IOWA COUNTY ENGINEERING:

A RESOURCE GUIDE
FOR COUNTY ENGINEERS

IOWA DEPARTMENT OF TRANSPORTATION

Prepared For:

Iowa County Engineers
and
Iowa County Engineers Association (ICEA)
2015

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INTRODUCTION

The primary objective of this document is to provide information about Iowa County Engineering to new County Engineers who may not be familiar with the County Engineer's role in Iowa. It is designed to be a quick and brief reference guide on County Engineering functions in Iowa for all County Engineers as well.

This document includes such things as County Engineer responsibilities, road financing, engineering associations, manuals needed, a brief history of county engineering, and other pertinent information which may be useful to a county engineer.

I. THE COUNTY ROAD SYSTEM

Although Iowa is 26th in land area in the nation, it is 5th in the number of rural road miles. As of January 2015, the county road system includes over 90,000 miles of secondary roads. Approximately 6.5 percent are Portland cement concrete (PCC) paved, 13 percent Hot Mix Asphalt (HMA) paved, 1.5 percent bituminous treated, 74 percent gravel and 5 percent are untreated road surfaces. The county road system has over 20,000 structures classified as bridges (over 20' in length) and many other structures under 20' in length. The number of bridges per county range from approximately 65 to nearly 400. For detailed statistics of each counties road system mileage, refer to the Iowa miles of secondary roads website.

II. IOWA COUNTY ENGINEER'S RESPONSIBILITIES

The Iowa Code section 309.17 requires the county boards of supervisors to employ "one or more registered civil engineers who shall be known as county engineers". The board also fixes the term of employment which cannot exceed three years but it can terminate the tenure at any time.

The Iowa Code Section 309.21 specifies that all construction and maintenance activities be performed under the direct and immediate supervision of the county engineer. It also holds the engineer responsible for the efficient, economical and good faith performance of said work. In carrying out the responsibility, the engineer will need to be familiar with all the requirements of Iowa Code Section 309 plus many other Code sections (306, 310, 312, 314, 318, 331), pertaining to county engineering work. Refer to Instructional Memorandum (I.M). 1.120 for further references to Iowa Code.

III. COUNTY FUNDING AND OTHER REQUIREMENTS

In FY 2014, counties spent approximately $532 million of local secondary road money with about half being spent for road maintenance. In addition, counties spent nearly $137 million in farm-to-market funds. The local secondary road funds include the following general sources:

A. Local property taxes - Taxes assessed on property values and/or local option sales taxes. The County Auditor may be able to provide this information.

B. Road Use Tax Fund (RUTF) - 24.5% of various taxes on gasoline, diesel fuel, sales tax on vehicles, vehicle registrations etc. To view your county's recent RUTF receipts, refer to the Treasurer of State's Distribution of Road Use Tax web site.

C. Time-21 Funds – counties receive 20% of the Transportation Investment Moves Iowa's Economy in the 21st Century (Time-21) funding in the state, which comes from vehicle and trailer registration fees.

D. Transfer of Jurisdiction Fund – 1.575% of the Primary Road Fund, distributed to the Secondary Road Fund. It is meant to be a small amount of money to assist with all the roads transferred from the Iowa DOT to the counties over the years. This payment is part of the County's RUTF payment.

E. Miscellaneous receipts - Haul road and detour damages, local assessments, disaster aid, etc.

Local taxes and RUTF make up the majority of the secondary road fund. All of the above sources are deposited into the secondary road fund, which covers four general areas or "control items" for budgeting purposes. These items are administration and engineering, construction, roadway maintenance and general roadway.

Counties must operate within a Budget and Five Year Construction Program, per Iowa Code Sections 309.22, 309.23 and 309.96. Also, Iowa Code Section 309.22 requires counties to submit an Annual Report to the Iowa DOT.

In addition to monies from the secondary road fund, other funds are available for construction as described below and on the Local Systems funding web page:

A. Farm-to-market (FM) road fund - Funds (8%) set aside from the state RUTF, that are available for farm-to-market road improvements such as surfacing, bridges etc.

B. Bridge Programs - Federal and State funds are available for bridge replacement or rehabilitation. The counties portion of the Federal Highway Bridge Program (HBP) is allocated directly to each county. Counties compete for State bridge funds based on a point

system. I.M. 2.020 contains details for the allocation process and other information about these programs.

