

HISTORY
OF THE
BOARD OF MUSKEGON COUNTY ROAD COMMISSION

In order to tell the story of the Muskegon County Road Commission it is necessary to set forth some of the history of the road legislation and history of roads at the state level. These factors have affected the history of the Muskegon County Road Commission. Further, the history of the Commission has been developed in various subject areas of interest.

For these reasons, the history of the Board of Muskegon County Road Commission is presented in several sections as follows: (1) a general overview of the development of roads and road legislation in the State of Michigan; (2) the organization of the Muskegon County Road Commission; (3) Commissioners who have served on the Commission; (4) county roads – their classification and mileages; (5) funding and expenditures; (6) facilities and of the Commission; (7) a history of equipment; (8) a history of construction and (9) some highlights of early Commission minutes.

GENERAL OVERVIEW OF ROAD HISTORY

For Muskegon County and the State of Michigan, as well as the nation, the motor vehicle and the highway has brought about a new way of life. In addition to reshaping the process of industry, commerce and agriculture, the public highway system has profoundly influenced nearly every activity of the individual, the family and the community.

Transportation occupies a position of supreme importance in today's society and economy. For many reasons over the years the administration, construction and maintenance of a public highway system has come to be recognized as a basic service of government.

The most obvious beginnings of Michigan's transportation network consisted of the Great Lakes, the rivers and Indian trails and paths. The earliest roads in the Northwest territory were built by the Federal Government or the Michigan Territorial Government; first for military purposes and second, in order to promote settlement of the territory.

After Michigan became a state in 1837, the Federal Government withdrew its support of road building and left the State with this responsibility. Because the State had limited funds to spend on roads, construction stopped and maintenance fell behind.

The very first roads were probably nothing more than areas cleared of trees, stumps and other obstacles that would permit the passage of horses and wagons. One of the first attempts at road construction was called "corduroy roads". These roads were made by placing logs on the ground without regard to size of the logs or the smoothness of the riding surface. These roads had a very unique feature in that as they wore down, the ride became smoother. As rough and uncomfortable as they were, they were highly regarded by Michigan's pioneer citizens and in fact, they referred to them as pleasure roads.

Due to the lack of maintenance and reconstruction, these early roads fell into disrepair. At the time, travel and demand for better roads was increasing. In response to this increased travel, Michigan entered what is called the "plank road" era and private companies were formed which built privately-owned roads and charged tolls. In 1848, the State Legislature passed legislation known as General Plank Road Act to regulate the operations of these businesses. Michigan was one of the first states to experiment with plank roads.

Plank roads were required to be from eight (8) to sixteen (16) feet wide and to provide a good smooth permanent road of which an eight-foot width was to consist of three-inch thick planks. The plank roads were actually well-designed roads, considering the conditions under which they were built. Many of them had ditches and a shoulder where wagons could pull off. When new, they were relatively smooth and easy on horses and passengers of wagons. The tolls for two-horse wagons

and carriages and every score of neat cattle was two cent per mile and for one-horse vehicles, the rate was one cent per mile.

It was soon discovered that timber planks decayed rapidly or people stole them to use for building materials. Due to the high cost of timber, gravel was used as a maintenance material instead of rebuilding with timber. This type of maintenance marked the beginning of gravel road surfacing. Over a period of time these plank roads could not be maintained by private companies from the tolls received, and they simply went out of business. Therefore, this form of road disappeared as a way to provide for transportation.

About the time plank roads were going out, the railroads came to the Midwest and road building was neglected throughout most of the state until the turn of the century when the automobile appeared on the scene.

From the time of the earliest settlements in the State, the responsibility for construction and maintenance of roads was considered to be a local responsibility which was financed through property taxes and special assessments. Discounting the private toll roads, the only rural roads built in Michigan from 1850 – 1880 were township roads. The territorial law of 1827 had established the township as the basic unit of government responsible for roads. The new state constitution of 1850 carried this township responsibility forward and transferred to township control many of the earlier roads built by the state government.

The assignment of road responsibilities to the townships reflected the belief that road construction and maintenance was the responsibility of the people who lived along the roads. During this time, state statutes permitted the townships to require every adult male citizen residing along the road to work on construction and maintenance of the road a certain number of days each year in relation to the valuation of property or to pay a cash payment equal to the number of days required for work. Township residents who did not own property had to work one day each year or pay a tax equal to one day's labor. You could avoid laboring on the road construction only by hiring someone to work in your place; otherwise, you were fined \$3.25 a day. If you showed up but loafed, you could

be fined \$1.00 a day. If you failed to bring a horse when required, you were fined \$1.25 a day. This practice of “working on the road” was repealed in 1907.

The roads built under this township system were mainly roads to connect farms with trading centers, etc. Most often, there were no funds left to build roads to connect with other roadways or to interconnect towns. Further, the system of working the roads by inexperienced citizen labor and with untrained supervision meant that much of the road work was poorly done.

