critically deficient in traffic capacity but since then, even though there have been a number of widening projects, the number of miles of road which are now rated as having critical traffic capacity has increased substantially.

Road Mileage Having Critical Traffic Capacity

<u>Year</u>	<u>Miles</u>
1965	3
1966	6
1969	25
1973	47

The planning division prepares data used by the maintenance and traffic departments in planning their operations. The division participates in reviewing road abandonments, proposed plats, road plans, site plans, and preparing route location reports. The planning division is involved in special projects such as data collection and analysis of the impact on the county road system of such major developments as the Pontiac Stadium and large shopping center, office and industrial complexes and of proposed new state highways such as the Northwestern Freeway extension.

The planning division has available a tremendous amount of information on all aspects of highway financing, planning, design, construction, maintenance and operations. However, much of this information has not been made available to the public with the result that there is a lack of understanding and some misunderstanding of the work of the road commission.

It is recommended that the board authorize the staff, with the assistance of the public relations consultant, to prepare a series of slide presentations and brochures for the purpose of informing the public on the subject of the financing, planning, design, construction, maintenance and operation of the county road system.

The Future Role of the Planning Division

As described above, the planning division currently plays a major role in the collection and analysis of data related to most aspects of the road commission operations and in the development of plans and programs that affect a number of different departments.

During the last decade many new facets have been added to the field of highway engineering as a result of statutory requirements and public demand. Today the road commission must consider the impact of road improvements and maintenance activities on the total environment. Environmental concerns will become

increasingly important .as Oakland County continues to develop and becomes more congested. Factors such as stream and lake pollution, erosion, noise pollution, beautification projects and aesthetic concerns, non-motorized paths, and the inter-relationship between the road system and proposed mass transit systems will have to be taken into account in developing road commission programs. The county highway engineer will need more comprehensive studies to develop proposed highway improvement programs and the board of county road commissioners will want to evaluate proposed programs in much broader terms than it has in the past.

There is no single agency of the road commission that presently has the responsibility to make comprehensive studies of the type that will be required, although the planning division currently has responsibility for studies in some of these areas.

It is recommended that the planning division be assigned the responsibility for studies involving environmental concerns, non-motorized paths I the impact of mass transportation systems on the road system and for relating these studies to the more traditional highway engineering-type studies that it now undertakes.

The name of the planning division should be changed to reflect its broader role and it should be established as a separate department reporting directly to the county highway engineer. Departmental status would place the transportation planning-environmental concerns function at a co-equal level with the engineering, maintenance, traffic control and permit and special uses departments, which presently report directly to the county highway engineer.

It is recommended that a new department of transportation planning and environmental concerns be established under a director responsible to the county highway engineer.

Exhibit 4
Criteria Used In Selection of County Road Construction Projects

- I. PRIOR COMMITMENTS
 - A. Agreements or Contracts
 - B. Board Decisions
 - C. Previous Binding Commitments

- II. EMERGENCY CONSTRUCTION CAUSED BY
 - A. Spring Breakup
 - B. Flooding
 - C. Structural Failure
 - 1. Bridge
 - 2. Roadway

- III. COOPERATION WITH OTHER GOVERNMENTAL UNITS AND AGENCIES
 - A. Cost Participation with various governmental units and agencies
 - B. Timing of facility development, especially utility
 - C. County Department of Public Works
 - D. Emergency Federal Aid Programs

- IV. COOPERATION WITH BUSINESS AND INDUSTRY
 - A. Cost participation in development of road facilities serving
 - 1. Commercial sites and/or shopping centers
 - 2. Industrial sites and/or industrial parks

- V. COORDINATION WITH OTHER GOVERNMENTAL UNITS IN DEVELOPMENT OF
 - A. Urban Renewal Projects
 - B. Freeway Interchanges
 - C. Civic Centers
 - D. School Site Development
 - E. Flood Control Project
 - F. Sidewalks

- VI. COORDINATION WITH BUSINESS, INDUSTRY AND UTILITY DEVELOPMENT (especially timing)
 - A. Shopping Center
 - B. Industrial Sites
 - C. Utility Lines
 - 1. Electrical
 - 2. Telephone
 - 3. Gas
 - 4. Oil

VII. TRAFFIC SERVICE

- A. Lack of Capacity
- B. Congestion Reduction
- C. Traffic Volumes Carried
- D. Future Traffic Deficiencies
- E. Operating Speed
- F. Riding Quality

VIII. SYSTEM DEVELOPMENT - COUNTY PRIMARY ROADS

- A. Class "A" or all weather truck route
- B. Serve entire county
- C. All paved or dustless surface system
- D. Rural, Suburban to Urban
- E. Master Plan Completion
- F. Network Continuity
- G. Consistency of Roadway

IX. AVAILABILITY OF HIGHWAY FACILITIES

- A. Right-of-way
- B. Drainage Outlets
- C. Widened Bridges

X. ECONOMIC IMPACT ON AREA

- A. Area Development
- B. Population Growth
- C. Land Use Growth
- D. Recreational Development
- E. Master Planning

XI. PHYSICAL CONDITIONS OF

- A. Roadway
 - 1. Pavement
 - 2. Base and subbase
 - 3. Shoulder
 - 4. Drainage
 - 5. Lane width
 - 6. Soil condition
- B. Bridge
 - 1. Load capacity
 - 2. Clearance
 - 3. Roadway clearance
 - 4. Waterway opening
- C. Alignment
 - 1. Horizontal
 - 2. Vertical

- 3. Sight Distance
 - a. Safe passing
 - b. Safe stopping
- D. Railroad Crossing
 - 1. Surface
 - 2. Protection

XII. SAFETY

- A. Curvature, Grades and Sight Distance
- B. Vehicular Speed
- C. Marginal Clearances
- D. Rideability

XIII. REDUCTION OF MAINTENANCE COSTS

XIV. AVAILABILITY OF FEDERAL FUNDING

- A. On Federal Aid Secondary System
- B. On Federal "TOPICS" System
- C. On Federal Aid Urban System
- D. Special Safety Funds Available
- E. Scenic Parkway or Beautification Programs

CHAPTER VIII

MAINTENANCE OPERATIONS

The maintenance department is one of the four departments directly responsible to the county highway engineer. The department is responsible for maintaining the county primary and local road systems under the jurisdiction of the Oakland County road commission, for maintaining interstate highways and state trunklines within Oakland County under contract with the Michigan department of state highways and transportation and for maintaining the fleet of trucks, cars and other equipment used by the road commission in its field operations. The maintenance department is also responsible for providing services on a contractual or work order basis to other units of government and private individuals.

The county is charged by law with the duty “to keep in reasonable repair, so that they shall be reasonably safe and convenient for public travel, all county roads, bridges and culverts that are within their jurisdiction and under their care and control and which are open to public travel” (MSA 9.121). The maintenance department has the administrative responsibility “to keep in reasonable repair” the county road system.

The maintenance department is responsible for maintaining 2,371 miles of roads under the jurisdiction of the road commission—744 miles of county primary roads and 1,627 of local roads (as of January, 1974). The road commission has contracts with nine of the cities in the county under which the cities maintain 46 miles of county roads within the city boundaries. Thus, the maintenance department provides direct maintenance on 2,325 miles of county roads while cities provide direct maintenance services under contract on 46 miles of county roads. The road commission maintains the total system of interstate highways and ‘state trunklines within the county under contract with the state (the equivalent of 504 miles of two-lane pavement).

The maintenance department undertakes 38 different activities in maintaining roads and roadside facilities. These maintenance activities include surface maintenance activities (e.g., crack repairs, pothole patching, reshaping gravel surfaces); shoulder maintenance activities (e.g., grading shoulders, applying dust palliatives); roadside maintenance activities (e.g., cleaning-shaping ditches, mowing); general maintenance activities (e.g., sweeping); forestry activities (removing or trimming trees); and, winter maintenance activities (e.g., snow and ice control). Table 1 lists the 38 maintenance activities and indicates the road systems on which each activity is routinely performed. It should be noted that any activity might be performed on any road as necessary and appropriate—the breakdown in Table 1 shows the activities that are routinely scheduled on each type of road system.

In addition to these regular maintenance activities on the county road system and on state trunklines, the maintenance department also provides maintenance services to other units of governments on a work order (contractual) basis. One of the major services provided under work orders is the chloride program. The maintenance department has been providing extensive maintenance services on a work order basis to the city

of Farmington Hills, which recently incorporated, until the city develops its own street maintenance department. The maintenance department also performs, on a work order basis, some “heavy maintenance” which is actually in the nature of road betterment. Also, whenever a contractor working within the right-of-way fails to correct a hazardous condition or a nuisance, within the time specified, the county highway engineer may order the maintenance department to correct the condition at the expense of the contractor.

The maintenance department is also responsible for maintaining all rolling stock and for providing miscellaneous services for the road commission including janitor, watchmen, and building and maintenance improvement services.