C. Other Federal-aid funds- Federal funds available for improvements on federal aid routes such as paving, resurfacing, bridges etc. These monies, except HBP Funds, are available through the programming process of the Regional Planning Affiliations. The most common type of funds used by counties are Surface Transportation Program (STP) funds. STP funds can only be used on county routes with a Federal Functional Classification (FFC) of "major collector" or higher. See the FFC maps for further information.

D. The Iowa DOT's Office of Traffic and Safety administers the Traffic Safety Improvement Program. This program is funded by one-half of 1 percent off the top from the Road Use Tax Fund, or approximately $4.5 million per year. The purpose of the program is to provide funding for traffic safety improvements. These improvements could include road construction projects, with acceptable benefit-to-cost ratios, to correct deficiencies at high crash locations. The funds may also be used for materials only to install new or upgrade obsolete traffic control devices or to conduct studies to determine how to correct a safety problem. The application deadline for the program is August 15 of each year.

E. Revitalize Iowa's Sound Economy (RISE) fund. The purpose of the RISE program is to promote economic development in Iowa through the establishment, construction, improvement, and maintenance of roads and streets. The RISE program is targeted toward value-adding activities to provide maximum economic impact to the state. The RISE program is administered by the Iowa DOT as a statewide program.

F. Other funds - There are various other smaller state and federal programs that are available from time to time. See the Iowa DOT Funding Guide for a complete list of transportation funding programs.

Structure Inventory and Inspection Management System (SIIMs)

The National Bridge Inspection Standard NBIS (23 CRF 650) requires all bridge size structures to be inspected. Iowa Code 314.18 clarifies that the bridge inspection responsibility belongs to the jurisdiction that the bridge resides. SIIMs is a web based program that is used for inspection scheduling, querying of inspection data and maintaining compliance of the NBIS. The inspection data and appropriate bridge files are all stored in SIIMs and can be queried to produce inspection list, asset summaries, upcoming inspections due and other reports that can be export to Excel, PDF, Google Earth, CSV file or displayed on a map in SIIMs. The SIIMs home page can be found at https://siims.iowadot.gov/Default.aspx . On this page there is a link to contacts, resource and information, bridge owner forms and instructions on how to get a user ID.

IV. THE BOARD OF SUPERVISORS

Iowa county boards of supervisors are either three-member or five-member boards per Iowa Code Section 331. These boards act as policy-making bodies, and employ the county engineer and set his/her salary. Board members are elected by the people and have the legal power to set policies for various county departments. The county engineer needs to keep the board well informed of the county's construction and maintenance projects, as well as other activities.

V. EXTERNAL ORGANIZATIONS

External organizations the engineer works cooperatively with are numerous, and the list grows each year. Some of the organizations are:

A. Iowa Department of Transportation (Iowa DOT)

(1) Iowa DOT Districts -- The Iowa DOT has established six Districts in key locations statewide to provide quality transportation services to Iowa citizens. This is the engineer's primary contact with the Iowa DOT. The District Local Systems Engineer and Transportation Planner are the primary contact persons.

(2) Office of Local Systems -- Located in Ames, this office is established to serve as liaison between the Iowa DOT and local public agencies (LPA). It administers state and federal programs for LPA's, (counties and cities) and works with the Iowa DOT Districts to assist LPA's with the planning, development and construction of projects. Any county engineer may contact this office at any time for help and information. Refer to the Office of Local Systems Organization Chart for more information.

B. Cities within the County

At the time of the 2010 census, there were 947 cities in Iowa, of which 70 have a population between 5,000 and 50,000 and ten (10) of which are over 50,000 in population. Nine (9) of the cities over 50,000 population are classified as urbanized areas; West Des Moines and Des Moines are in the same urbanized area. A list of cities and the urbanized areas is available from the Iowa DOT's Office of Systems Planning (phone 515-239-1664).

C. Regional Planning Affiliations (RPAs)

The state is divided into 18 RPAs (refer to this map for more information), which are responsible for the selection and programming of Surface Transportation Program (STP) projects and Transportation Alternatives Projects in their respective areas. The RPAs are responsible for preparing Transportation Improvement Programs (TIP) for proposed Federal-aid projects their areas and submit the TIP to the Iowa DOT for inclusion in the Statewide Transportation Improvement Program (STIP). The STIP is to be developed through the cooperation of all participating jurisdictions, which will include, but are not limited to, Iowa DOT, counties and cities.

