

Allen County Highway Engineering Department — Problems and Progress

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INTRODUCTION

The present and future traffic demands and their related problems in an auto-oriented, ever-growing populace in such an industrious and progressive county such as Allen, have justified the Allen County commissioners to expand their engineering department in an attempt to solve the various highway problems at the lowest cost to the taxpayers.

The following organization chart (Figure 1) was adopted on August 28, 1968 by the Allen County commissioners.

BRIDGES

The Cumulative Bridge Fund in Allen County is based on 12 cents of each \$100 of the total net assessed valuation. The total revenue received from this source increases or decreases each year according to the total net assessed valuation of the entire county.

From the Cumulative Bridge Fund, requests of appropriations are presented to the Allen County Council by the Board of Commissioners for individual bridge construction or repair. An appropriation is requested for each individual project which then becomes a "Special Bridge" referred to by township, section number or name of waterway or drain. In 1967, a number was assigned to each project, such as AC-1-67, etc. At the beginning of a new year, each new project was given a new number, such as AC-1-68.

A field inspection of bridges proved that repair and construction of larger bridges was necessary. Since a consulting engineer's fees for an individual bridge project was paid from the Special Bridge Fund, it was concluded that our own bridge department should be organized to save the taxpayers money as far as engineering and field inspection costs. The bridge department would serve the same purpose as the consulting