Table 1
Summary of Maintenance Activities

<u>Activity</u>	Activities Regularly Scheduled by <u>Type of Road System</u>			
	<u>State Trunkline</u>	<u>Primary</u>	<u>Local "Mile" Type</u>	<u>Subdivision</u>
<u>Surface Maintenance</u>				
01 Crack Repair	x	x		x
03 Joint-Bump Burning	x	x		
04 Base Repair		x		
05 Remove/Replace Concrete Pavement	x	x		x
06 Pothole Patching	x	x	x	x
07 Machine Routing	x	x		x
08 Sawing Pavement	x	x		x
10 Plant Mix Patching	x	x	x	x
11 Reshaping Gravel Surface		x	x	x
12 Patch Gravel Surface		x	x	x
13 Recondition Gravel Surface		x		
14 Dust Palliatives		x		
<u>Shoulder Maintenance</u>				
20 Grade Gravel	x	x	x	
21 Patch Gravel	x	x	x	
22 Recondition Gravel	x	x		
25 Plant Mix Patch	x			
26 Dust Palliatives	x	x		
<u>Roadside Maintenance</u>				
34 Mechanically Clean Drainage Structure	x	x	x	x
35 Other Drainage Maintenance	x	x	x	x
36 Clean/Shape Ditches	x	x	x	x
37 State Trunkline Litter Pickup	x			
38 Area Mowing	x			
39 Swath Mowing	x	x	x	
40 Slope Mowing	x			
41 Spot Litter Pickup		x		
<u>General Maintenance</u>				
51 Curbed Sweeping	x	x	x	x
52 Non-curbed Sweeping	x	x	x	
57 Boulevard Mowing	x			
59 Other Routine Maintenance	x	x	x	x
<u>Forestry (Roadside Maintenance)</u>				
30 Remove Trees	x	x	x	x
31 Remove Brush	x	x	x	x
32 Tree Trimming	x	x	x	x
33 Chipping Tree Stumps	x	x	x	x
53 Tourist Facility Maintenance	x			
55 Mechanical Loading	x	x	x	x
56 Boulevard Landscape	x			
<u>Winter Maintenance</u>				
60 Snow and Ice Control	x	x	x	x
66 Other Winter Maintenance	x	x	x	x

Organization of the Maintenance Department

The maintenance department is headed by the director of highway maintenance. Reporting to the director of highway maintenance are two area maintenance operations supervisors, the garage superintendent and a maintenance operations engineer. The director is primarily concerned with overall planning and direction of the maintenance program, internal coordination of the work of the maintenance department, coordination with other departments of the road commission and liaison with other governmental agencies.

In managing the day-to-day road maintenance-operations the director is assisted by two area maintenance operations supervisors who direct the activities of the five maintenance districts and the forestry district. The maintenance operations supervisor in charge of Area I is responsible for directing the activities of Districts 1, 2 and 3 which cover the Western and Northern areas of the county. The maintenance operations supervisor in charge of Area 2 supervises the activities of Districts 4 and 4S, which cover the Central (Pontiac) and Southeastern areas of the county, and District 5, which is the Forestry District. In addition to working with the district superintendents in resolving day-to-day operating problems and handling special problems and assignments, the area maintenance operations supervisors are responsible for reviewing the work programs and schedules of the districts, evaluating their use of manpower and equipment, and inspecting the results of maintenance activities. The supervisors spend an average of about two-thirds of their time in the field and about one-third in the central office.

The superintendent of District 6, who is in charge of the central equipment maintenance garage, reports directly to the director of highway maintenance.

The maintenance operations engineer is directly responsible to the director and supervises the operations of the central office of the maintenance department and provides staff assistance to the director.

The present overall organization of the maintenance department is shown in Chart I.

The present top-level organization structure of the maintenance department establishes clear lines of authority and responsibility, provides an appropriate division of duties among the director and his principal assistants, and makes available sufficient top-level supervision to effectively manage the complex affairs of the largest operating department of the road commission.

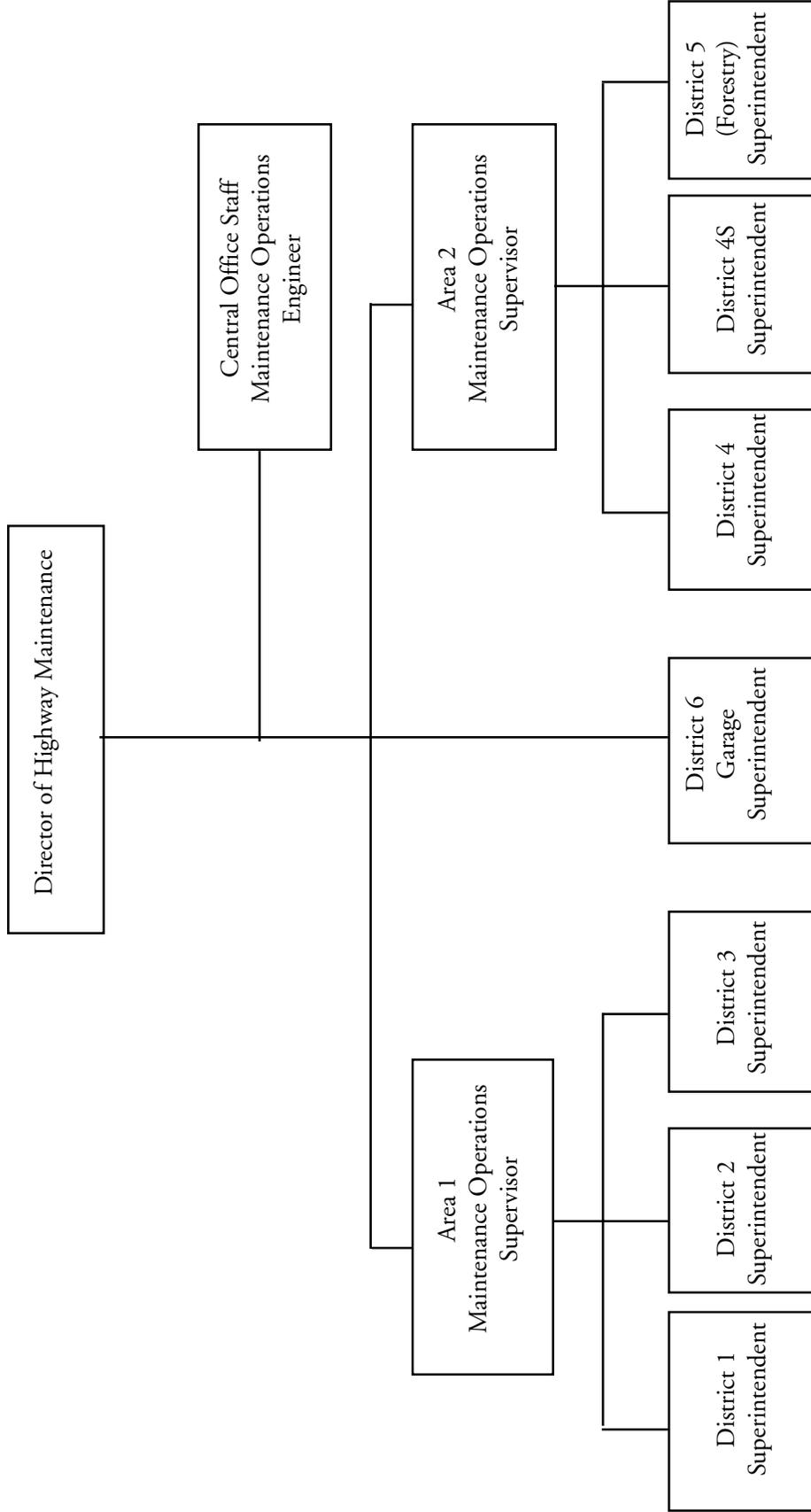
Organization of the Central Office Staff

The central office staff of the maintenance department is supervised by the maintenance operations engineer who reports to the director of highway maintenance. The central office staff (as provided in the 1974 budget) includes: maintenance operations engineer; civil engineer III; engineer aide III (spec.); engineer aide II; accountant I; general foreman-night supervisor; assistant superintendent on special assignment; and, stenographer.

In addition to supervising the central office staff the maintenance operations engineer assists the director in planning and evaluating maintenance operations. The maintenance operations engineer with the help of the civil engineer III provides engineering assistance to the districts including analysis of specific maintenance problems (such as recurrent flooding of a section of road) and the development of solutions.

CHART I

ORGANIZATION OF THE MAINTENANCE DEPARTMENT



The engineer aide III (spec.) serves as office manager, generally oversees the flow of paper work in the office and handles many of the complaint calls. He is assisted by the stenographer. The engineer aide II position, which is currently vacant, assists the maintenance engineers in survey work. This position does not appear to be essential to the staff operations and should be eliminated. The accountant I position, which is currently vacant, had primary responsibility for preparing reports and analyzing data from the maintenance management system. The filling of this position is discussed at the end of the section of this chapter on the maintenance management system. The assistant superintendent on special assignment is a partially disabled employee who serves as radio dispatcher. The general foreman-night supervisor works 4:45 p.m. to 12:30 a.m. He receives emergency calls and has full management responsibility for ordering out stewes, requesting supervisors to report for work, etc.

Organization and Supervision of the Maintenance Districts

As indicated previously, road maintenance operations are decentralized into five districts organized on a geographical basis and two districts that are county-wide the forestry district and the equipment maintenance garage. Each of the five maintenance operations districts has sufficient manpower and equipment assigned and materials available to make the district sufficiently self-contained to carry out daily routine maintenance operations and to make the initial response to emergency situations. The number and size-of these districts is subject to change as conditions warrant. The boundaries of the districts have been adjusted periodically in response to changes in the number of miles of state trunkline or county primary roads to be maintained, incorporations of new municipalities, etc. Also, whenever it is necessary to augment the manpower or equipment in a district to meet temporary changes in activities, this is accomplished by transfer. While each of the five districts has the basic manpower and equipment to provide routine maintenance operations, certain specialized equipment and personnel are assigned to District (Pontiac) and are used by all of the districts on an "as needed" basis.