D. Federal Highway Administration (FHWA)
This federal agency is a part of the U.S. Department of Transportation (U.S. DOT) and is the final authority for approving federal-aid funds for transportation improvement projects. Because the Iowa DOT is responsible for oversight of Federal-aid provided to the county, most contact with the FHWA will be through the Iowa DOT. Likewise, FHWA contact with the county usually occurs through the Iowa DOT. Only in rare instances would a county engineer work directly with the FHWA.

E. Iowa County Engineers Association Service Bureau (ICEASB)
The ICEASB provides information services, inter-county communications, and web based tools for Iowa's county road departments. A four person staff delivers functionality that serves the Secondary Roads community via the www.iceasb.org website: News, notification and announcements, email & fax communications, file download area, online automation of data reporting, tools for local projects, mapping apps, a reference library and a smart phone app. It also operates a separate system that facilitates the programming and development of local government projects. This application, known as the Transportation Program Management System (TPMS) links local governments, regional reviewers, and statewide agencies both to each other and to the projects for which they are responsible. TPMS is located at www.tpms.org. The Service Bureau shares office space with the Iowa State Association of Counties at 5500 Westown Parkway #190, West Des Moines, IA 50266. You can reach the ICEASB at 515-244-0779. The FAX number is 515-244-6397

F. Other Sources
The information sources mentioned here are not all-inclusive lists. There are other sources, some including: utility companies, Iowa Department of Natural Resources (DNR), Iowa Department of Agriculture, State Treasurer, Iowa State Association of Counties (ISAC), US Army Corps of Engineers (USACE), etc.

VI. ENGINEERING ASSOCIATIONS

There are two main associations available to county engineers. Both have the same purpose of helping the engineers to assist each other. Both further the goals of county engineering by being a source of information and combining efforts to pass necessary legislation. On the state level, it is the Iowa County Engineers Association (ICEA). On the national level, it is the National Association of County Engineers (NACE).

ICEA Executive Board has five officers, six district representatives and six alternates elected by their peers. They meet monthly, with the exception of August and October. In addition, there are several standing and special committees.

VII. MANUALS FOR COUNTY ENGINEER'S OFFICE

Refer to the Office of Local Systems website for a list of several documents and manuals that are helpful to have on file in a County Engineer's office. This list is not all inclusive.

"A Manual For County Supervisors of Iowa" (2015) contains Chapter 6 about "Secondary Roads and Bridges". Some of the information may be useful for County Engineers. This manual is published by the Iowa State Association of Counties (ISAC).

VIII. IOWA CODE CHAPTERS and Sections

Refer to I.M. 1.120 for Iowa Code Chapters and Sections that are periodically referred to by the Counties. The list of referenced Iowa Code Chapters and Sections, included in the I.M, is not all inclusive, but it includes most of the Iowa Code Sections that are relevant to County Engineering work.

IX. OTHER AREAS OF INTEREST FOR COUNTY ENGINEERS

In fulfilling his/her responsibilities, the engineer may need to become familiar with such areas as urban development, landfill requirements, land surveying, zoning, herbicide application, labor relations, civil defense, homeland security, functional classification of roads, equipment purchase and management, personnel, legal requirements, programming, budgeting and accounting procedures, etc.

X. JOINT COUNTY ORGANIZATION

There have been times when counties have experienced difficulties in hiring county engineers. Several reasons have been given for the shortage of engineers: low salary offers, retirements, lack of job opportunities for spouse, requirement to live in a small town, etc. For a variety of reasons, some Iowa counties have adjusted by sharing an engineer with an adjoining county as provided for by Iowa Code Section 309.19. It should be noted, however, that this solution may not save money, as assistants and other county staff may have to be compensated for their increased workload. Refer to the "Guide for Hiring a County Engineer" for more information.

XI. SUMMARY

Good engineering and management decisions are of paramount importance in county engineering work. There should be projects on the drawing board and on the shelf to be ready to take advantage of funding opportunities as they arise. Developing a meaningful five-year construction and maintenance program is a good business strategy for expenditure of county funds to get the most for the county's resources. The engineer must keep abreast of the changing times and technology. Building and maintaining bridges and roads must always be based on sound engineering practices.

The county engineer is a valuable asset to the citizens of the county. Similar to a chief executive officer (CEO) of a large corporation, he/she will handle a large budget, be involved in personnel matters from hiring to firing, union and non-union work force, and will be the first line of communication between the citizens and the county on secondary road matters. His/her decisions will impact the county's resources, its image, and quality of life of its citizens.