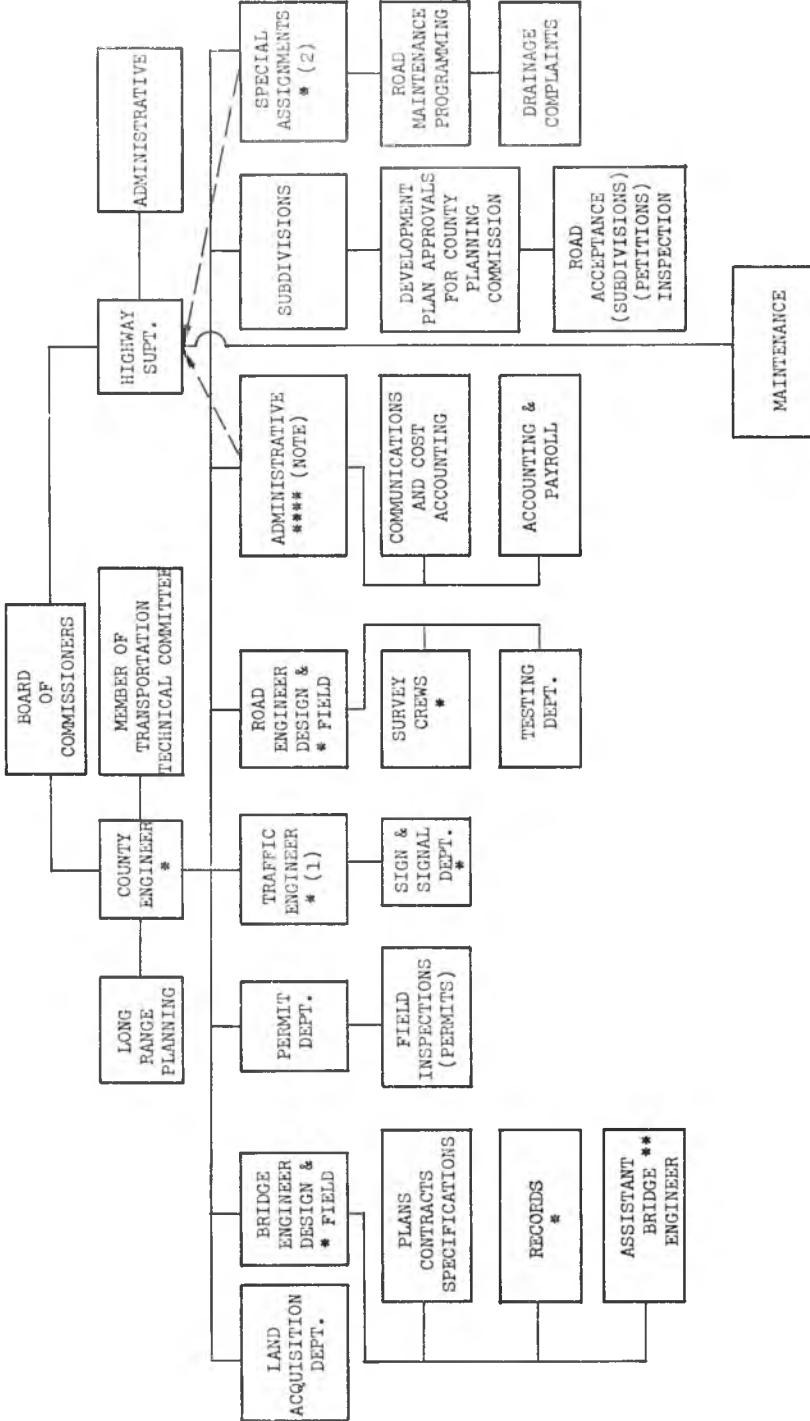


Fig. 1. Allen County Highway Engineering Department
 * one person, ** two persons, **** four persons
 *(1) the traffic engineer and the permit engineer are combined under one person
 *(2) the Special Assignments and Subdivision Departments are combined under one person
 Note: The personnel in the Administrative Department also work under the direction of the highway superintendent
 Personnel: Engineering Department—11, Administrative—4 Total—15

engineer in preparing plans and specifications for contracting and field inspections.

Upon submitting a group of sample forms to be used in conjunction with the present highway cost accounting system, the following was approved by the state examiner of the Indiana State Board of Accounts on September 18, 1967.

The cost of salaried and hourly rated employees and the cost of equipment and vehicle usage which is normally connected to the special bridge will be paid from the Highway Fund. At the conclusion of a project the data accumulated from the foregoing named costs will be itemized to a claim form (County Form Number 17) and submitted for consideration for payment from the "Special Bridge" to the Highway Fund. (This method of bookkeeping used in conjunction with the Indiana State Highway Commission cost accounting numbers provides an excellent method to provide reimbursement for federal-aid projects).

At the end of the budget year, December 31, any "Special Bridge Projects" for which billing and reimbursement have not been made automatically carry over on the records of the "Special Bridge Project."

The approval of this method is given subject to withdrawal upon a complete review of the two funds concerned.

Cost accounting of salaries, hourly rated personnel, social security, retirement and equipment charges plus other numerous materials and supplies would become quite complicated for each "Special Bridge Project." Equipment charges are reimbursed to the Highway Fund for each individual piece of equipment based on the cost of operation charge derived from the Highway Cost Accounting Record. Mileage for county vehicles is reimbursed at the rate of eight cents per mile.

Following is a summary of work completed in 1968 from the Special Bridge Fund:

	<i>Projects</i>	<i>Total Cost</i>	<i>Engineering</i>
County Forces	10	\$ 79,674	\$ 1,040
Contracted	18	419,431	20,719

Note—from the \$20,719 engineering costs, \$11,610 was county engineering forces and \$9,109 was paid to consultants.

The county forces were used in replacing bridges with multiplate pipe arches—explaining the minor county engineering cost which consists of salaries and mileage only.

Under contracting projects the county engineering forces include salaries and mileage only, not reflecting any county overhead costs. However, adding to county engineering costs and consultants fees,

\$419,431 divided by \$20,719 still only equals 5% which is considerably less than the 10% fee that had been previously paid to the local consultants for the same job.

In addition to the previous mentioned 28 projects, the county engineering forces did the construction engineering on a FAS bridge project which was contracted for \$324,801 at a construction engineering cost of \$17,912 which is 5.5%. This figure is consistent with most FAS projects of this size. Allen County will be reimbursed one-half of this engineering cost because of the use of the Allen County engineering forces in construction engineering of this project.

In summarizing we feel that completing 29 projects at a total cost of \$162,440

419,431

79,674

\$661,545 from the Cumulative Bridge Fund was a progressive year.