Each of the five maintenance districts is organized along similar lines—a district superintendent is in charge of each district and responsible for maintenance operations within his district. Each of the five maintenance districts also has a general foreman and each has two foremen except District 4 which has four foremen. The number of hourly employees assigned to each district varies as shown in Table 2 later in this section.

²⁰ A new road maintenance operation district will be established in the fall of 1974 with the completion of a new building located in Troy. The new district will be staffed and equipped by re-deploying personnel and equipment from the present five road maintenance operations districts.

Staffing—Maintenance Operations Districts
1974 Budget

	<u>District Number</u>					<u>Total</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>4S</u>	
Superintendent	1	1	1	1	1	5
General Foreman	1	1	1	1	1	5
Foreman	2	2	2	4	2	12
Hourly	<u>30</u>	<u>29</u>	<u>32</u>	<u>54</u>	<u>32</u>	<u>177</u>
Total	34	33	36	60	36	199

At present, the only essential difference between a general foreman and a foreman is that the general foreman usually has more experience and fills in for the district superintendent when he is absent. There does not appear to be enough difference in duties, responsibilities or qualifications to warrant two different levels of foremen.

It is recommended that the distinction between foreman and general foreman be abolished and that a single class be established to provide field supervision in the maintenance operations districts.

In addition to the superintendent, general foreman and foreman assigned to each maintenance district, each district also has skilled and semi-skilled laborers who, according to their job descriptions, are also supposed to have some supervisory responsibilities. The semi-skilled laborer II “may direct some limited work activities in addition to his actual work.” The skilled laborer II “must be able to assume responsibility and direct the work activities of others with very little supervision or guidance. On occasion they will be called upon to fill in for either a construction, maintenance or forestry foreman. They will be expected to work and participate in said duties as much as possible.”

At the present time, this working level of supervision is not being utilized for supervisory purposes by the road commission and all supervision is provided at the foreman, general foreman and district superintendent levels.

It is recommended that skilled and semi-skilled laborers be utilized as working crew chiefs in accordance with their present job descriptions.

There are currently 28 skilled and semi-skilled laborer positions assigned among the five maintenance operations districts. Effective utilization of these positions as working crew chiefs would reduce the requirement for supervision at the foreman level.

It is recommended that the number of general foreman-foreman positions assigned to the present five maintenance operations districts be reduced from the present number of 17 to a total of 12, a reduction of five positions.

This will provide a basic complement of a district superintendent and two foremen in each district except district 4 which would have four foremen. With three salaried supervisory employees in each of four districts and five in District 4, there would be an average of one salaried supervisor for ten hourly employees. With the utilization of the skilled and semi-skilled laborers as working crew chiefs, this will provide adequate

supervision. The opening of the new Troy garage will require the addition of two supervisory positions—a district superintendent and a foreman. Thus, the net reduction in supervisory personnel would be three positions instead of five. This reduction could be accomplished through normal attrition.

A weakness in the supervision of the maintenance field operations is the general lack of formal-technical training. Among the present staff of foremen, general foremen, district superintendents and area maintenance operations supervisors, not one is an engineer by virtue of a college degree, or equivalent professional registration, or technically trained in a community college to assist an engineer. The maintenance department has consistently spent more of the motor vehicle highway funds than has been spent on the construction program. The construction of a modern highway requires the skills of technically trained personnel. Proper maintenance of the highways requires some of the same kinds of expertise, as well as the ability to effectively manage personnel. The field supervision should have the necessary skills for carrying out the maintenance programs established by the director of highway maintenance. This is not the case at present.

It is recommended that the road commission undertake a program of gradually upgrading the qualifications and educational requirements for supervisory personnel in the maintenance department.

The recommendation does not contemplate that any incumbent supervisory employee would be adversely affected. Present employees should be given the opportunity to up-grade their skills through training programs. As vacancies occur in the supervisory positions through normal attrition, higher qualifications should be established for new appointments to supervisory positions.

As the qualifications for positions such as area maintenance operations supervisor and district superintendent are increased, consideration should be given to increasing the status of these positions in the overall road commission organization and in the classification and pay plan. These supervisors play a key role in the effective utilization of resources to maintain the road system. Each district superintendent is responsible for directing activities in his district that cost an average of over one million dollars a year.

It is recommended that the positions of area maintenance operations supervisors and district superintendents be given a higher status in the classification and pay plans as the qualifications for the positions are increased.

In order to broaden the experience of both the maintenance and the construction personnel, it would be desirable to provide some rotation of assignments among the supervisory personnel of the two departments and to provide promotional opportunities that cross over the respective organizational units.

Trends in Number of Maintenance Employees

Table 2 shows the number of employees in the five maintenance operations districts and the forestry district from 1967 to 1974 (budgeted). There was a significant and steady reduction in the number of both hourly and salaried personnel from 1967 to 1972. The number of hourly employees decreased from 248 to 195, a drop of 53, and the salaried employees decreased from 35 to 25, a drop of ten. The overall decrease between

1967 and 1972 was 63 employees. Even after adjusting for the transfer of 12 employees from maintenance to traffic (guard rail crews), there was a significant decrease in the number of maintenance employees. Since 1972 the number of maintenance employees has remained relatively constant. Three hourly employee positions were added in the 1974 budget.

There has also been a decrease in the number of seasonal employees hired by the maintenance department—from a high of 68 in 1968 to a low of eight in 1972 and 1973. Thirteen seasonal employees are budgeted for 1974.

Table 2
Number of Maintenance Employees--
Districts 1, 2, 3, 4, 4S & 5 (Forestry)

	<u>Hourly</u> <u>Employees</u>	<u>Salaried</u> <u>Employees</u>	<u>Total</u> <u>Regular</u> <u>Employees</u>	<u>Number of</u> <u>Seasonal</u> <u>Employees</u>
1967	248	35	283	49
1968	236	34	270	68
1969	228	34	262	65
1970	223	32	255	35
1971 ¹	207	27	234	17
1972 ²	195	25	220	8
1973	195	25	220	8
1974 (budget)	198	25	223	13

¹ In 1971 the number of watchmen was reduced from 12 to three as a result of ADT installations.

² In 1972 guard rail crews (12 employees) were transferred from maintenance to traffic.

The work-load of the maintenance department is heaviest during warm weather (spring, summer, fall) and lightest during winter. While winter storms create a heavy workload for snow and ice control the maximum number of men required to man the equipment used for this purpose at any one time is 120, out of a total hourly work force of almost 200.

The maintenance department has attempted to deal with the slack-work problem during the winter by undertaking a wide-scale “winter tree program.” During the winter months, when other road maintenance activities cannot be undertaken because of weather and road conditions, the regular maintenance crews are assigned the task of removing from the county right-of-way dead and diseased trees and trees that create a safety hazard. During some periods during the winter more than half of the road maintenance employees are engaged in the winter tree removal program. This-work is productive and has enabled the road commission to cut into a sizeable back-log of trees that should be removed. A logical extension of the winter tree program would be to clear trees from the right-of-way of new construction projects. This work is now

performed by the highway contractors as part of the road construction contract. To the extent that maintenance employees could perform this activity during their slack periods, construction contract costs would be reduced.

There are two additional steps that could be taken to smooth out peak and slack workloads. First, additional seasonal help could be hired during the warm weather months to help meet peaks in work-load. There are several advantages to using seasonal employees. First, they are not on the payroll during the slack season, so there is no necessity to "make work" during the winter to keep employees busy. Second, seasonal employees receive an hourly rate of \$2.05-\$2.75, which is significantly less than regular hourly rates. Third, temporary seasonal help do not receive fringe benefits which greatly reduces the cost. Fourth, the road commission should seek to hire as seasonal employees engineering students or students studying in other fields that are related to the work of the road commission (drafting, surveying, etc.). This could provide the road commission with an excellent recruitment device for permanent employees. It is, of course, necessary to identify jobs that can be performed satisfactorily by seasonal help, taking into account safety, ability to handle equipment, etc.

It is recommended that the maintenance department identify activities that can be effectively and safely performed by seasonal help during the summer to meet peak work-loads.

Implementation of this recommendation should make possible some reductions in both the number of regular employees and in the amount of overtime worked during the summer.

A second step that could be taken to make more effective use of maintenance manpower would be to more effectively stagger vacation and leave days. During the months of April through October, when light and weather conditions are most favorable to maintenance activity, the number of men available for work is reduced through leave. In 1973 during this seven-month period (which represents 58 percent of the year) 76 percent of vacation days were taken. Since maintenance work cannot be done as efficiently during the November through March period, efforts should be made to increase the amount of leave taken during this period from the present 24 percent of total. The contract with hourly employees specifies that vacation be scheduled "considering both the wishes of employees and efficient operation of the department. concerned." The efficient operation of the maintenance department would be served by making more manpower available during the April through October period.

It is recommended that the maintenance department vacation schedule . be arranged so that about 35 percent of vacation time be scheduled during the April-October period and 65 percent during the November-March period.

The Maintenance Management System

The maintenance department utilizes a formalized management system. The system is frequently referred to as the “Jorgensen System” because Roy Jorgensen Associates, Inc. served as consultants to the road commission in designing and installing the system. The management system for road maintenance operations has been in effect since May 1970.