A compendium of information about and for county engineering is available on the ICEA Service Bureau website. It was compiled, with Iowa LTAP funding, by a committee of current & former county engineers, plus Iowa DOT representatives, and covers almost all topics that can arise in secondary roads. It can be found here:
http://www.iceasb.org/CountyEngineerInformationSystem/

XII. BIBLI0GRAPHY

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5. The World Almanac and Book of Facts 2000., Primemedia Reference Inc., 1999.

XIII. APPENDICES

HISTORY OF IOWA'S SECONDARY ROADS A1 - A10

APPENDIX A

HISTORY OF IOWA'S SECONDARY ROADS, as originally written by Stan Ring and updated by the Office of Local Systems in 2015.

Early Road Legislation

After the Sac and Fox Indians moved out of the area, later to be called Iowa, in about 1830, the settlers from the east began moving into the territory in increasing numbers. This immigration necessitated local government in some form.

This future state soon had laws establishing government first as Michigan Territory, then Wisconsin Territory, later as Iowa Territory and finally as the State of Iowa. Also, the first laws under Michigan Territory were largely copied from Ohio Law which in turn had been copied from the eastern states.

Thus the first laws governing the opening and laying out of roads and providing for their administration were in place under the Michigan Territory and were changed somewhat when Iowa became a part of the Wisconsin Territory.

One could say that the first "local" government relative to roads was probably created by the establishment of the counties of Dubuque and Demoine and townships of Julien and Flint Hill in 1834. Their "three commissioners of highways" were township officers and the importance of the townships in road building came into being. This decentralized road administration was thus established. In fact, it was responsible for laying out and opening most of Iowa's local roads. Under Michigan Territory law, all males between the ages of 21 and 50 were required to work on building the highways for two days at $2 per day.

It should be noted that very little work was done on roads in this sparsely settled area prior to 1836. The settlements were usually along rivers and streams and the pioneers were primarily concerned with building cabins and clearing fields. Most non-community roads followed old Indian trails.

However, in 1836, when the area became a part of the Wisconsin Territory, there were changes in the road laws. These changes de-emphasized the townships in favor of the counties to some degree.

After 1836 the county officials faced demands for laying out and opening roads into the interior, especially between towns. During the three years, 1836 to 1838, three territorial roads

were established. The 1838 Act, giving the counties more power, also created a tax on persons and property for building and maintaining highways and bridges.

When Iowa became a territory in July 1838, it inherited a system of road and bridge administration from the Wisconsin Territory status that recognized the county as the important administrator of roads and bridges. As towns grew in size and development moved westward, people demanded more roads. By 1846, there had been 148 "special" road acts calling for roads between communities. In fact, an 1839 Act created a turnpike corporation for constructing a toll road from Burlington to the town of Black Hawk in Louisa County.

During the Iowa Territory period, U.S. Congress appropriated money for military roads. An 1839 Act funded the opening and construction of such a road from Dubuque to the northern border of Missouri (to serve as route south to St. Louis, Mo). The road was surveyed and laid out by government engineers, probably the first engineers on the road scene in Iowa.

Commencing in 1840, legislation began to again emphasize the township as people wanted "local" control of their roads. This township emphasis continued even after 1846 when Iowa achieved statehood.

The 1851 Code of Iowa was considered the most important of this early period because it completely rewrote the previously inherited laws. It, in fact, established a basis for reforms in road building. The system of roads and bridges was jointly administered by a county road supervisor and a county judge, both of whom were elected. The county road supervisor was responsible to the county judge. The township's powers were all but eliminated.

This system, however, remained in force less than two years when the county road supervisor's job was abolished and the work transferred to district road supervisors, giving much power back to the township trustees. The general supervision of laying out and opening roads, became a township function and continued in use until the early 1900s.

By 1900, over 100,000 miles of dirt roads had been opened and graded by township trustees with little concern for inter-township or county wide movements.

General dissatisfaction over the then existing road building conditions led to a change in 1902 when several road districts, within a township, were eliminated and the township became a single district. Trustees were permitted to either contract their road work or to employ a superintendent to oversee and direct the township day labor work.