The “citizen built” tradition was the basis for the early opposition to the automobile. Citizens held the view that the roads belonged to them because they built them, and those new noisy machines frightened the horses so badly that the roads were nearly useless. Therefore, in many areas, there were attempts made to legislate automobiles off the roads.

In response to the need for better roads, and the need to interconnect roads into a logical system, six townships in Bay County joined with Bay City and West Bay City in 1883 to form a “Stone Road District”. This road district was established under special legislation of the State Legislature. The success of the “Stone Road District” initiated a belief that road administration, construction and maintenance must be carried on at a higher level of government with a wider tax base. During this time, an increasing number of Michigan citizens and businesses were becoming dependent upon the interconnection of places beyond the immediate vicinity of their geographic location.

The State Legislature, in response to this identified need, passed in 1893 the County Road Act. The new law permitted a county to establish a county road commission to knit the scattered township roads into a county road system. Counties which established such systems could levy road taxes and submit bond issues for various road projects to electorate.

Establishment of county road commissions made it possible to coordinate road construction and provide more uniform maintenance and acquire better equipment. Nevertheless, it was more than a generation before all counties adopted such a system.

By 1900, some 68,000 miles of roads existed in the state. However, these roads left much to be desired as only 200 miles were surfaced with stone or macadam, and less than 8,000 miles were

surfaced with gravel. The rest were simply unimproved dirt, sand or clay and many citizens would say "mud". These were not roads as we know them now, and many simply ended in places like cow pastures, in the woods or at the edge of town.

The turn of the century brought with it a public movement for more and better roads. In 1901, at the urging of automobile owners and bicycle enthusiasts, the State Legislature established a committee to study the problem of highway construction and improvements. This study committee's report recommended the establishment of a state highway commission and to amend the state constitution to eliminate the prohibition against using state funds for road improvements. In response to the study committee and public pressure, the 1903 Legislature passed legislation creating a state highway department. However, since no constitutional amendment had been submitted to the people, the State Attorney General declared the act null and void. Two years later in 1905, an amendment authorizing the state to build or aid in the building of public wagon roads was passed unanimously by the Legislature and ratified by each county in the State. At the same time, the Legislature created a state highway department, established a system of state aid for road construction and maintenance, and enacted a motor vehicle registration law.

The 1905 state aid system gave a big push to local road building and established a basis for a state-wide highway system and the beginning of improved local roads. Under this new legislation, the new State Highway Department was directed to work with townships and county road commissions in improving public wagon roads outside of the incorporated villages and cities. The State Highway Department furnished plans, instructions and advice, and by paying aid in the form of "rewards" for new construction. With the increased road construction and traffic came the need for improved maintenance as many miles of road existed in poor condition. Because of certain abuses of the reward aid formula, the State Legislature abolished this system in 1907, and enacted a cash road tax law which townships were authorized to levy a road repair tax on rural property and a highway improvement tax on all property within a township.

By 1913, the increasing use of automobiles brought an insistent demand for more and better roads. The State Legislature established a goal to establish a 3,000 mile trunkline system. Townships were given the responsibility for building these state trunkline routes and the reward system was re-established and double rewards were offered as incentive to get these roads built.

Automobile owners and registrations far exceeded new construction and maintenance. Along with the growth in ownership came the acceptance in the principle that the motorist should bear a portion of the cost. In 1913, the State Legislature imposed a horsepower tax on all motor vehicles, said revenues to be used for highway improvements. Two years later, 1915, a tax was applied to the weight of vehicles of which half of the revenues would go to the state and the remaining half equally divided by the townships and counties. These taxes marked a significant change in how the transportation systems would be financed.

Also, in 1915, the State Legislature passed the Covert Act of 1915 which allowed property owners to initiate road construction by petition, but required the landowners to pay at least half of the cost of such construction through special assessment, and the appropriate governmental unit was authorized to issue bonds to finance the general public's share. Through the passage of the Covert Act, the Legislature made it quite clear that local roads were still regarded as the primary responsibility of the property owners who benefitted from such construction. The Covert Act resulted in substantial miles of new road construction projects at the county and township level.

The significant interest in roads at the national level was reflected in the Federal Aid Road Act of 1916. This act provided for federal grants-in-aid, up to fifty percent (50%), for the cost of rural roads. The Michigan Legislature, in 1917, responded to the federal funding available by authorizing state matching monies and permitting counties and townships the authority to issue bonds to pay for local share of the cost. The Legislature also established the basis for local participation requiring counties to pay a share ranging from 25% to 50% of the total cost, based upon their assessed valuation. In 1925, a state law relieved the counties and townships of their share of federal aid roads and the state government assumed responsibility for the 50% match against federal funds.

About 1925, it had become increasingly clear that gravel roads could not withstand the volumes of traffic being generated. In response to this need to upgrade road surfaces, the State Legislature abolished the horsepower tax and imposed the first benefit tax, the gasoline tax. It was felt that this tax would place a larger share of the financial burden of road costs on the chief beneficiary – the road user.