Despite the fact that the maintenance management system has been used by the maintenance department for over three years, there appear to be some basic misconceptions on the part of many employees and on the part of some public officials and citizens about the nature of the system. There is a widespread misconception that the “Jorgensen System” runs the maintenance department and makes management decisions. In fact, the “Jorgensen System” is simply a tool, albeit a sophisticated one, used by the management of the maintenance department in carrying out their duties. In short, as described in some detail below, management decisions in the maintenance department are being made by the responsible officials and not by any mechanical system.

While the basic element of the “Jorgensen System” is a relatively sophisticated performance budgeting process, the maintenance management system used by the road commission has incorporated a number of other elements with the result that the maintenance department has developed a systems approach to its management process.

The Performance Budget

Underlying the maintenance management system is a performance budget process that involves the following basic elements:

1. Definition of the specific work activities that are involved in maintaining roads and roadside facilities (e.g., reshaping gravel surfaces, mechanical cleaning of drainage structures). The 38 road maintenance activities that have been identified are shown in Table 1 of this chapter.
2. Inventory and inspection of roads and roadways to identify and measure the extent of the need for each type of maintenance activity (miles of gravel roads to be reshaped, number of drainage structures to be cleaned, etc.).
3. Determination of quantity standards for each work activity to define the level of maintenance to be provided (e.g., the average number of times each year that gravel surfaces will be reshaped, drainage structures cleaned, etc.).
4. Establishment of performance criteria for each activity to determine the conditions under which the activity is to be performed (e.g., cracks are filled only when the crack is at least one-quarter inch wide).
5. Development of work programs. The quantity standard for each work activity multiplied by the inventory subject to that activity determines the total work units for that activity to be included in the work program (e.g., if gravel roads are reshaped ten times a year and there are 100 miles of gravel roads, there are 1,000 (10 x 100) work units of that activity).

6. Establishment of production standards in terms of expected accomplishment using predetermined size of crew, type of equipment, and work methods (e.g., a 2-man crew using a grader and a floater is expected to reshape an average of ten miles of gravel roads in an eight-hour day).
7. Determination of resource requirements by applying the production standards for each activity to the work units involved (e.g., if there are 1,000 work units (miles) of reshaping gravel roads to be done and a crew does ten miles per day, 100 crew days will be required).
8. Development of cost data by application of average wage rates, standard equipment rental costs, costs of materials, fringe benefit and overhead costs, etc., to the resource requirements.
9. Preparation of the performance budget by totaling the resource requirements and cost data for each activity. The performance budget is translated into a line item-object of expenditure format for consideration in the overall budget process of the road commission.

A performance budget is developed for each of the 38 maintenance activities in each of the maintenance districts by type of road—state trunkline, primary roads, and local roads split between mile-type and subdivision streets.

The key elements in the performance budgeting process are the determination of the quantity standard, the productivity standard and the crew size and type of equipment to be used in performing the activity. For example, there is an inventory of 1,047 miles of gravel roads for the activity “reshape gravel surface” in the combined local road-subdivision street category. For 1974, it was decided that the quantity standard would be 14—that is, the 1,047 miles of local gravel roads would be reshaped an average of 14 times. Thus, the annual work quantity is 14,658 (1,047 x 14).

The productivity standard indicates that a crew will be able to reshape an average of ten miles of gravel road per crew day. Thus, a total of 1,465 crew days. (14,658 ÷ 10) will be required to perform that quantity of activity. Since the maintenance department uses a two-man crew on this activity the direct labor cost per crew day is \$88 (\$5.50 per hour x 8 hours x 2 men). The equipment planned for this activity includes a grader, a dump truck and an underbody blade, which have a combined rental cost of \$138 per day. The total cost per crew day is \$226 (\$88 for wages + \$138 for equipment) and the total direct cost for the year is \$331,090 (\$226 per crew day x 1,465 crew days). When the direct dollar requirements for all activities have been totaled, a factor of 50 percent is added to cover the cost of overhead supervision, vacation and sick time and fringe benefit costs. Thus, the total cost is \$496,635 (1.5 x \$331,090).

If the quantity standard for 1974 had been set at seven instead of 14, the total cost of performing this activity would be reduced by 50 percent. Or, if the productivity standard were eight instead of ten the cost would be 25 percent higher. Similarly, a change in crew size or equipment used would affect the cost.

The maintenance department has made continuing revisions in the quantity standards to reflect changing needs and priorities in the maintenance program. In general, decisions as to quantity standards have been made by the maintenance department management with the approval of the county highway engineer to reflect their professional judgments as to the levels of maintenance required, the relative priorities, and the impact on costs. The board of road commissioners normally has not been involved in the decision-making process of establishing quantity standards, although during the spring break-up in 1973, the board directed that priority attention be given to those activities such as reshaping and patching gravel surfaces that would help “get people out of the mud.”

The maintenance program represents a major segment of the road commission’s responsibilities and it is essential that the board of road commissioners have full information regarding the maintenance program and the potential impacts on both service levels and costs of alternative decisions as to quantity standards.

It is recommended that the director of highway maintenance prepare for submission through channels to the board of county road commissioners an annual work program in the performance budget format.

This should be done as a part of the annual budget process and provide the justification for object of expenditure-line item requests in the “appropriation” budget.

The maintenance department has also revised the productivity standards, crew sizes, equipment requirements, and work methods used in the various activities. The performance standards in effect in early 1974 for the 38 road maintenance activities were last revised as follows:

<u>Year Last Revised</u>	<u>Number of Activities</u>
1971	1
1972	7
1973	23
1974	7

The fact that 30 of the performance standards had been revised during 1973 and early 1974 indicates that the maintenance department is keeping the system current and illustrates the fact that the management is running the system rather than the system running management.

The quantity and performance standards in effect for 15 of the 38 maintenance activities for 1971 through 1974 were analyzed in the course of the study to determine the nature of the changes that were being made. These 15 activities are those which represent the largest portion of the maintenance budget and are routinely scheduled activities. Since in many activities there are different quantity standards, crew sizes or average daily productivity standards for the primary road system as compared to the local road system, there are a total of 30 of each type of standard involved in the 15 activities.

The analysis of quantity standards indicates that the levels of activity were increased in 19 instances (11 for primary roads, eight for local roads), decreased in five instances, and remained the same in six instances.

With respect to the work crew standard, the numbers of men assigned were increased in three instances (two primary, one local), decreased in 12 instances, and remained the same in 15 instances.

The productivity standards which measure out-put per crew day indicate increases in seven instances, decreases in ten instances, and no change in 13 instances. However, there were a number of changes in the size of crews used which affects productivity per crew day. To compensate for this, the productivity standard per man day was calculated. This shows that there were increases in 16 instances, decreases in eight, and no change in six.

In general, these data indicate that since 1971 the maintenance department has been scheduling a higher level of maintenance in most activities (the quantity standard), using the same or smaller size crews, and increasing the productivity standard per man day.

Operations Under the Maintenance Management System

The “Jorgensen System” as it has been implemented at the road commission not only provides a performance budget for maintenance activities, but also provides a systematic approach to directing operations and achieving control of performance.

The authorization to accomplish the approved work program is accomplished through the distribution of crew-day cards to the district superintendents. Each crew day card represents one day’s work by a standard size crew performing the specific work activity. The number of cards given each district for a particular work activity is determined by the number of crew days designated for that activity in that district in the work program. It should be stressed that the quantity standard established for each activity (e.g., reshape gravel local roads 14 times) is an average. It is the responsibility of the district superintendent to decide on the number of times any given section of road is to be reshaped depending upon the conditions on that section of road—base, drainage, surface condition, usage, etc. For example, one section of gravel road that has a high traffic volume might be graded 20 times a year while another with light usage is graded only eight times.

The maintenance management system provides a planned schedule of the number of crew days for each activity by month of the year based upon the most desirable time of the year to accomplish the activity. The crew day cards for each activity are consecutively numbered and each card indicates the month of the year during which that particular “crew day” is scheduled to be used.

Each district superintendent is responsible for scheduling the work activities of his crews on a bi-weekly basis, based on what work is needed, where the work is needed and when it needs to be done. The district superintendents, with the assistance of their foremen, are responsible for regular inspections of the roads within their districts and a “maintenance needed” form is used to record their observations.

The planned bi-weekly work schedules are submitted to the central office of the maintenance department and reviewed and discussed at a bi-weekly meeting of the director of highway maintenance, the area maintenance operations supervisors, the maintenance operations engineer, the district superintendents and other

members of the central office staff. In addition, the district engineer of the state highway department participates in these bi-weekly meetings to discuss problems on the maintenance of the interstate system and state-trunklines and to exchange information on developments in the maintenance field such as evaluation of new materials or equipment.

In addition to reviewing the bi-weekly work schedules and discussions with the state engineer, these bi-weekly meetings are used to evaluate overall progress and problems, to schedule the use of specialized equipment or the lending of crews or equipment from one district to another, and to provide two-way communication between the field offices and the central staff. These bi-weekly meetings are an important element in the maintenance management process.

The district superintendent implements his bi-weekly work schedule by giving his foremen crew day cards for the specific activities to be undertaken. The foreman then assigns individuals to the crews and to the specific work locations and is responsible for completing the crew day card by indicating the amounts of labor, equipment and materials used and how much of the activity was accomplished.

The completed crew day cards are reviewed by the district superintendent to determine whether the work is being accomplished with standard crew sizes and is meeting productivity standards. This review, coupled with field observations of work methods and accomplishments, provides the district superintendent a basis for determining whether he is scheduling the right kinds and amounts of work in the right locations and whether the maintenance program is producing satisfactory results.