The inventory of Indiana county bridges taken in March 1961 and presented by J. E. Hittle at the county commissioners' session of the 54th Annual Purdue Road School on April 3, 1968 has been reviewed and the inventory updated to December 31, 1969. The following has been accomplished during the approximate eight-year period.

	<i>Number of Bridges</i>			<i>Total</i>
	<i>One Lane Less Than 18'</i>	<i>Narrow 18'-22'</i>	<i>Adequate More Than 22'</i>	
March 1961				
Inventory	201	29	57	287
Dec. 31, 1969				
Inventory	146	24	95	265

In summarizing we submit the following:

- A. In the category of one-lane bridges, less than 18 feet, there has been a reduction of 56 bridges.
- B. In the category of narrow bridges, 18 feet to 22 feet in width, there has been a reduction of 5 bridges.
- C. In the category of adequate bridges, more than 22 feet in width, there has been an increase of 38 bridges.

From this data Allen County has been progressive during this eight-year period.

PERMITS

One of the major steps in preventative maintenance was the establishment of the Permit Department in conjunction with the Allen County Highway Engineering Department in January of 1967. Due to the rapid expansion to the northeast of Fort Wayne and utilities going underground all over the county, the Allen County commissioners adopted an "Application For Permit To Cut An Allen County Road." The major items concerning the permit were as follows:

Charge

- A. A charge which is based on the cost or labor and materials to restore the county property cut into or damaged by the applicant to its condition immediately prior to the applicant's damage or cut.

Maintenance Bond

- B. A maintenance bond to cover the cost of labor and materials to restore the county property cut into or damaged by the applicant to its condition immediately prior to the applicant's damage or cut and which is to remain in effect for a period of one year from the completion of said work. (No bond is required for a permit if the cost of restoration is less than \$300).

Responsibility

- C. (1) If the inside face of trench is within three feet of the edge of the road surface, the backfill of the trench of the opening will be bank run gravel or crushed stone, which will be thoroughly compacted by tamping in layers not to exceed four inches in depth to within 12 inches of the present surface and to dispose of all surplus material and also to replace the remaining 12 inches within the trench opening as per existing conditions prior to making trench, except that portion of the trench which is in the travelled road, the remaining 12 inches will be backfilled with coarse gravel or crushed stone, maintained in a smooth and uniform condition for a period of not less than four weeks after traffic is again permitted to pass over the filled trench, until such time the surface shall be replaced to existing conditions unless otherwise provided by special provisions.

- (2) To furnish a drawing showing size, type, controlling dimensions, etc., of the proposed improvement relative to existing pavements, existing structures, existing right-of-way, and existing utilities;
- (3) To erect and maintain all necessary barricades, detour signs and warning lights required to safely direct traffic over or around the part of the road where the above-described work is to be done so long as the work in any way interferes with traffic;
- (4) To move or remove any structures installed under this permit, should future traffic conditions or road improvements necessitate and when requested to do so by the Allen County permit engineer;
- (5) To assume all responsibility for any injury or damage to persons or property resulting directly or indirectly from the work contemplated in this application;
- (6) To notify the Allen County Permit Department in writing five days in advance of the time of beginning the work done under this permit; and to mail a copy of this notice to its local highway superintendent; also, to notify the local highway superintendent either by telephone or telegraph the day preceding the beginning of the work;
- (7) To restore the county property cut into or damaged, including said road and lateral cuts by applicant to its condition immediately prior to the applicant's damage or cut to the satisfaction of the Allen County commissioners, Allen County highway superintendent and the Allen County permit engineer.

Special Provisions

- D. We are presently using this form and after two years of experience we believe the form is serving the purpose for which it was intended.

During the earlier part of 1967 as we travelled the county roads, especially in the urban area, we noted the following major problems:

- (1) Commercial property with improper entrance on narrow right-of-ways.
- (2) Drainage problems of all types being created by improper entrances caused by undersized pipe that was laid at an impossible grade.

These problems resulted in the Allen County commissioners adopting an "Application For A Permit To Construct A Driveway Entrance And Approach." This type of permit is very similar to that of the Indiana State Highway Commission.