At first, the gasoline tax went for state roads only, but in 1927, the gasoline tax was increased with the increase going to counties and townships to supplement funds raised by property taxes.

The depression in 1929 brought new funding problems, particularly for counties and townships. Property tax collections fell and tax delinquencies mounted leaving the counties and townships with substantially reduced funds. The demand for more and better roads continued during this time period. In response to this need, the State Legislature passed the McNitt Act of 1931. The McNitt Act was intended to be a property tax relief measure which it was, however, the Act also brought a major reform of local road administration.

In addition to eliminating the property tax for road purposes, the McNitt Act provided for consolidating all township roads into the county road system at a rate of 1/5 of the total township road mileage each year for a five-year period. At the end of this five-year period, no township roads would exist, and, this remains true today.

The transfer of township roads to county road commissions presented a significant problem for the various road commissions in the state in that a large portion of the township roads were semi-improved or unimproved roads which could not be economically maintained. Subsequently, the various road commissions found it necessary to spend substantial sums of money to improve these roads to a standard high enough to render minimum maintenance.

Because the financial responsibilities for roads was transferred from townships to road commissions, a greatly increased demand was placed upon road commissions by township officials and citizens to upgrade and maintain local roads. Road commissions attempted to upgrade local roads in order to get these roads into shape so that maintenance costs would be stabilized. As a

result, counties were forced to curtail improvements on primary road systems to upgrade and maintain local roads.

As the depression reached its lowest point, many local units of government defaulted on road bonds and necessary operating revenues were just not available. The State Legislature recognized the serious dilemmas posed by this problem, and the need to provide public works road projects and aid the employment situation. Attempting to meet this emergency, the State legislature passed the Horton Act of 1932 which reversed the distribution of state motor vehicle tax revenues. Although amended through the years, this legislation became one of the keystone pieces of legislation forming the basic financial mechanisms of the transportation system in Michigan.

In 1938, a constitutional amendment was passed which required that all motor vehicle tax revenues be utilized exclusively for highway purposes. This reservation of motor vehicle tax revenues for highways, streets and roads has held true over the years. Presently, however, the State Legislature is debating whether these funds should be utilized exclusively for highway purposes. Currently, this debate is unresolved.

The next major road legislation, Act 51, the Motor Vehicle Highway Act, was passed in 1951. This legislation act established a classification system for all roads in the state; established a motor vehicle highway fund, a system of taxes and distribution formulas. This Act, as amended, represents the existing major road regulation and source of revenues received by the Road Commission.

THE MUSKEGON COUNTY ROAD COMMISSION

Organization

The Muskegon County Road Commission was established by special election, November 14, 1894, by a vote of 2,052 to 707. Over the past 116 years, the Road Commission has been responsible for the construction and maintenance of major portions of the public highway system in Muskegon County. This system has grown and expanded as a result of public demand and state legislative actions.

The Muskegon County Road Commission is a separate governmental agency, somewhat independent of county government as we normally think of it, and was established under the County Road Act of 1893. The Act provides for a three-member body to establish policy and administer the functions and duties of the Road Commission.

In the early years, 1894 to 1918, the Commissioners were elected to full-time six-year terms. Beginning in 1919, the Road Commissioners have been appointed by the Board of County Commissioners. Since 1935, the Commissioners have served on a part-time basis. The present five-member Commission meets once each month, the third Wednesday of each month. Annually, the Commission holds an organizational meeting to elect a Chairman and Vice Chair.

The Muskegon County Road Commission, under State Statutes, employs a staff to carry out the duties and responsibilities of the Commission. The Commission is a corporate body that can purchase land and equipment, borrow funds, issue bonds, enter into contracts, etc. as necessary to carry out its obligations under and within the law.

In addition to its road responsibilities, the Road Commission was responsible for the County Airport and Parks. During the time period 1928 – 1942, the Road Commission was responsible for the operation of the County Airport. In 1942, the Muskegon County Board of Supervisors created its own Airport Committee and thereby relieved the Road Commission of this responsibility. Under Act 215, Public Acts of 1923, the Road Commission also served as the Board of County Park Trustees. The County Parks system was the responsibility of the Road Commission from 1925 through 1993 at which time the parks responsibility was turned over to the County of Muskegon.

Commissioners Serving on the Board of Muskegon County Road Commission

The first Commissioners were Mr. Peter Damm, (first Chairman), Mr. Fred D. Hoogstraat, and Mr. Alonzo B. Sumner.

The present (2020) Commissioners are Mr. Lewis Collins, Mr. Jack Kennedy, Mr. John DeWolf, Mr. Gerald Walter and Mrs. Sue Buckner.