The crew day cards are submitted to the central office where they are reviewed and prepared for data processing. A variety of reports are prepared on work progress in relation to planned work objectives, actual productivity compared to plan, etc. The reports are evaluated by the central office staff and director of highway maintenance and necessary actions are taken to insure fulfillment of work programs.

A comparison of the number of planned and actual crew days, total work accomplishment and average daily productivity in calendar 1973 for six major activities (each of which involved over 500 crew days of work) is shown in Table 3. There were some significant deviations in the "planned" and "actual" number of crew days. For example, on activity 011—"reshape gravel surface" a total of 2,980 crew days were planned and only 1,993 actual crew days were used. However, the total work accomplishment was greater than planned because the actual average daily productivity was about 50 percent higher than planning estimates. A total of 18,192 miles of gravel surface was reshaped as compared to 17,880 planned. The average daily productivity was 9.4 primary and 9.0 local miles of gravel surface reshaped per crew day compared to the planning estimate of 6.0 miles per crew day.

In general, the data in the table indicate that in 1973 the actual average daily productivity was higher than planning estimates and the maintenance department was able to accomplish or exceed planned work objectives for these six activities using fewer crew days than planned. It should be noted that in the 1974 performance budget, the planned average daily productivity standard was increased for a number of activities based on actual experience in 1973. For pothole patching the standard was increased from 3.0 to 4.0 tons of mix per crew day; for reshaping gravel surface it was increased from 6.0 to 10.0 miles per crew day; and, for patching gravel surface it was increased from 90 to 120 tons per crew day.

Table 3
A Comparison of Planned and Actual
 Crew Days, Accomplishment & Average Daily
 Productivity for Six Major Activities in 1973

	<u>Crew Days</u>		<u>Accomplishment</u>		<u>Avg. Daily Productivity</u>		<u>Unit of Measure</u>
	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>	
006 Pothole Patching							
Primary	1,068	932	3,204	4,426	3.0	4.8	Tons
Local	<u>191</u>	<u>206</u>	<u>573</u>	<u>933</u>	3.0	4.5	Mix
	1,259	1,138	3,777	5,359			
011 Reshape Gravel Surface							
Primary	312	251	1,872	2,355	6.0	9.4	Road
Local	<u>2,668</u>	<u>1,742</u>	<u>16,008</u>	<u>15,737</u>	6.0	9.0	Mile
	2,980	1,993	17,880	18,192			
012 Patch Gravel Surface							
Primary	131	80	11,790	8,250	90.0	102.7	Tons
Local	<u>813</u>	<u>981</u>	<u>73,170</u>	<u>100,324</u>	90.0	102.2	Gravel
	944	1,061	84,860	108,574			
035 Other Drainage Mat.							
Primary	312	359	7,488	8,603	24.0	24.0	Man
Local	<u>187</u>	<u>328</u>	<u>4,488</u>	<u>7,865</u>	24.0	24.0	Hour
	499	687	11,976	16,468			
036 Clean-Shape Rd. Ditch							
Primary	429	280	1,503	1,056	3.5	3.8	Station
Local	<u>173</u>	<u>212</u>	<u>606</u>	<u>828</u>	3.5	3.9	
	602	92	2,109	1,884			
039 Swath Mowing							
Primary	500	453	4,500	4,019	9.0	8.9	Swath
Local	<u>128</u>	<u>143</u>	<u>1,152</u>	<u>1,420</u>	9.0	9.9	Mile
	628	596	5,652	5,439			

Evaluation of the Maintenance Management System

Two major criticisms have been directed against the maintenance management system: (1) it involves too much paper work, and (2) the system is too inflexible.

The amount of paper work involved in the maintenance management system is not excessive in relation the benefits derived from the system or the amount of paper work that would be involved in alternative systems of reporting work accomplishments. The crew day card, which is the basic source document, is preprinted and the only information that must be entered is the name of the foreman, the date, the location of the

work, the names of the employees assigned and hours worked, the equipment code numbers and hours used, the materials used and the accomplishment. Since normally only one card must be filled out per crew per day, the number of cards required is not excessive—an average of about 60 per day for all of the maintenance districts. It would take less than five minutes to make all entries on a crew day card.

One possible means of reducing the amount of paper work that was investigated during the course of the study was to combine the crew day card and the daily time sheet. The daily time sheet serves as the basis for payroll preparation and also provides the accounting department with cost distribution data that is used to: prepare various state reports; record costs chargeable to work orders, construction projects, special assessment projects, etc.; record expenditures by township; and for various other cost accounting uses.

While a few highway agencies have apparently successfully used a common source document for maintenance management purposes and for payroll-cost accounting purposes, this does not appear feasible at the Oakland County road commission at this time. However, as the road commission develops its data processing capability and develops payroll accounting and cost accounting applications, consideration should be given to using a single source document for both maintenance management system and payroll-cost accounting purposes. In the interim, the present system would be simplified if the same maintenance activity titles were used on both the maintenance management forms and the daily time report form. This will provide the maintenance department with more precise cost accounting data that ties in with its management system.

It is recommended that common terminology be developed to describe maintenance activities that are reported on both the maintenance management forms and the daily payroll forms.

The second major criticism of the system is that it is too inflexible. In part, this criticism has come from citizens who feel that the lack of immediate response to their complaints is because of the maintenance management system. Some road commission employees may have contributed to this attitude. An important element of the management system is the planning and scheduling of work activities to make the most effective use of men and equipment in meeting maintenance program objectives. While citizen complaints concerning hazardous conditions should be and are responded to and corrected promptly, most complaints deal with normal maintenance problems that will be corrected through normally scheduled maintenance activities. Complaints coupled with field inspections of conditions provide the district superintendents and maintenance office personnel a basis for determining priorities in the scheduling of activities.

The maintenance management system as a formalized process is by its nature somewhat inflexible. But, the management of the maintenance department made the decisions that went into the system and can and do change those decisions as conditions dictate. In addition, the system has procedures for providing additional crew day cards (work authorization) for a given activity whenever needed. Using the “system” to schedule and control normal routine maintenance operations, permits the management to use a management by exception technique in dealing with those problems which are unusual and are not adequately handled by the system.

Overall, the “Jorgensen System” has proven to be a useful tool in managing the maintenance program. One of the primary benefits is the fact that establishing and operating the system has forced the management of the road commission to make deliberate decisions as to quantity standards (service levels), performance criteria, work methods, crew sizes, productivity standards and other elements in the system. The “system”

has forced management to answer such questions as “what is the optimum number of men and type of equipment to accomplish this task?” or “how much of this type of activity can a crew be expected to accomplish in a day?”.

A second major benefit of the system is that it provides information feed-back on actual results compared to planned results that permits management to re-evaluate and make necessary changes in the several elements of the system. This feed-back has apparently enabled the management to increase service levels without increasing the number of employees by increasing the productivity of the workers.

A third major benefit of the maintenance management system is that it has enabled the department to distribute men and equipment among the districts (and the several areas of the county) on the basis of the amount and types of maintenance work that need to be done. The result has been a more efficient utilization of resources and a more uniform distribution of services among the various areas of the county.

A fourth benefit of the maintenance management system is that it provides a tool for accountability at every level in the maintenance department—from the crew to the foreman to the district superintendent to the operations supervisors to the director of maintenance. It provides the county highway engineer with a factual basis for evaluating the overall operations of one of the major departments for which he is responsible and for reporting on performance to the managing director and the road commission.

The road commission and its management should be commended for instituting the maintenance management system and using it effectively and should continue their efforts to refine and improve the system.

The successful operation of the maintenance management system requires the continuous attention of an employee with analytical skills. The maintenance management system involves the review and processing of a large volume of paper work (crew day cards), the preparation of a variety of reports, and, most importantly, analysis of the data to identify problem areas and progress in meeting planned objectives. While the engineer aide III has been filling in since the vacancy in the accountant I position, this has been in addition to his regular duties as office manager.

It is recommended that the director of highway maintenance give priority to filling the position responsible for “operating” the maintenance management system. Consideration might be given to reclassifying the present accountant I position to the engineer aide series.

The maintenance management system has recently been instituted in the equipment maintenance district (garage). To date, however, the system has been of only limited use in the management process of the garage as a result of the lack of staff to analyze the data. It appears that with clerical assistance to handle the volume of paper work involved in the maintenance management systems for both the maintenance and garage operations, one management analyst could handle both systems.

It is recommended that one clerical employee be added to the central office staff of the maintenance department to assist the management analyst in the operation of the maintenance management systems.

Forestry Division

The forestry division is under the supervision of the director of highway maintenance. The division, based at Pontiac, is authorized in the 1974 budget a staff that includes one superintendent, two foremen, and 21 workmen. The 21 workmen include 11 tree-trimmers.

Two of these workmen spend about 70 percent of their time as rest area attendants under contract with the state highway department. In the summer the other 19 workmen do landscape work, trim trees, and remove dead and diseased trees. They spend 80 percent of their time on the county primary and local road system and 20 percent on the state highway systems.

During the winter months each tree-trimmer supervises a group of six or eight maintenance workmen on tree removal. During the inclement weather the forestry men sand and refinish roadside picnic tables and repair their own equipment such as chain saws and clippers. The staff of the forestry division provides a back-up in emergency operations.