Registration Fee Adopted

On April 12, 1904 the 30th General Assembly of Iowa required a $1.00 registration fee per vehicle and regulated their use on the highways. "Permanent and Surfaced Roads" were first mentioned in the 1907-1908 legislative biennial report.

First Highway Commission Established

In 1904, the first Highway Commission was established, using the staff and facilities of the then Iowa State College in Ames. The duties of this first commission were only advisory and educational. The original Highway Commission had three members. Dean Curtis and Dean Marston were the commissioners and T.H. MacDonald was the engineer. They worked with a biennial budget of $7,000.

Road Districts and Road Tax

In 1909 the Iowa Legislature first gave township supervisors the right to establish road districts, to levy one-half the cost of the proposed construction against the adjoining property, to levy a two-mill tax on all assessable property in the county, and to use part of the liquor tax (such a tax was collected in some counties) for road improvement work. Also in 1909, and for some years later, much of the road tax was paid in terms of labor by the taxpayer. About two-thirds of the amount which was payable in labor was to be worked out before July 1 of each year. For travel on frequently dragged roads, the motorist was instructed to drive only on the north half of an east and west road and on the west half of a north and south road, until the road had dried following a rain. Fines were collected for non-compliance.

Motor-Vehicle License Fee

In 1911 motor vehicle license fees were set at $8 per car of twenty (20) horsepower, plus 40 cents per horsepower for greater power, based upon the number of engine cylinders, stroke and diameter of pistons. Electric cars were taxed $15 and motorcycles at $5 each. Maximum speed was set at 25 miles per hour and minimum driver age at 15 years.

New Highway Commission

In 1913, pursuant to an act of the 35th General Assembly, Iowa State College in Ames ceased to function as the Highway Commission and a new Commission was formed, which was also located in Ames. The 1913 act provided an improvement plan for works in the state. There were to be two general systems: the county roads under the boards of supervisors, and the township roads under the trustees. Each had the authority to levy taxes for improving their rural systems. The Highway Commission was charged with the duty to prepare standard plans for road and bridge building and to direct and supervise all permanent construction on both systems. In effect, the supervisors and the trustees were in charge of their respective funds and roads, but were required to work largely under the direction and supervision of the Highway Commission. The 1913 Act also placed the actual road work in various counties under the personal direction of the county engineer. Although hired by the board of supervisors, the Highway Commission could require the county engineer be discharged if incompetency were proven, which it did in about one-fourth of the counties in the first three years of the operation of this new law.

Office of the County Engineer

Generally both the supervisors and the trustees resented the intrusion of the Highway Commission and the county engineers upon their domain. So much opposition developed that attempts were made in the two succeeding sessions of the State Legislature to repeal the 1913 Act. Thus, three sessions were required to not abolish the office of county engineer.

Inter-County Roads System

The first big job of the newly created Highway Commission in 1913 was to select and designate those roads known as the intercounty system. This system was to include not less than 10 percent and not more than 15 percent of the rural roads in the state.

The boards of supervisors and the county engineers were required to tentatively select those miles to be so designated within their respective counties. It then became the responsibility of the Highway Commission to make the final designation of those roads within the county and to make certain that the entire system was coordinated- across county lines to form a complete state-wide system.

Official maps showing these roads -were prepared for each county and filed both with the Highway Commission and with the respective county recorders. The Commission was required to prepare standard road and bridge plans, including any special plans or designs as necessary.

The county engineer was charged with the responsibility of making a complete survey of all the roads on the inter-county system, locate all cornerstones on those roads, establish right-of-way lines, establish bench marks and to keep a complete record in the official County Road Book.

1916 Federal-aid Act

The years from 1913 to 1919 were a period of bridge building and road surface grading.
Also during this period, the 1916 Federal Aid Act was passed making $75,000,000 available to the states over a five year period for road building. Iowa's share was approximately $146,000 per year. This necessitated several changes in the operation of the Highway Commission. Cerro Gordo County held the first federal-aid letting in Iowa in 1917.

1917 Highway Act

The 1917 Iowa General Assembly provided for the establishment of a Federal County Cooperation Road Fund and selected a road system of some 6,200 miles of major roads within the county road system. However, with the entry of the United States into World War I at this time, practically all road construction ceased for the duration.

Comprehensive Plan

The 38th General Assembly of Iowa meeting in 1919 gave Iowa a great boost in road improvement. It passed a law which established a primary road system of 6,400 miles, a primary road fund to finance construction and maintenance, and a comprehensive plan by which the entire system could be improved. The new primary road system provided a link with practically every town of 1,000 population or over.