The Commission record for length of service is that of Mr. Frank S. Millard with (31) years on the Commission, 1934 – 1964. A Mr. Bruce H. Jackson holds the record for the shortest term – one (1) year, 1901; in fact, an examination of the minutes for the year 1901 indicates that Mr. Jackson attended only one meeting. The following alphabetical listing represents the names of all commissioners from 1894 to the present and the years served:

<u>COMMISSIONER</u>	<u>Years Served</u>	
	<u>From</u>	<u>To</u>
Antisdale, William S.	1941	1946
Barber, W. J.	1923	1941
Bierema, Julle	1896	1904
Black, Melvin L.	2009	2019
Bolt, T. G.	1925	1933
Buckner, Sue E.	2020	(present)
Castenholtz, John	1919	1924
Collins, Lewis J.	2013	(present)
Conrad, Gary R.	1989	2010
Covell, Charles E.	1895	1898
Damm, Peter	1894	1895
Deremo, Earl	1950	1964
DeWolf, John J.	2009	(present)
Elliott, Charles W.	1909	1920
Elliott, Dale E.	1999	2002
Ellis, Charles	1903	1908
Hanson, Leroy J.	1965	1970
Hoogstraat, Fred D.	1894	1900
	1902	1912
Hoppman, Albert	1955	1966
Ivory, Herman	1991	1998
Jackson, Bruce H.	1901	
Jurick, Joseph	1985	1994
Jurkas, John J.	1978	1982
Kennedy, Jack E.	2008	(present)
Kobza, Michael E.	1971	1978
Leeke, Lyle	1983	1990
Millard, Frank S.	1934	1964
Murphy, Philip	1921	1922
Nelson, Hjalmar L.	1917	1920
Nelson, Nels L.	1933	1942
Olson, Ole	1899	1902
Peoples, Clark R. Sr.	1964	1970
Privacky, C. Bruce	1994	2000
Raap, F. Charles	1971	1989
Ryerson, Martin	1905	1910
Sabo, Terry J.	2011	2012
Santes, Joan M.	2001	2012
Seifert, Anton	1943	1954

St. Amour, Sam E.	2019 – 2020
Start, Clarence E.	2003 -- 2008
Steele, Frank N.	1913 -- 1918
Sumner, Alonzo P.	1894
Thomas, Elmer P.	1921 -- 1934
Vandermolen, Murton J.	1972 -- 1984
Walker, John S.	1911 -- 1916
Walter, Gerald J.	2013 – (present)
Winters, Roy S.	1967 -- 1972
Wissman, Carl	1947 -- 1950
Woods, M. Kevin	2008 – 2009

County Roads, Classification and Mileage

There was a reason for the establishment of County Road Commissions and ultimately the consolidation of a single county system for all unincorporated areas of the County. Prior to the establishment of the road commissions, all rural road improvements (and there were not many), were the responsibility of each individual township. The roads that were improved were often the result of maneuvering by the citizens of the township. The citizens that could muster the most votes at the annual township meetings were able to have funds raised, by taxation, and spent on a particular road of their interest. As a result, there was no inter-township road system and one could travel a fairly good road across a township and, at the township line, abruptly sink into the mud. Within a township, the roads could range from good to poor and public demand, therefore, began to grow to link various areas of the township and county into a unified system; thus the demand for a county-wide system of roads.

In 1894, the Muskegon County Road Commission was created to develop a county-wide system of roads interconnecting major settlements and to upgrade the overall road system. The early Road Commission activities responded to this need and work began to connect the City of Muskegon with Whitehall, Montague, Holton, Ravenna, Fruitport and linking with areas beyond the county, such as Fremont, Grand Rapids and Grand Haven.

Between 1894 and 1931, the public road function and responsibility for the unincorporated portions of the county were either in the county road system or one of the seventeen township

systems. During this time period, the county system expanded from zero miles of roads to some 250 miles of improved roads.

In 1931, the State Legislature passed the McNitt Act, which abolished all existing township road functions and placed these roads under the jurisdiction of the County Road Commission. The resulting consolidation took place in one-year steps over a five-year period (1932 – 1936). This consolidation expanded the county road system by approximately 814 miles for a total county system in 1936 of 1064 miles. Currently, 2010, the county system has 378 miles of primary roads and 724 miles of local road for a total county system of 1102 miles. Additionally, the Road Commission provides maintenance services by contract with the Michigan Department of Transportation for some 130 miles of state and interstate roads. Therefore, the effective county system mileage is approximately 1232 miles.

It should be noted that the McNitt Act represented a major expansion of the county system. Further, this expansion contained many miles of unimproved and poorly maintained roads that over the years have been upgraded, patched, improved and reconstructed by the Road Commission. Also, over the years, the traffic volume and needs have continually changed, thereby requiring different design and construction methods, as well as continual maintenance.

In Muskegon County, there are several levels of roads in existence that involve the Road Commission, i.e. Federal interstate routes, state trunk lines and the county road system. Road Commission involvement with the Federal and State systems consists of, and is limited to, maintenance of these roads. The Road Commission is more directly linked to, and responsible for, the county system of primary and local roads. Under Act 51 of 1951, the State Legislature established a dual system of road classification consisting of “county primary roads” and “county local roads”; the Road Commission is responsible for the construction and maintenance of these roads.

