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HIGHWAYS, DIRECTOR OF—AUTHORIZED TO CONDUCT RESEARCH AND COOPERATE WITH ORGANIZATIONS CONDUCTING RESEARCH—MATTERS PERTAINING TO HIGHWAY DESIGN, CONSTRUCTION, MAINTENANCE, MATERIAL, SAFETY AND TRAFFIC—ACTUAL RESEARCH MAY BE CONDUCTED WITHIN OR WITHOUT STATE—MAY EXPEND STATE FUNDS APPROPRIATED TO HIGHWAY DEPARTMENT AND FEDERAL AID FUNDS ALLOCATED TO STATE.

SYLLABUS:

The Director of Highways is authorized to conduct research and to cooperate with organizations conducting research in matters pertaining to highway design, construction, maintenance, material, safety and traffic, regardless of whether the actual research is conducted within or without the State of Ohio, and for such purpose may expend state funds appropriated to the highway department and federal aid fund allocated to the State.

Columbus, Ohio, June 23, 1950

Hon. T. J. Kauer, Director, Department of Highways
Columbus, Ohio

Dear Sir:

I have before me your request for my opinion, reading as follows:

“The Committee on Standards of the American Association of Highway Officials, acting upon instructions of the executive committee of said association, in collaboration with Committees of Research Activities of the association have formulated plans for the acceleration for traffic load tests of highways to be jointly supported by the States and Bureau of Public Roads and administered by the Highway Research Board.

A Project Statement, defining the purpose and nature of tests and proposed plan of financing the project, is enclosed herewith for your information. Mr. H., Chairman of the Committee on Standards of the Association, has submitted the project for the consideration of all State highway departments and the Bureau of Public Roads to ascertain the willingness and ability of each to participate.

For your information, the American Association of State Highway Officials is a non-profit association comprised of responsible highway administrators and staff chiefs representing each State of the Union together with representatives of the Bureau of Public Roads. The purpose of the association is to do research on various technical problems, administrative legislation, financial matters and studies of various matters pertaining to highways.

Will you kindly advise whether or not the Director of Highways may legally expend state funds appropriated to the Highway Department and Federal Aid funds allocated to the State as proposed in the Project Statement submitted."

Attached to your request is a copy of a Project Statement, which reads as follows:

"PROJECT STATEMENT

Descriptive of a Series of Research Projects Proposed by The Committee on Highway Transport of The American Association of State Highway Officials to be Sponsored Jointly by All State Highway Departments and Administered and Directed by the Highway Research Board.

Background of the Proposal. In every State there is evidence that road damage is caused by vehicles of weight exceeding the supporting ability of existing road surfaces and foundations. It is generally believed that the damage attributable to excessive vehicular weight is caused by excessive concentration of weight on wheels and axles, and that the extent of the damage is affected by the speed of vehicles and the frequency and number of excessive load applications. The laws of nearly all States prescribe limits of axle load. The design of roads heretofore constructed has been assumed to be adequate for the support of axle loads within the legally prescribed limits in the frequency of their expected occurrence. In recent years the legal limits of axle load have been violated with increasing frequency; and in the same period the amount of damage attributable to excessive load is known to have increased.

Evidence accumulated during several recent years by the loadometer weighing of vehicles in all States shows that there is a substantial frequency of loading far above the legal limits. The

magnitude of loading that is causing the observed road damage is not known with any degree of precision.

The limit of axle load prescribed by law in the majority of the States is 18,000 pounds. The highest limit specifically prescribed in any State is 22,400 pounds. For tandem axle loads a commonly prescribed limit is 32,000 pounds. In one State a limit of 44,800 pounds is prescribed for axles spaced not closer than 50 inches. The American Association of State Highway Officials has recommended for uniform adoption in the laws of all States, limits of 18,000 pounds for single axle loads and 32,000 pounds for tandem axle loads spaced not closer than 40 inches.

Purpose of the Proposed Projects. It is the purpose of the proposed projects to observe and measure the effect of the frequent passage of vehicles of known axle loading at known speed over pavements of definitely known composition and dimensions, construed on foundations of known character and load supporting ability, chosen as representative of the approximate range of condition of existing highways in all parts of the country.