The primary road fund established in 1919 consisted of:
1. All remaining balances in the fund created by the 1917 Highway Act.
2. All additional and future federal aid road funds allotted to Iowa.
3. All net proceeds from motor vehicle registration except those monies necessary to maintain the federal aid engineering fund, maintain the support fund for the Highway Commission, and to cover administration of the motor vehicle department.

The fund was to be allotted to the counties on the basis of area and was to be used for road work only. Bridges and right-of-way were to be paid for by the counties.

Bond Financing of Roads

From 1919 to 1927 the state and the counties went through a period of issuing bonds in order to hard surface a limited mileage of state roads. Property assessment was permitted for a distance of 1 1/2 miles out each side of the road being improved. At first, 25 percent of the cost was raised by assessment and this was later reduced to 12 1/2 percent. This method of financing was highly unpopular with the adjacent land owners.

Gasoline Tax

By road acts in 1923 and 1925, a two-cent per gallon tax on gasoline provided road construction funds which were equally divided as: one-third for primary roads, one-third for county roads and one-third for township roads.

1927 Primary Road Act

The Primary Road Act of 1927 re-wrote all primary road laws and made sweeping changes in practically all areas as follows:

1. The county boards of supervisors were relieved of all duties with respect to construction and maintenance of primary roads and the duties transferred to the State Highway Commission.
2. All special assessments on abutting and adjacent property were repealed.
3. Special assessments previously levied but not paid were canceled, while assessments previously paid were refunded.
4. Counties were reimbursed for those primary road and bridge projects which they paid for.

5. Allotments of primary road funds among the counties on the basis of area was repealed and left strictly to the discretion of the State Highway Commission.
6. The number of the State Highway Commission members was increased from three to five, all appointed by the governor.

1929 Act

The Bergman Secondary Road Act of 1929 was a far-reaching Act, repealing most of the previous secondary road laws. The new law modernized the secondary road laws. The three most important changes were:

1. The law placed all secondary roads under the jurisdiction of the boards of supervisors, thus eliminating 1640 township boards of trustees of their jurisdiction and control of township roads. The township roads were renamed "local county roads".
2. All secondary road tax levies were grouped into two funds: the secondary road construction fund and the secondary road maintenance fund, both under the control of the county board of supervisors.
3. The law required the submission for approval of the State Highway Commission, a comprehensive county construction program for each year or years but not to exceed three years.

The following nine years (1929-38) were depression years for the state and the country, so very little secondary road construction was accomplished in the state. Under the circumstances, the primary focus was on maintaining the roads in as good a condition as possible.

Farm-to-Market Bill

In 1939, the Iowa General Assembly passed House File 114, later to be known as the "Farm-to-Market bill". The need for this bill stemmed from the fact that the U.S. Congress had recently passed a new Federal-aid Road Act under which the State of Iowa would be allotted about $660,000 per year of federal-aid funds for use on secondary roads. These federal-aid secondary road funds could be expended only on projects located upon a specific system of main-traveled secondary roads and only under the direct supervision and control of the State Highway Commission. These federal funds were required to be matched by at least an equal amount of state funds under the control of the State Highway Commission.

House File 114 also provided for the establishment of the "Farm-to-Market Fund". It was composed of all federal-aid secondary road funds received by the state, matching money transferred from the primary road fund and any other funds as might, by law, be credited to such fund. A schedule of transfers from the Primary Road Fund to the Farm-to-Market fund was set out to cover the years of 1939 and 1940. Thereafter, the schedule directed that all funds in excess of $16,000,000 allocated to the Primary Road Fund be transferred to the Farm-to-Market Road Fund. Later, in 1942, it was directed that all funds in excess of $17,000,000 be transferred to the Farm-to-Market Fund.

1939-49 Time Period

During the 11-year period, 1939-1949, while the ceiling on the primary road fund for the primary road system use was $16,000,000 and then $17,000,000, a total of $43,398,853 was transferred from the Primary Road Fund to the Farm-to-Market Road Fund. Such a transfer of funds was evidence of the general belief that improvement of primary roads was largely completed.

World War II Effect

Construction on the farm-to-market road system had just begun to gain momentum when World War II broke out. Labor, machines and materials were diverted to the war effort. For all practical purposes, road construction ceased for several years.