The permit helped solve the problems concerning the drainage, but in effect made the commissioners aware of how inadequate the present right-of-way widths are for commercial development and how incomplete the county records were concerning recorded right-of-way widths on county roads.

At the present time the Allen County Planning Commission requires an 80-foot right-of-way on all section and half-section lines for platted subdivisions but has no right-of-way requirements concerning commercial zoned projects.

We have found by the use of the "Application For A Permit To Construct A Driveway Entrance And Approach" that an individual making application concerning a commercial project will cooperate in giving proper right-of-way, construct taper lanes and provide proper drainage when shown the correct needs for the benefit of traffic, the general public and his own project. Therefore, we feel the permit is well worth while and is serving its intended purpose.

During 1968 the City of Fort Wayne, through an agreement with the Board of Public Works and the Allen County commissioners paid the Allen County Highway Department the sum of \$2400 for the part time services of the Allen County permit engineer to help organize a City of Fort Wayne Permit Department comparable to that of the Allen County Highway Permit Department.

The most recent development is the adoption of an "Access Standards Manual" by the City of Fort Wayne and the Allen County commissioners; but is now being reviewed but not officially adopted by the Indiana State Highway. This manual was developed by the Transportation Technical Committee of the Three Rivers Coordinating Council to coordinate the standard of access control for the city, county and state.

RIGHT-OF-WAY:

Since August 1966 a continual research, as time permits, has been conducted in updating county right-of-way records. We have reproduced all copies of legal descriptions pertaining to county right-of-way from the county recorder's office from research of the records. Records of county right-of-way from past petitions over the years which were not recorded have been researched. The commissioners' records have been researched on widening petitions.

Upon completion of the aforementioned data, it has been recommended to the Allen County commissioners that an office for platting this information in the manner of strip maps pertaining to county road right-of-way be established in conjunction with the auditor's office for the following reasons:

- (1) This could be a central location with up-to-date county highway right-of-way information for lawyers, abstractors, realtors and land surveyors.
- (2) The County Planning Commission and the County Highway Department can direct their dedications to this central location.
- (3) Proper right-of-way could be given to the City of Fort Wayne at the time of any annexation.
- (4) A copy of all county road right-of-way to Allen County can be obtained at the time it is entered for taxation.

At the present time this problem remains unsolved, but we hope that our commissioners have enough foresight to establish the above mentioned for the benefit of all Allen County taxpayers.

The following right-of-way policy in the form of a resolution was adopted on December 11, 1967:

- (1) Any legal description prepared for recording and acceptance by the Allen County commissioners for county purposes shall be written and certified by a registered land surveyor according to law and approved in writing by the Board of Commissioners of Allen County and the Allen County highway engineer.
- (2) Any grant, deed or dedication prepared shall include the following for an individual parcel or tract for the purposes stated in Item (1).
 - (a) Any existing right-of-way dedicated for county purposes by grant, deed or petition shall show previous recording information including acreage involved.
 - (b) The new legal description of the acreage for an individual tract shall include the acreage involved of any additional right-of-way.
 - (c) The new description shall include the total acreage of existing right-of-way and the new legal description.

TRAFFIC

In the area of traffic and its control, traffic safety, pedestrian safety, engineering studies, and all of the other facets that enter into the

field of traffic engineering in the urban areas and Allen County, it is quite apparent the Allen County highway engineering is understaffed to do a qualified job.

Under Chapter 176, page 373, of the 1967 Acts, the following "Traffic Engineering Service Agreement" between the City of Fort Wayne, Indiana, an Indiana municipal corporation, acting by and through its Board of Public Safety, and with the approval of its Common Council, hereinafter referred to as the City and Allen County, Indiana acting by and through its Board of Commissioners, hereinafter referred to as the county, WITNESSETH:

WHEREAS, it is in the best interests of the city and the prescribed level of professional traffic engineering service within the City of Fort Wayne and Allen County, Indiana, and