County primary roads are those roads which interconnect major economic activity areas or settlements of the county with one another, or connect these areas with the state or federal roads serving the county. The county primary system, therefore, is sort of a collection/distribution road

network. Primary roads are, therefore, greater in importance than local roads and all mileage in the primary road classification system must be approved and authorized by the Michigan Department of Transportation. The primary system attempts to establish a grid system or network of roads. In rural or low traffic areas, primary roads are generally about two miles apart; in the urban areas where traffic volume warrants, primary roads can be spaced closer than two miles.

Primary roads are generally two lanes, however, they can be multi-lane, and the road surface and shoulders are designed to carry greater traffic volumes, wider lane widths, higher speeds and greater weights, etc. By state statute, the Road Commission is responsible for all costs related to primary road construction and maintenance.

County local roads are roads whose main function is to provide property access. Local roads are roads that carry much less traffic at lower speeds, therefore, the actual physical construction of the roadway is less than that of the primary road. By state statute, the Road Commission is limited to a maximum of one-half of any construction or reconstruction cost of a local road. The other half must be paid for by others, such as township government, property owners, etc. currently the maintenance costs of local roads are borne by the Road Commission. However, townships in many Michigan counties pay with township funds for additional maintenance over and above the level of service provided by the Road Commission.

New roads, such as subdivision streets, that become a part of the public road system are built and paid for by a developer or company creating the subdivision. These roads must be constructed to Muskegon County Road Commission standards and specifications, and then dedicated to the public for road use. The Muskegon County Road Commission must formally adopt such roads into the public system.

The Muskegon County Road Commission is responsible for all public roads in Muskegon County located outside incorporated villages and cities. However, there are private rights-of-way and private roads within Muskegon County that are not the responsibility of the Road Commission.

FUNDING AND EXPENDITURES

Initially in 1894, the Road Commission received its only funding from local property taxation. Over the years, the property tax was replaced by use taxes such as motor vehicle taxes, license plate fees, weight taxes and the gasoline tax.

Currently, the major source of or Road Commission funds are received under Act 51 of 1951, Motor Vehicle Highway Funds. Under this act, all monies collected at the State level are distributed by a complex legislative formula. Act 51 also established guidelines regarding the expenditure of these funds.

The following chart depicts the disbursement of Act 51 funds to three major recipients:

1. Michigan Department of Transportation
2. The 83 County Road Commissions throughout the state
3. All cities and villages

The chart then follows the allocation of County Road Commission funds, by formula, from the general allocations for all road commissions through the state level allotments for primary and local roads and then into the distribution criteria for each county. Further, the chart depicts a generalized funding flow of the Muskegon County Road Commission into the county primary and county local systems. As the actual amounts vary from year to year, no dollar figures are shown, however, percentages have been shown in order to provide a general idea about how these funds are expended.

Michigan Transp. Fund (MTF) Act 51 Distribution Formula

\$1.9 billion (2002)



Taken off the top: 23.9%

Admin.:	6.0 %	Local Road Program	1.7%
Recreation:	0.9 %	Mass Transit	8.1%
Critical Bridge Fund:	0.4%	MDOT Bridges	2.5%
Railroad Crossing	0.2 %	MDOT Debt Service	2.2%
Econ. Dev. Fund	2.0%		



What's left: (\$1.5 billion)



MDOT

39.1% (44%)