1944 Federal-aid Act

U. S. Congress, anticipating the end of the war in 1944, approved the Postwar Highway Act authorizing the expenditure of $500,000,000 per year for three years following World War II. Permission was granted to expand the federal-aid secondary road system to take advantage of the increased funds available for highway purposes. The expanded system, as chosen by the State Highway Commission in cooperation with the boards of supervisors, was composed of 33,031 miles of the main and more heavily traveled county roads creating a network or grid with a spacing averaging 2 to 3 miles.

Since the Federal-aid Secondary (FAS) road system had been expanded, it now became necessary to also expand the Farm-to-Market system to provide matching money from the Farm-to-Market Fund. The county boards of supervisors, assisted by their county engineers, selected the expanded Farm-to-Market road system. Boards were encouraged to make their system coincide with that of the FAS system previously selected. The effort was not successful and some tag end mileage resulted. The odd mileage continued to plague those having to work with them for years.

1949 Funding Act

Upon the recommendations of a road study committee, the Iowa legislature in 1949 established the following rates of distribution of road use taxes:
42% - Primary Road System
35% - Secondary Road System
15% - Farm-to-Market System
8% - Cities and towns

The previous method of funding the Farm-to-Market Fund from the Primary Road Fund was eliminated. The 15 percent distributed to farm-to-market roads during the period 1949 to 1961

was allotted on the basis of 60 percent county area and 40 percent equalization. Equalization funds were distributed on the basis of each county's needs bore to the needs of the state as a whole.

Farm-to-Market Roads Standards

The American Association of State Highway Officials (A.A.S.H.O.) standards of 1945 were in effect from 1945 to 1954 for farm-to-market roads. These standards were considered inadequate by most counties and in most cases, counties voluntarily constructed to a higher standard. At the request of the Bureau of Public Roads, the standards were revised upward in 1954 by the Secondary Road Plan.

Secondary Roads Department

Because the volume of work on secondary roads increased greatly, a new secondary roads department was created within the State Highway Commission on April 7, 1953. Thus, the services of all the departments of the State Highway Commission were made available to the counties. Since 1954, many Iowa counties have embarked upon extensive higher-type surfacing programs, usually reflecting availability of aggregate materials in any given locality.

In the fall of 1954, the State Highway Commission adopted the 1954 Secondary Road Plan, an agreement with the Bureau of Public Roads agreeing to certain standard procedures, standards and general operational rules for construction on both farm-to-market and federal-aid secondary roads. District secondary road engineers were appointed in each of the six Highway Commission districts.

Secondary Road Budget

In 1957, the trunk system of Iowa highways was abandoned and the secondary road budget law went into effect requiring each county, on or before December 1 of each year, to submit to the Highway Commission for approval, a proposed secondary road budget.

New Road Use Tax Distribution

In 1959, the Iowa Legislature appointed a legislative study committee to recommend to the 1961 legislature any changes in highway management, financing, safety, construction and maintenance of all highways of the state. On the committee's recommendation, the Iowa legislature, in 1961, redistributed the road use tax funds as follows:

47% - Primary Road System
30% - Secondary Road System
10% - Farm-to-Market System
13% - Cities and Towns

Other Changes

Over the next 30 years smaller changes took place. In 1965, the Bureau of Public Roads became the Federal Highway Administration (FHWA) of the U.S. Department of Transportation (U.S. DOT). The Iowa Highway Commission became the Iowa Department of Transportation (Iowa DOT) in 1974. The Highway Commission's Secondary Road Department became the Office of Intergovernmental Coordination and is now known as the Office of Local Systems. The federal gas tax was increased to help reconstruct deficient bridges and continues through today.

In 1969, the percentage split was as follows:
47% - Primary Road Fund
29% - Secondary Road Fund
9% - Farm-to-Market Road Fund
15% - Municipal Road Fund

In 1978, the percentage split became:
45% - Primary Road Fund
28% - Secondary Road Fund
9% - Farm-to-Market Road Fund
18% - Municipal Road Fund

In 1989, Iowa Code Section 312.2 mandated the state's RUTF was distributed as follows:

47.5% - Primary Road Fund
24.5% - Secondary Road Fund
8.0% - Farm-to-Market Road Fund
20.0% - Municipal Road Fund
For Counties, it was distributed on a 70 percent needs and 30 percent area basis. The gas tax was also raised at this time, by two (2) cents per gallon.