The work of this division will increase in the future in such areas as roadside beautification, bicycle and hiking pathways and picnic areas. As the road commission undertakes road improvement projects in the presently rural areas of the county there will be an increasing amount of forestry work involved in clearing rights-of-way. Long-range plans should include the employment of a trained forester.

Garage Division

The director of highway maintenance is responsible for supervising the maintenance of all automotive equipment and buildings of the commission. It is his responsibility to see that all the equipment is properly serviced and maintained, that there are enough trucks and other types of automotive equipment available to meet daily requirements as well as emergency use.

The garage division (District 6) has a total authorized staff of 57 employees, including one superintendent, one general foreman, two foremen, one clerk, 34 mechanics and 18 other hourly employees. The main garage contains all the shops operated by the commission, the facilities for all major repair, replacement or alteration for any automotive equipment, and also houses the district garage for the district in which it is situated. The main garage operates on two shifts—day and afternoon.

The routine servicing of equipment is done by a mechanic assigned to each of the district garages. This includes repetitive servicing and record keeping such as oil changes, lubrication, replacing spark plugs or air cleaners, and similar work. All other repairs and replacements are done at the main garage.

Table 4, furnished by the maintenance department, shows the automotive equipment inventory as of June 1, 1974. There are approximately 100 classes of equipment defined by the Michigan department of transportation. The list here included shows only 22 classes. The commission groups the remaining classes together as other, since they represent only 15 percent of the total expenditure for equipment. All classes are individually covered in performance reports.

Table 4
Oakland County Road Commission
Equipment Inventory
June 1, 1974

		<u>Number of Units</u>
10.100	Automobile	57
12.300	Truck-pickup	106
12.302	Truck - 1-1/2 ton	8
12.303	Truck - 2-1/2 ton	12
12.304	Truck - crew cab	2
12.305	Truck - 4 cy	25
12.306	Truck - 5 cy	45
12.512	Truck - 10 cy (county)	29
12.522	Truck - 10 cy (state)	15
45.104	Grader - light	5
45.105	Grader - heavy	16
47.302	Truck-shovel (Hopto)	7
47.403	Loader front end	6
47.602	Gradall	2
48.201	Scraper U/B	37
62.300	Snow Plow - one way	34
62.350	Snow Plow - rev.	66
63.350	Spreader - salt	85
70.101	Tractor - farm	36
81.110	Mower - sickle bar	25
81.256	Mower - rotary	7
83.240	Sweeper - mobil	4
99.999		

Equipment Maintenance Standards

The road commission uses the Jorgensen equipment maintenance system and has established certain standards of quantity of work by class of equipment, productivity, material cost, and finally, total cost.

Quantity standards are stated in terms of the average number of repairs per year per unit for each major class of equipment. These values were calculated from (1) manufacturer's recommended servicing; (2) preventive maintenance policies; (3) past experience with repairs on equipment operated in an adverse environment; (4) current replacement cost; and, (5) estimated life of the equipment. The time required for each repair and service activity is based on past experience.

A work program is scheduled from these data. The schedule takes into Account the mechanics available at intervals throughout the year, and the seasonal requirements of some classes of equipment. Weekly throughout the year a report of equipment inoperable because of needed repair is sent to the office of the garage superintendent for an evaluation of the overall condition of equipment available in any class of equipment.

This evaluation is directed to the maintenance engineer for final action. If, in his opinion, the equipment available for operations in any one class is insufficient, he may order overtime work on that class, or reassign mechanics from other work until the number of operational pieces of equipment is sufficient.

Reporting

There are a number of forms used by the maintenance department to record work performed and cost of servicing and repairing automotive equipment. These include:

1. A permanent record on each piece of equipment showing the pertinent lubrication activities connected with the vehicle.
2. A record of any piece of equipment immobilized because parts are needed, repairs are proceeding on a low priority, or authorization is needed to proceed with repairs.
3. A weekly report by district showing important pieces of equipment down for repairs.
4. A report to show types of repair where the operator's action may be a contributing factor.
5. A check-list for the mechanics to use in inspecting equipment.
6. A history sheet of repairs completed and the date completed. This sheet contains a complete record from which comparisons can be made, or the cost of operating any piece of equipment can be computed.
7. A repair order form which shows all repairs done, the cost of parts and labor needed to make the repair, and such other information as may be needed by other departments for record keeping.

The accounting department keeps a complete file on the cost of operating each piece of equipment from the initial cost to its final disposition.

The commission is compiling a great deal of information about its automotive equipment. However, limited use has been made of this information to improve the management of automotive equipment. It is recommended in the section of this chapter on the maintenance management system that a "management analyst" be hired to analyze both the maintenance operations data and the equipment maintenance data. One important duty of the analyst would be to determine the relative cost of owning or renting each type of equipment.

Total Equipment Costs

Data compiled by the accounting division for 1973 show the following equipment costs in 1973:

Direct Repair Costs	\$896,823
Indirect Repair Costs	670,666
Gas and Oil	137,812
Depreciation	<u>650,063</u>
Total Costs	\$2,357,041

For cost accounting purposes equipment rental is charged to the department utilizing the equipment on the basis of standard charges developed by the Michigan department of state highways and transportation. In 1973 rental charges totaled \$2,712,517 and exceeded costs by \$355,476.

When the finance department is established consideration should be given to establishing an equipment revolving account. All costs of owning and maintaining equipment would be charged to this revolving account and the account would be credited with rental charges to the departments using the equipment. As a long-range goal, depreciation reserves for equipment should be established from which equipment replacements would be financed. From a budgetary standpoint each department utilizing equipment would budget equipment rental as an operating expense, while the budget for the equipment revolving account would budget these rental charges as income and would budget expenditures for depreciation, gas and oil, repair and maintenance costs. The use of such a system would improve the planning for equipment utilization and acquisition, provide greater control over operating costs, and as depreciation reserves are built up insure that funds are available for equipment replacements when needed.

Pickup Trucks and Passenger Cars

In the section of this report on personnel administration it is recommended that the commission discontinue the practice of permanently assigning passenger cars to individual employees and instead operate a motor pool. More efficient use of pickup trucks could also be achieved if they were placed in a motor pool.

The board operates 105 pickup trucks according to the inventory list (June, 1974). Some of these pickups are used for transportation by those whose work requires the use of small tools and equipment, or whose travel is on special field assignments. Maintenance department supervisors, laboratory field men, inspectors and surveyors are the principal users of pickup trucks for transportation.

Since the use of the pickups throughout the year is, for the most part, divided between the engineering department during construction season and the maintenance department during winter months, and since these two uses tend to overlap, it would be more efficient to have this equipment placed in a common pool and allocated as the need varies.

It is recommended that the commission place all pickup trucks in a common pool.

CHAPTER IX

PERMITS AND SPECIAL USES

The department of permits and special uses is responsible for maintaining the integrity of the county road system by checking on overweight and oversize vehicles, issuing permits which prescribe limitations on use of the right-of-way and inspecting work which is being done within the right-of-way other than road commission-sponsored activities. This is a most important activity since it insures the safety and convenience of the public in its use of highways and it conserves the structure of the highway through controls on overloading, drainage, driveways and utility construction.

The department of permits and special uses is headed by a director who is responsible to the county highway engineer. The department has a total authorized staff of 24. It is organized in an office of the director, a weighmaster division and a permit engineering division.

The office of the director includes the director, an engineer aide III (specialist) who serves as office manager, a secretary and two typist-clerks. The office staff is primarily responsible for the filing of permits, accounting for permit bonds and fees that are collected and handling the sizeable volume of paper work connected with the permit function. In 1973 the department issued a total of 6,198 permits and collected \$91,433 in permit and inspection fees. The board of road commissioners updated the fee schedule effective January 1, 1974.

Weighmaster Division

Control of overloading is exercised by a weighmaster and four weighmen who enforce the weight and size limitations prescribed in the Michigan motor vehicle code, Act 300, Public Acts of 1949, as amended. This work is especially important during March, April and May when frost is leaving the ground and highways are subject to serious damage unless maximum allowable axle loads on concrete pavements are reduced by 25 percent and on all other roads by 35 percent. Permits for overweight vehicles are not valid during the time that weight restrictions are in effect.

“Rules and Regulations for the Issuance of Permits for Movement on Roads and Streets Under the Jurisdiction of the Board of County Road Commissioners of Oakland County” were issued by the weighmaster division in July, 1969. Since then there have been a few minor revisions made to some of the application and permit forms and a few adjustments in procedures.

Table 1 (on following page) shows the enforcement activities of the weighmaster division in controlling overloading in 1973. During 1973 the division had four employees, which has been increased to five in 1974.

When tickets are issued in overweight cases, two copies are sent to the court, one of which (green copy) is to be returned to the county road commission with the disposition noted. of the 142 overweight cases handled in 1973, dispositions were returned in only 108 cases., leaving the disposition of 34 cases unknown. In the 108 cases judgment fees totaled \$317.00; fines, \$4,043.00; and, costs \$6,998.00.

Table 1
Summary of Weighmaster Division Enforcement Activities in 1973

1.	Violations Issued	<u>Total</u>
	*Overweight	142
	Other Violations	19
	No Permit	52
	Warnings	85
2.	Verbal Warnings	222
3.	Vehicles Checked	1,451
4.	Patrol Mileage	107,871
	*Average Gross Overweight	17,000 pounds

In addition to enforcing weight restrictions the weighmaster division handles permits for house moves (77 in 1973) and issues permits (cab cards) for oversize or overweight vehicles (1,387 in 1973).