8% of roads



Road Commissions

39.1%

75% of roads

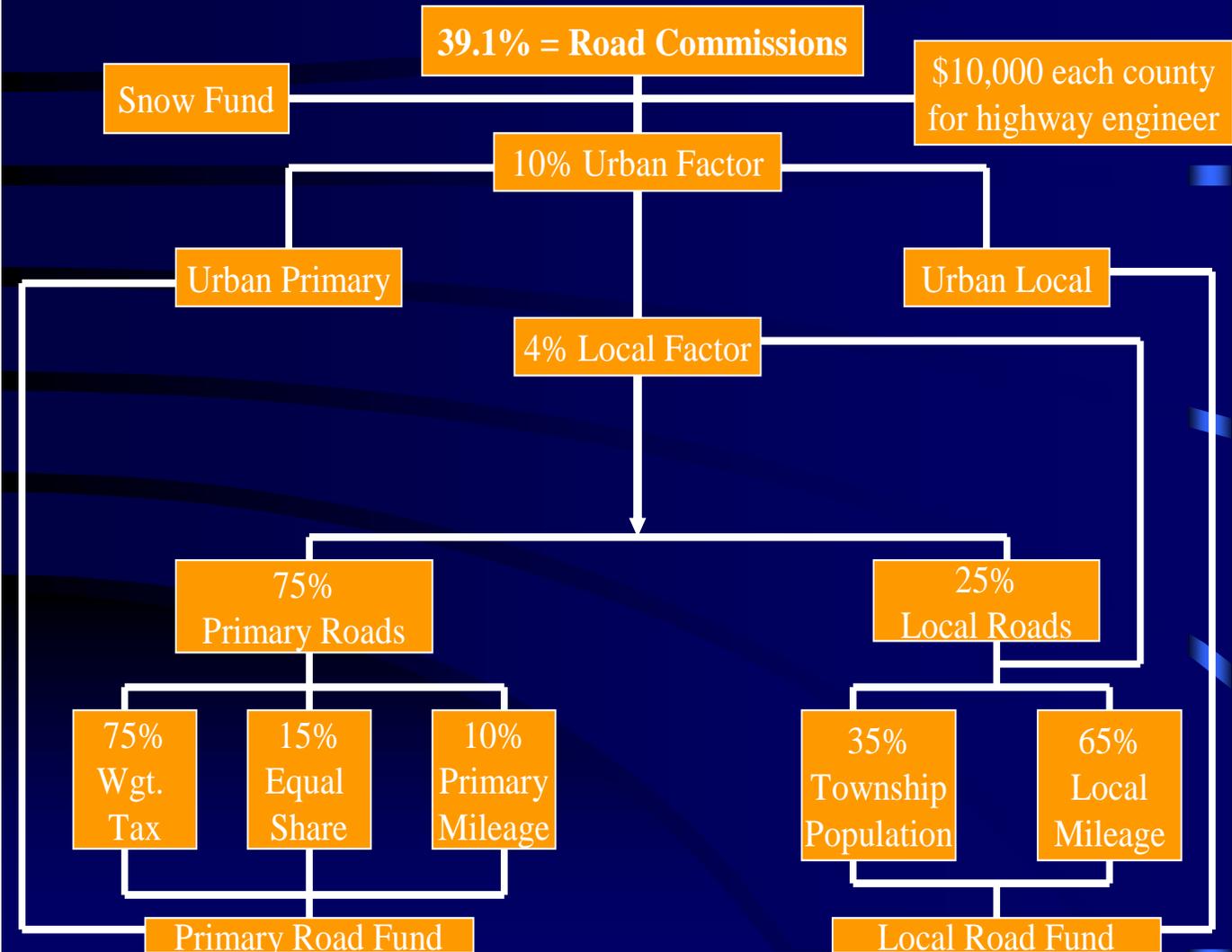


Cities & Vill.

21.8%

17% of roads

Road Commissions Internal Formula



Facilities

The Road Commission began with three commissioners, no staff and no office. The early meetings were held in the County Clerk's office located in the Court House. The housing problem was somewhat solved when a small office in the basement of the Court House was allocated for Road Commission use, however, the public meetings continued to be held in the County Clerk's office in order to accommodate people attending meetings.

By 1919, the Road Commission had simply outgrown its basement office in the Court House and provisions were made for a second floor office large enough to accommodate the public meetings of the Road Commission and its six-man staff. In these early years, the Road Commission had a small "garage-type" building located on the property of what was known as the County Poor Farm, currently the site of the County's Brookhaven Medical Care Facility. This facility served as the base for all maintenance operations through the 1920's.

Prior to the establishment of satellite out-county garages, the equipment, tools and trucks used on the roads in these outer areas were simply stored at each employee's place of residence and the employee worked out of his home. During this period, a "gas and tire" man was employed by the Road Commission to make the rounds in order to provide gas, oil and tire service to the trucks. Some repair work was also done in this fashion, however, major repairs were done by bringing the vehicle to the closest place that could provide the necessary repair services.

In 1921, the Road Commission established its first out-county garage unit in the Village of Ravenna. This garage unit, as well as other out-county garage units, was established simply on the basis of time/distance factors. It had proven impractical to provide the various road functions from the City of Muskegon. The Village of Ravenna garage was utilized until 1972.

The year 1928 brought the Road Commission its first administrative office and central garage facility. In this year, the Commission moved into the Keating Avenue facility. At the time, the Keating Avenue location was far removed from the developed portions of Muskegon or Muskegon Heights. Minutes of the Commission show that the Road Commission contracted with the City of Muskegon to

have fire protection services. This facility served as the main complex until 1976 when inadequate size and poor location prompted a move to another location.

The second out-county garage unit was established in Twin Lake in 1934. This garage unit was utilized until 1951 when the site could not be expanded due to surrounding development and it was impractical to expand the small structure. Therefore, the old Twin Lake garage was abandoned in favor of its present location on the Holton Road – M-120. The existing Twin Lake garage unit was built in 1947 and continues in use today.

The Road Commission established its first northern garage unit in 1937 in the Village of Whitehall. This unit was utilized until 1961 when it was sold to the City of Whitehall. As with previous garages, this location proved too small as operational requirements for vehicle storage and materials simply outgrew the small site. A new site was chosen at the intersection of Whitehall Road and White Lake Drive. The operations of the Whitehall unit shifted to this new location in 1961 and continue there today.