WHEREAS, for the sake of uniformity and consistent relative levels of treatment, traffic engineering services as well as provision for men and equipment necessary for pavement marking, sign erection, and traffic signal maintenance on a county-wide basis is desirable; now therefore, in consideration of the premises and the mutual convenants and promises herein contained, it is agreed as follows:

A. City, through its Traffic Engineering Department will furnish the following services:

- 1) Traffic signal design, specification contract preparation, field review, including timing adjustments.
- 2) Specifications preparation for purchase of all sign, paint, and related material acquisition. County officials shall have the whole responsibility for actual purchase of materials.
- 3) Consultation or preparation of proposed traffic ordinance.
- 4) Review of all county-prepared roadway geometric design.
- 5) Consultation on budget preparation for county traffic materials.
- 6) Investigate, analyze and prepare documented reports on special studies, such as:
 - a) Traffic feasibility studies:
 - 1) Commerical development
 - 2) High density residential development
 - 3) Industrial development
 - 4) Other
 - b) Speed Zone surveys
 - c) Traffic control surveys
 - 1) "Stop" and "Yield" signs

- 2) Traffic signals
- 3) Diverters and other
- d) Roadway capital improvement needs
- e) Signing and painting need survey
- f) School safety policy and procedures.
- 7) Conduct limited drafting in conjunction with the above special studies.
- 8) Provide limited investigation of routine requests relating to traffic.
- 9) Provide total supervision of county personnel assigned to investigation and analysis of:
 - a) Routine requests relating to traffic
 - b) Special study of traffic matters
 - c) Sign installation and/or paint application.
- 10) Receive and answer correspondence dealing with traffic matters.
- 11) Receive and answer telephone communications dealing with traffic matters, particularly if item #9 is accepted as a practice.
- 12) Application of pavement markings and crosswalks.

B. County agrees:

- 1) To pay directly to the City General Fund Account the sum of \$7,026 which sum represents 10% of scheduled salary, office supplies, and other items which constitute overhead of said Traffic Engineering Department.
- 2) To pay the sum of \$8 per road mile for pavement markings to be applied by the city, from supplies furnished by county.
- 3) To pay for crosswalks to be applied by the city the sum of \$20 for the first walk and \$5 for each additional walk in the same general location.
- 4) To retain in their present capacity two county employees who presently assign portions of this time to traffic administration matters.
- 5) To assume the entire responsibility for the actual purchase of materials and to purchase marking material directly per bid quotes furnished to the City Purchasing Department from qualified bidders.

C. This agreement shall be in full force and effect during the calendar year 1969. It is contemplated that this agreement shall be re-

newed from year to year at the option of the parties and subject to a review of the terms in advance of renewal.

We feel that this method of approach will give the best service to the taxpayers of Allen County.

The City of Fort Wayne also maintains the traffic signals in Allen County which are owned by the Allen County government. Negotiations were completed this year for new contracts on a fixed monthly cost per installations for two basic reasons:

- (1) To reduce office cost of billing.
- (2) Experience has rendered stable cost figures for reliable use of fixed-cost billing.

The city applied centerline and no passing zone painting on 145.8 miles of county roadways at a fixed cost of \$8 per mile using city-owned machinery. This is saving the taxpayers an estimated \$17 per mile if contracted to private industry and keeps city machinery running that might remain idle upon completion of the city's striping program. Another advantage of city maintenance of traffic signals in the county is that the county is not required to maintain a service and maintenance department for a limited number of traffic signals.

MISCELLANEOUS

Under Chapter 176, page 373, of the 1967 Acts in November 1967, Allen County Highway Department through the cooperation of John Hatchett, Commissioner of Department of Administration of the State of Indiana, was able to purchase bulk rock salt at \$11.97 per ton instead of purchase of local bids at \$15.30 per ton—a net savings of \$3.30 per ton under the above mentioned law.

We recommend that every county commissioner review this law pertaining to your own county and that it may result in some savings to your highway department.

CONCLUSION

We realize that Fort Wayne and Allen County is a metropolitan area which has problems that smaller counties may not encounter; however, if any of the information presented to you today can be utilized in improving your county highway department, we wish you every success.