Analysis of the activities of the weighmaster division in 1973 indicates two areas of concern. First, the weighmaster and three weighmen checked a total of only 1,451 vehicles in 1973. In addition, these four employees received a total of \$16,903 in overtime in 1973, which provided the equivalent of another full-time employee. Assuming that the equivalent of four full-time employees was spent checking vehicles, this would represent an average of only 363 vehicles checked per employee during the year or an average of less than two per working day. This appears to be a relatively low level of productivity per employee and the total number of vehicles checked does not appear to provide an adequate level of enforcement to protect the county road system. In the 1974 budget an additional weighman was added, but the amount budgeted for overtime was reduced from \$16,903 to \$6,500.

It is recommended that the weighmaster submit to the director of permits and special uses a weekly report on the number of vehicles checked by each weighman and the number of violations issued.

The purpose of this recommendation is not to establish a "quota" for tickets, but to increase the productivity of the weighmen in checking potentially overweight vehicles and protecting the road system. The director of permits and special uses should submit a monthly report to the county highway engineer on the activities of the weighmaster division.

A second area of concern with respect to the activities of the weighmaster division is the relatively low level of fines imposed by the courts. In the 108 cases disposed of in 1973 the fines totalled \$4,043 or an average of \$37.44 per case. Yet the average case had a gross overweight of 17,000 pounds. Thus, the average fine was less than one-quarter cent per pound overweight (\$.0022). The law permits the court to impose a fine of up to \$.10 per pound overweight. The present fines do not constitute a very effective deterrent to overloading the county roads, particularly in relation to the cost of repairing the potential damage to a road caused by an overweight vehicle.

It is recommended that the director of permits analyze the fines imposed by the courts during 1973 and 1974 and prepare a report for the board of road commissioners. While the board cannot set the fines imposed by the courts, they can properly call the matter to the attention of the courts and the county board of commissioners.

The Permit Engineering Division

The permit engineering division has a 1974 authorized staff of 14 including two civil engineers and 12 engineering aides. This division is responsible for the inspection work in connection with permits for work in the right-of-way except that sponsored by the road commission. This includes underground construction, culverts, curb cuts, driveways, subdivision entrance markers, road oiling, banners and parades, etc. The division inspects all work done under the permits to determine that it is being done in accordance with the conditions stated in the permit.

One of the most important functions of the permit engineering division is to review the construction plans for underground projects and to prescribe corrections on the plans for public safety and protection of the highway.

Because of the increased volume of work on underground projects (water, sewer and public utility projects), it has not been possible to cover all underground work to the extent necessary to insure sufficient traffic control, proper backfill, and satisfactory restoration of the roadside and roadway. The 1974 budget authorized the addition of two inspectors which will enable the division to make more extensive inspections of underground projects.

Examples of improper work on the part of underground contractors include:

- (1) Backfilling with large clods of frozen material on South Shore in Waterford Township; Permit #E 18109.
- (2) Traffic control lax at Walton Boulevard and Frembes. Two-thirds of Frembes was obstructed with excavated materials. Boring pit was located within five feet of pavement; Permit #E 17874.
- (3) Trench too close to trees on Renshaw at Welland; Permit #E 1849.
- (4) Settlement resulting from poor backfill, Colorado near Brewster in Avon Township; Permit #16922.

The practice of only occasional inspection of underground projects does not insure compliance with the permit. The contractors pay inspection fees in addition to the permit for underground projects.

In addition to lack of adequate inspection of underground projects, the road commission has been hampered by inadequate permit specifications on underground construction projects. The staff has drafted new specifications for board approval.

It is recommended that the board of road commissioners adopt the proposed new specifications for underground construction projects.

One of the major problems encountered in the past on underground construction projects has been with the contractors working on water and sewer projects for the Oakland County department of public works. The staffs of the road commission and the D.P.W. have developed a joint memorandum of understanding on the inspection of construction by D.P.W. contractors in which the D.P.W. inspectors will enforce on a day-to-day basis compliance with the road commission specifications. The road commission will make spot check inspections during construction, will regularly inspect the restoration and cleanup, and will conduct final investigations of all projects. The proposed joint memorandum appears to resolve many of the problems that have been encountered on D.P.W. projects.

It is recommended that the board of road commissioners approve the joint memorandum of understanding on inspection of D.P.W. projects and direct the staff to provide periodic reports on the results achieved.

In order to facilitate the work of the department of permits and special uses, loose leaf manuals should be prepared covering the following:

1. OFFICE PROCEDURE

- a. A sample copy of each form completely executed.
- b. Description of the step-by-step handling of each form.
- c. Fee schedule.
- d. Legal references.
- e. Board policies.

2. WEIGHMASTER — TRAINING MANUAL

- a. A sample copy of each form completely executed.
- b. Office forms.
- c. Field activities - procedures.
- d. Legal references.
- e. Weight restrictions - truck operators map.
- f. Enforcement procedures.
- g. Board policies.

3. PERMIT ENGINEER — TRAINING MANUAL

- a. A sample copy of each form completely executed.
- b. Office forms.
- c. Field activities - procedures.
- d. Legal references.
- e. Board policies.

CHAPTER X

TRAFFIC ENGINEERING

The traffic engineering department is engaged in that phase of engineering which deals with the planning, geometric design and traffic operation of the county road system, for the purpose of achieving safe and efficient movement of traffic. The department also, on an at cost basis, does considerable work for the Michigan department of state highways and transportation and most of the municipalities of Oakland County.

The traffic engineering department is headed by a traffic control director who reports to the county highway engineer. The department has a total authorized staff for 1974 of 88 employees and is organized into two major operating divisions: the traffic services division (District 7) and the electrical services division (District 8). In addition to the two operating divisions, three staff engineer technicians and two stenographers report to the traffic control director.

The director, in addition to supervising the overall operation of the department, is engaged in many activities relating to traffic engineering. He participates in meetings with representatives of other agencies; approves items for his department which are sent to the county highway engineer for presentation to the board; conducts bi-weekly traffic operations planning sessions with the staff; reviews plans of Michigan department of state highways and transportation projects and of the cities as to their effect on the Oakland County road system; cooperates with the traffic improvement association in use of traffic accident data; participates in national programs on traffic engineering with the Institute of Traffic Engineers and the National Association of Counties; and attempts to develop traffic engineering programs that will provide a greater degree of traffic safety and convenience for the motorists and pedestrians.

The director is assisted by two stenographers who, in addition to handling the routine office work, assist the engineers in tabulating traffic volume counts and speed observation data; make a record of complaints and their disposition; give information to the public on such items as traffic volume and status of projects; and, process intersection counts and traffic signal warrant studies into the computer.

The three staff assistants to the director are the traffic surveys engineer, the traffic programs engineer and the senior traffic technician.

Traffic Surveys Engineer

The traffic surveys engineer is the senior member of the staff and acts for the director in his absence. This engineer supervises traffic studies such as surveys of parking and speed, including radar speed observations, and meets with representatives of the state police, sheriff department and local police, if the location is within a city, to interpret the data gathered, inspect the locations affected and recommend what action should be taken. Traffic regulations resulting from these investigations are drafted in the form of "traffic control orders" by the Michigan state police which, after approval by the director of state police, are returned to the county road commission for approval of the board, all in accordance with the provisions of Act 300 P.A. 1949.

Surveys are made for other traffic regulations such as traffic signal operation, stop regulations and yield regulations within subdivisions. Traffic control orders are drafted and submitted to the board for approval. Other traffic regulations calling for one-way operation or turn restrictions are drafted in the form of resolutions. These, also, are adopted pursuant to the provisions of Act 300 P.A. 1949. Once the traffic control rules and regulations have been approved they are given effect by the posting of necessary signs by the traffic services division.

The traffic survey engineer is the department's representative at Michigan public service commission inspections of railroad grade crossings where he presents highway and traffic information.

Traffic Programs Engineer

The traffic programs engineer is engaged in studies of traffic operations for the purpose of improving the efficiency of the road system. Considerable attention is given to the accident computer printouts for road sections and intersections which are furnished by the traffic improvement association. Also, the fatal accident reports from the various police departments are investigated to see if there are highway conditions in need of correction on the county road system.

The accident summaries from the traffic improvement association are especially useful since they disclose the intersections and road sections with the highest accident experience on the basis of traffic volume. Thus investigations can be directed at those locations which are most critical and can be improved through traffic engineering measures. A third computer printout, that of the Intersection Signal Warrant Rating, gives a priority rating of intersections which have been studied for signal control based upon the various factors pertinent to such studies.

In the field of highway marking this engineer makes performance tests of paints and paint powders to select products which have the longest life and are most economical. Tests are also being made of thermoplastic markings to determine if it would be economical to use them for some applications.

Another program now underway is that of installing impact barriers to reduce the severity of fixed-object type accidents at such places as bridge piers. These barriers are designed to absorb the energy of a moving vehicle in a short distance and, although there may be considerable damage to the vehicle, and slight damage to the barrier, the occupants of the vehicle are usually not severely injured. These devices have been installed on Big Beaver Road at the Grand Trunk Railroad and on Long Lake Road at the Grand Trunk Railroad.

Senior Traffic Technician

The senior traffic technician assists the traffic surveys engineer by assuming responsibility for some of the survey work and preparing traffic control orders and resolutions.