In 1966, the Ravenna garage unit moved from the Village of Ravenna to a location on Apple Avenue (M-46) in Moorland Township. This location was utilized until 1977, when this operation was consolidated into the new administrative and maintenance facilities located on Apple Avenue within the Muskegon County Wastewater System properties.

In 1976, the Road Commission authorized the construction of new administrative offices and maintenance facilities. This construction was the result of two main factors: 1) the Keating Avenue facility no longer provided adequate space for maintenance and storage of vehicles and the site could not be expanded due to surrounding development and, 2) the Keating Avenue location had become urbanized and incorporated into the City of Muskegon and the site was no longer close to roads that were the responsibility of the Commission.

Therefore, the Road Commission authorized construction of new modern facilities to serve as a major office and maintenance/storage complex. A site was selected within the boundaries of the Muskegon County Wastewater System. This site would provide a location that was central to the

entire county south of the Muskegon River and allowed the Commission to consolidate the Ravenna Garage and Muskegon Garage into one unit that would serve the south half of the entire county in a more efficient and economical manner.

In addition to the various office/garage facilities, the Road Commission has operated over the years its own gravel sites throughout the county. However, today these gravel sources have been mined out and no gravel operations are maintained by the Road Commission. In fact, most gravel utilized by the County today has to be imported from areas outside the County.

Equipment

Prior to 1900, the only winter road equipment was a device known as a snow roller. This device consisted of a roller, with rock ballast, pulled by a team of horses. The roller would smooth and pack the snow. The packing would make the snow last longer which is what they wanted. During these times, heavy loads could be moved with sleds without a concern for being stuck in the sand or mud. During Michigan's lumber era, they even watered roads in order to coat the roads with ice and thereby haul larger loads via sleds.

The increased use of automobiles brought a need to remove snow from the roadway via snowplowing. Early snow removal methods consisted of hand shoveling and horse-drawn plows. The early plows were rather crude wooden devices and the driver stood on the plow framework for added weight to keep the plow from riding on top of the snow.

Sand and salt came into use for highway snow and ice control after road surfaces were improved and automobiles and trucks were no longer stored for the winter months. In these early days, it simply was not practical to try to operate vehicles in the winter months. Horses and sleds proved a much better means of travel.

An advertisement in 1920 or 1921, of the Selden Truck Corporation contained some interesting figures of the firm's experiment promoting the use of trucks vs. use of horses. "The test of any machinery is in the amount of work that can be done with it. This is true of the motor truck. It costs

considerably less to purchase a team of horses with harness and wagon, and it costs a good bit less to operate that team each day than it does a motor truck.

But the test is not in the matter of first cost, or cost per day of operation, but in the amount of work accomplished by each outfit. Of course, this brings in finally the matter of cost – not of first cost, nor of the operating cost, but of the cost per unit of work accomplished.

Truck vs. Team

For instance, one company found business could not be taken care of by teams. It put on a two-ton truck, determined to keep exact records of all work and cost of both truck and teams. The first costs were of course hardly to be compared, for the truck investment was nearly \$3,000, while the best team, wagon, and harness cost less than \$800.

Again, the total daily cost seemed in favor of the horses for the cost of a truck, over a year's time and including all items, was double that of the team.

Story of Actual Results

But the truck made four trips, traveling eighty-six miles, with seven tons, in four hours less than it took the team to make one thirty-six mile trip with 1.35 tons over the same roads. This brought the operation to the proper basis for comparison – actual results. The truck was really doing 350 percent more work than the best team – in other words, doing the work of three and one half teams.

This really shows the economy of motor truck operation, as well as the greater accomplishment over horses, in spite of higher first cost or daily operating costs. The team hauled 1.35 tons eighteen miles at \$4.40 a ton, while the truck hauled seven tons twenty-one miles at \$1.01 per ton.”

About 1920, the Road Commission acquired some World War I surplus trucks. These trucks replaced the horse as the pulling device for the plows; one man drove the truck and one man operated the plow. The second man rode outside on the plow as it was pulled along. Metal plows replaced the wooden plows with the advantage of greater strength, weight and adjustable positions.

Shortly thereafter, the metal plows were mounted to the front of the truck. The added weight of the truck made the plow more effective, however, the early truck mounted plow had few adjustments. Often the plowing was done with two trucks; one truck pushing the plow with the other truck in front pulling via chains connected to the plow and truck. These trucks had no cab, just a motor mounted up front with a canvas cab-like frame under which the driver sat and drove and no windows.

The earliest trucks had no cabs or windows. However, front "windscreen type" windows soon came into being. The trucks belonging to the Road Commission did not have these windows. If an operator wished this type of wind protection, he had to purchase his own and have it mounted on the truck.