Intermodal Surface Transportation Efficiency Act (ISTEA)

Federal funds in the 1980s were distributed to the counties on the basis of area and needs through the Farm-to-Market Fund. This distribution system was drastically changed when the Congress of the United States passed the Intermodal Surface Transportation Efficiency Act of, 1991 (ISTEA).

Eighteen (18) regional planning affiliations (RPAs) were formed in Iowa which are responsible for the selection and programming of the Surface Transportation Program (STP) projects and Transportation Enhancement projects in their respective areas. The RPAs are responsible for preparing a Transportation Improvement Program (TIP) for their area and for submitting the TIP to the Iowa DOT for inclusion in the Statewide Transportation Improvement Program (STIP).

The STIP is to be developed through the cooperation of all participating jurisdictions: state, cities and counties. The ISTEA expired September 30, 1997.

Transportation Equity Act for the 21st Century (TEA-21)

TEA-21, passed by the Congress in 1998, built on the initiative established in the ISTEA of 1991. The new Act combined, continued and incorporated many program changes and improvements which provided additional flexibility and authority over the state's transportation systems. The Act also increased funding level for highways, transit, rail, highway safety, motor carrier safety and research and technology. The TEA-21 expired September 30, 2003, but had several continuing resolutions.

Iowa Variable Gas Tax Rate

In 2002, a variable gas tax was established for gasohol and ethanol in Iowa, which is based on the total amount of gallons of ethanol and gas sold. Iowa Code Section 452A.3 explains in more detail how this is calculated.

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU was enacted by Congress in 2005. At the time it was passed, it was the largest surface transportation investment in the Nation's history. It continued most of the programs enacted under TEA-21 and added many more. It also had a large amount of "earmarked" projects, which provided Federal funding for specific projects.

Transportation Investment Moves the Economy in the 21st Century (TIME-21)

In 2005, the Iowa Legislature enacted TIME-21. TIME-21 was funded by an increase to the registration fees on vehicles, as well as trailer fees and vehicle title fees, which is explained in Iowa Code Section 312A. TIME-21 funding is split as follows:

60% - Primary Road Fund
20% - Secondary Road Fund
20% - Municipal Road Fund

Moving Ahead for Progress in the 21st Century (MAP-21)

MAP-21 was enacted by Congress in 2012. MAP-21 significantly restructured and reduced the number of core programs previously authorized by SAFETEA-LU. It eliminated the Highway Bridge Replacement and Rehabilitation (HBRR) program; however, a comparable amount of Federal funds continue to be provided for county and city bridges through a set-aside from STP funds. MAP-21 also introduced for the first time national performance measures. These performance measures currently apply only to routes on the National Highway System.

Current State Law as of 2015

Current Law (Iowa Code Section 312.2) mandates the state's RUTF is distributed as follows:
47.5% - Primary Road Fund
24.5% - Secondary Road Fund
8.0% - Farm-to-Market Road Fund
20.0% - Municipal Road Fund

For Counties, it is distributed on a formula basis, developed by the Secondary Road Fund Distribution Committee (SRFDC). The SRFDC was established in 2006, and the formula created by the SRFDC was phased in over a five (5) year period. The formula established by SRFDC became 100% implemented, beginning in FY 2011. For cities, the RUTF is distributed on a population basis.

In 2015, the Iowa Legislature passed a measure to raise the fuel tax by 10 cents per gallon, for various types of fuel. Regular gasoline went from 21 cents, to 31 cents, per gallon.

The below chart shows the history of gas tax in Iowa:

Effective Date of Change	Gasoline Tax Rate Cents/Gallon	Ethanol Tax Rate Cents/Gallon	Diesel Tax Rate Cents/Gallon
1925	2	NA	2
1943	3	NA	3
1945	4	NA	4
1953	5	NA	5
1955	6	NA	6
1957	7	NA	7
1965	7	NA	8
1978	8.5	NA	10
1981	13	NA	13.5
1982	13	NA	15.5
1985	15	NA	16.5
1986	16	NA	17
1987	16	NA	18.5
1988	18	NA	20.5
1989	20	19	22.5
2002	20.1	19	22.5
2003	20.3	19	22.5
2004	20.5	19	22.5
2005	20.7	19	22.5
2006	20.7	19	22.5
2006	21	19	22.5
2007	20.7	19	22.5
2008-2014	21	19	22.5
2015	31	29	32.5