The senior traffic technician reviews driveway permits for compliance with the board's standards and corrections are indicated where necessary. Also, plats are reviewed for geometries and possible traffic operations problems. He also processes many of the complaints received by the department. A follow-up is made with the complainant to advise him of the results of the investigation.

Three other activities of the senior traffic technician are to schedule the fifty traffic count machines so as to obtain a current appraisal of traffic volume on the entire system and to produce those counts which are necessary for engineering, planning and traffic signalization. Another is the study of the need for signal installation by an appraisal of vehicular volume, interruption of continuous traffic, pedestrian volume progressive movement and accident experience. The third is to operate the video tape road analyzer machines in studies of traffic operations.

Electrical Services Division

The electrical services division has general supervision over design, installation and maintenance of all of the road commission electrical services. This includes all traffic signals as well as electrical services in road commission properties and the two-way mobile radio system of 200 units, the Bald Mountain repeater station, the Pontiac standby repeater station and base stations in each of the district garages.

The electrical services division is headed by an electrical services engineer (civil engineer III). The division has a 1974 authorized staff of 23 employees. The electrical services engineer, assisted by an electrical technician, is responsible for:

1. Consulting with representatives of cities and the state on signal installation and maintenance.
2. Reviewing road construction plans and consultation with design division to coordinate traffic control devices into the project.
3. Making traffic studies to determine need for electrical traffic control devices.
4. Preparing engineering drawings for installations.
5. Consulting with Detroit Edison Company on signal layout and coordination of installation with the work schedule of the company.
6. Determining signal timing.
7. Designing traffic signal interconnect systems for progressive traffic flow.
8. Writing equipment specifications.
9. Preparing traffic control orders for electrical devices.
10. Preparing cost estimates.
11. Making field observations of traffic operations.
12. Preparing layouts for special traffic control devices such as advance warning and turn restrictions.
13. Scheduling work programs with the superintendent of electrical services.

The electrical services division installs and maintains traffic signals, flashing beacons and other electrical devices on the county road system and for the Michigan department of state highways and transportation and for all cities and villages except Ferndale, Pontiac and Royal Oak. For the city of Birmingham and the villages of Holly and Milford only limited work is done.

The installation and maintenance work of the division is supervised by a superintendent of electrical services with the assistance of a stock clerk and two foremen. There are 17 hourly employees assigned to the division including four electricians, one assistant electrician, one radio repairman, and 11 employees in the several laborer classifications. The staff of the division was increased by three employees in the 1974 budget.

Table 1 shows the number of traffic control devices maintained by the division and the number of new installations and modernizations in 1973.

Table 1
Electrical Services Division—Number of Traffic Control
 Devices Maintained, New Installations & Modernizations

	<u>Number of Traffic Control Devices Maintained</u>			
	<u>Signals</u>	<u>Beacons</u>	<u>Miscellaneous</u>	<u>Total</u>
State	149	14	29	192
County	210	24	13	247
City	<u>106</u>	<u>5</u>	<u>10</u>	<u>121</u>
Total	465	43	52	560

	<u>New Installations (1973)</u>		
	<u>Flashing Beacons</u>	<u>Signals</u>	<u>Other</u>
State	2	5	
County	6	8	
City	—	<u>7</u>	<u>1</u>
Total	8	70	1

	<u>Modernizations (1973)</u>	
	<u>Major Signal</u>	<u>Minor Signal</u>
State	5	8
County	18	15
City	14	4
Total	37	27

Traffic signal lamps are changed twice each year. Even so, there are a large number of trouble calls for lamp burnouts, damage from accidents or equipment malfunctions. The number of these occurrences, when men were not on duty, nights, Saturdays, Sundays and holidays is as follows:

Trouble Calls at Other than Regular Working Hours (1973)

January	27	July	42
February	30	August	33
March	38	September	30
April	42	October	35
May	37	November	35
June	199*	December	35

* Storms in June caused the large number of failures in that month.

The electrical services division operates under a maintenance management system developed by Roy Jorgensen Associates, that is similar to that used by the maintenance department. Analysis of the crew sizes and work methods indicates that the division utilizes two-man crews in such activities as re-lamping, checking signal timing, and trouble calls during working hours and overtime calls. In 1973 a total of 647.5 crew-days or 1,295 man-days were spent on these activities. More effective utilization of personnel could be achieved if a one-man crew were used for these activities except in those instances where a second man is required for safety. This is the practice in other jurisdictions.

It is recommended that a one-man crew be used for such activities as re-lamping, signal timing and trouble calls, except where a second man is required for safety.

Implementation of this recommendation will make available the time of several men for improved controller maintenance and other activities which should reduce the number of trouble calls.

The productivity standards, work methods and crew sizes used for other activities performed by the electrical services division should be reexamined to determine whether most effective use is being made of personnel.

It is recommended that the traffic control director evaluate the performance data from the management system for the electrical services department system to determine if present productivity standards are making most effective use of personnel.

It is also noted that the division has three supervisory employees (plus the electrical services engineer) for a 17-man work force. This includes a superintendent and two foremen or a ratio of one supervisor to 5.7 workers.

It is recommended that one foreman position be eliminated in the electrical services division.

The equipment maintained by the electrical services division is becoming increasingly complex. Since most of the employees have risen through the ranks, it is important that their skills be upgraded.

It is recommended that the electrical services engineer in consultation with the director of personnel develop an inservice training program to upgrade the skills of the employees in the electrical services division.

Traffic Services Division

The traffic services division has supervision over the design, installation and maintenance of all traffic control devices, other than electrical, on the county road system, all in accordance with the Michigan Manual of Uniform Traffic Control Devices. In addition, it maintains signs and guard rail and does special painting such as stop bars, legends And construction area marking for the Michigan department of state highways and transportation. Also, it does street marking for 20 cities.

The division is headed by a traffic service engineer who reports to the traffic control director. The division has a 1974 authorized staff of 59 employees.

The traffic services engineer, assisted by a staff of five traffic technicians is engaged in the following functions:

1. Consulting with representatives of cities and the state on the work to be done for these agencies.
2. Assigning and supervising the work of the traffic technicians on plans for traffic operations control at road construction projects and the permanent signing and markings which will be required.
3. Reviewing traffic control orders and board resolutions and authorizing necessary signing and marking.
4. Reviewing the investigations of complaints and the action recommended.
5. Developing work programs with the superintendent of traffic services consistent with the Jorgensen Maintenance Management System.
6. Coordinating highway marking program, edgelines and centerlines on the county road system.
7. Processing state authorizations of painting on trunklines.
8. Coordinating the painting program for school crosswalks and school legends.
9. Making arrangements for the street marking for 20 cities.
10. Coordinating special signing projects such as upgrading at school crossings and installation of street name signs.
11. Coordinating and scheduling guard rail installation and repair.
12. Reviewing geometries of construction projects.
13. Making investigations of complex traffic problems.
14. Preparing specifications and developing quantities for materials and equipment.

Field operations of the traffic services division are directed by a superintendent of traffic services. The field operations division has one general foreman, two foremen and 48 hourly employees.

The amount of field supervision appears appropriate, but

It is recommended that the distinction between general foreman and foreman be eliminated and that a single classification of foreman be used.

All personnel work out of Pontiac except for three two-man sign crews and one two-man guard rail crew which work out of maintenance district field garages. These crews, however, are supervised by the traffic services division.

The major function of the traffic services division is the fabrication, installation and maintenance of traffic signs and pavement marking. All of the signs are reflectorized and prepared in the road commission sign shop at Pontiac. They conform to the specifications outlined in the Michigan Manual of Uniform Traffic Control Devices.

The division also operates three lane marking machines. One is of the latest design and can place lane and centerlines simultaneously. Since the paint placed by this machine dries within 20 seconds, it is not necessary to protect the lines with cones which minimizes traffic delays. A second machine, using normal drying paint, 30 minutes, places lane and centerlines. The third machine is used for edge lining only. This latter activity is very important in this county because of the large mileage of narrow bituminous roads with many curves and grades and because of the frequent presence of fog. For painting crosswalks in high traffic areas six hand operated machines which use a heated striping powder are available. This material dries instantly.

In addition to doing the sign and marking work on the county road system, the division does some signing and marking for the Michigan state department of highways and transportation, and does considerable marking and painting of crosswalks and school legends within cities, on an at cost basis.

The field operations unit of the traffic services division also makes radar speed observations, pedestrian and turning movement counts and operates 50 portable traffic counters. It has one carpenter who, in addition to making signs and survey stakes, does carpenter work at the main office. The unit also installs and maintains guard rails.

Proposed Reorganization

The present organization of the traffic engineering department is cumbersome and there is considerable overlapping of duties and responsibilities. The duties of the traffic surveys engineer, the traffic programs engineer, and the senior traffic technician tend to overlap with each other and with the duties of the electrical services division and the traffic services division.

The basic work activities of the department fall into two areas: 1) traffic engineering activities including studying, planning and designing traffic movement and control; and 2) the installation and maintenance of traffic control devices, markings and guard rails.

It is recommended that the traffic engineering department be organized in two divisions—engineering and operations-directly responsible to the traffic control director.

The engineering division would be responsible for making traffic surveys, collecting and analyzing accident reports, reviewing plans, designing geometric layouts, developing traffic regulations, and providing engineering services to the operations division. The operations division would be responsible for installing and maintaining signs, electric traffic signals, pavement markings and guard rails. The traffic services division (District 7) and the electrical services division (District 8) would be included in the operations division.