Truck advances consist of enclosed cabs with doors and windows, hand-operated windshield wipers, motor enclosure, fenders, larger motors and tires, however, no inside heaters. Snowplowing is still a two-man operation, a driver and a second man inside the cab to operate the plow via a system of levers, etc. During this period, plows grew in size and were more adjustable. The sanding and salting of roads is mostly a hand-operation, i.e. a man standing in the truck box shoveling sand out of the truck as it moves along the roadway.

In the mid-1930's, some tandem snowplowing was done with two trucks coupled together. A large V-plow would be mounted on the lead truck with a second truck pushing and the drivers would use hand signals for start, stop, faster, slower, etc. As the front end weight of the motors and plows grew, it was often necessary for the second man in the cab to help turn the steering wheel in order to negotiate corners.

In the 1940's and 50's, the trucks continue to get larger, more horsepower, increased weight, inside heaters, etc. Plows increase in size and capability. Snowplowing, however, is still a two-man, hand-operated pump as a power-assisted operation. Sanding becomes more mechanized. A sander is now attached to the back of the truck and pulled by the truck. The truck box, filled with sand, is elevated and the sand is shoveled out of a hole in the tailgate by a man standing on the

sander. The sand falls into a cone which directs the sand onto a simple spinning device similar to a home lawn spinning fertilizer spreader.

During these early days, it is interesting to note that trucks had no inside window defrosters. To combat the frosting or fogging on the inside of the windows, drivers would often drive with the windows open to equalize the temperatures and they would rub the inside windows with salt. This salt was frequently kept in small "bull durane" type bags that tobacco used to come in.

During the 1960's and 70's, a significantly more complex truck came into use.

Construction of Roads

The early road construction and maintenance equipment consisted of hand tools and horse-drawn equipment. Employees of the Commission were intimately familiar with shovels, picks and wheelbarrows. Teams pulled simple scrapers and scoops. The capabilities of this equipment put significant restrictions on what could be done in actual construction and maintenance practices.

Early tree removal, stumping and grubbing was done by hand, teams and explosives. Trees would be cut by hand and removed from the roadway by teams. Small stumps could be pulled by teams, however, anything of size had to be hand-dug and cut and pulled by teams. Explosives were used in limited situations.

The common hand shovel was in great use throughout any construction site, loading and unloading was done by hand. Small horse-drawn wagons would be loaded with sand and drawn to a fill site where a man walking behind the wagon would turn and move the boards comprising the bottom of the wagon and thereby let the sand, or other material, trickle out the bottom.

In the summer of 1919, the Road Commission made application for federal funding for what turned out to be a significant construction project of the time. The proposed construction project of the time. The proposed construction project called for the improvement of some twenty-two (22) miles of the Cedar Springs Road/Federal Aid Route 43 from the City of Muskegon to the Village of Casnovia. This route is now known as Apple Avenue/M-46.

The project was considered significant for the time for two reasons: one was the type and size of construction equipment utilized during the actual construction. Secondly, the project was considered to be very large in its scale, fourteen miles of the twenty-two mile project was issued under one contract and was considered exceptional in that there were no turns in the project.

The design called for two nine-foot concrete lanes placed on a twenty-eight foot grade. The successful contractor was a Pontiac, Michigan contractor named G.P. Scharl. The contract covered grading, construction of drainage structures, surfacing with concrete and final trimming up for travel. The contractor had special equipment made for his use and this was the first construction project that it was utilized. The equipment was the largest concrete construction equipment of its type in the country.

Originally, the contractor was going to attempt to complete the fourteen-mile contract in one construction season. However, project delays were experienced due to the inability to get shipments of sand and gravel and the inability of work crews to keep ahead of the concrete machine. As a result, only five miles of concrete were laid in the first season. The new construction equipment and technique were capable of laying an average of one mile of concrete per week.

A state/world record run was attempted and made. A record run of 1,023 feet of eighteen-foot width was laid in one ten-hour day.

Conventional roadway preparation was utilized. The innovative part involved the size of machinery and the use of narrow gauge railway. The technique consisted of stockpiling sand and gravel and loading same, via a small caterpillar crane, into an elevated funnel. The narrow gauge railway would run from the funnel along the road to the cement mixer, which was pulled along in front of the actual pouring site.

A small engine would pull some twenty "batch-box" cars under the funnel and receive the right mixture of sand and gravel. The "batch-box" cars were then pulled to a cement storage shed where the proper mixture of cement was added. The little cars, of about two yards of material, were then pulled on the tracks out to the cement mixer located at the pouring site. Another small caterpillar

crane, which also pulled the cement mixer along, would lift the cards and dump the proper mix into the mixer. After mixing, the cement would be poured via a boom and bucket into the forms. A concrete finishing machine would smooth and finish the concrete. The entire operation was revolutionary in that it only required eight men to operate this phase. Much hand labor was eliminated. The equipment could serve some two miles of roadwork then everything would have to be dismantled and moved. In actual operation, the operation took the entire output of three gravel pits and most of the available equipment to haul the gravel.