Character of the Projects. At the initiation of the Inter-regional Conference on Highway Transportation, an organization recently formed by officials of Eastern States, arrangements have been completed for the conduct of an accelerated loading test of a 1.1-mile section of concrete pavement on U. S. Route 301 in Southern Maryland. The pavement is mesh-reinforced, and consists of two 12-foot lanes separated by a longitudinal joint, each lane having a 9-7-9-inch cross section. The pavement is laid on a base of granular material believed to be above average stability.

The 1.1-mile section of this road will shortly be closed to public traffic, and, dividing the total length into approximate halves, the two lanes of each half will be used as test tracks over which a controlled traffic of test vehicles will be operated, night and day, 7 days a week, for at least six months.

On one half of the road the vehicles to be operated on one lane will be single, two-axle trucks having a maximum axle weight of 18,000 pounds. On the lane immediately adjacent the test vehicles will be single, two-axle trucks with a maximum axle weight of 22,400 pounds.

On the other half of the road, the two lanes will be similarly subjected to a controlled test traffic, the traffic on one lane consisting of single tandem-axle trucks with a tandem weight of 32,000 pounds and on the other lane consisting of single tandem-axle trucks with a tandem weight of 44,800 pounds.

The loading schedule will result in a repetition of the controlled heavy load application at intervals averaging less than one minute. The effects of the loads will be determined by observation

of the cracks that form in the pavement and by measurements of the strain in the pavement and determination of changes that occur in the elevation of the surface of the pavement.

It is proposed that this test already arranged, to be designated Road Test One—MD, shall be adopted as one case of a series of similar test projects to be arranged in other parts of the country, as opportunity affords, the other cases, to the number of three at least, to involve the testing of pavements and foundations of other types and designs. It is believed that the conditions to be tested in the Maryland case are representative of both pavement and foundation strength well above the average conditions found on existing roads of the country over. It is proposed that the conditions to be sought in other cases shall be of such variety as to encompass the general range of load supporting ability to be expected in existing highways of various types and foundation condition. In addition to the Maryland project, the series should include at least one other concrete road more nearly representative of the average of existing roads of that type in its pavement design and foundation support, and at least two flexible-type roads. The location and character of the additional roads to be selected for test will be determined by the Advisory Committee to be appointed.

Administration and Control. The Highway Research Board has already agreed to administer Road Test One—MD. It is proposed that the Board will likewise be requested to assume direction of the additional projects; and assurance that it will do so upon request has already been given. Under this plan the Board will appoint an Advisory Committee for the entire series of projects, to consist of representatives to be nominated by the participating State highway departments. This Advisory Committee and such necessary technical committees as may be required and appointed with the advice of the Advisory Committee, will determine the character of the additional roads to be tested, select appropriate locations, and decide upon all general conditions of the additional tests. Conduct of the tests will be under direction of the Highway Research Board, and staff to be appointed by the Board. All funds contributed by the participating States will be payable to the Board and expendable under its control.

Estimated Cost and Required State Contribution. On the basis of estimates made in detail for Road Test One—MD, it is estimated that a total fund of \$500,000 will be sufficient to cover all costs of a desirable series of projects. It is proposed to raise this fund by equal contribution from all States, the District of Columbia and the Bureau of Public Roads; the share of each being \$10,000. The Bureau of Public Roads has indicated that it will approve recommendations of the States for use of the Federal-aid 1½ percent funds, preferably matched with State funds in the usual proportions, to constitute the required State

contributions. Each State will be required to deposit with the National Academy of Sciences for use of the Highway Research Board, the amount of its contribution at such time as may be agreed upon in separate agreements to be entered into by the Academy and each State highway department. In the event that the total amount contributed is not required for completion of the entire research, any balance that may remain will be refunded to the contributing departments in the ratio of their respective contributions. The amounts contributed by several States to the financing of Road Test One—MD, will be applicable to the share required of such States for support of the entire series of tests, and such States will be asked to contribute additionally only the difference between \$10,000 and the amount of their contributions to Road Test One—MD.

A very similar question was before me in 1949 Opinions of the Attorney General No. 1008, a copy of which opinion is herewith enclosed. That opinion dealt with the legality of a contract involving the Department of Highways and the Automotive Safety Foundation of Washington, which provided for the making of a study of all the phases of highway needs. The terms of that contract provided for the study to be performed within the State of Ohio. Here, the proposed contract is between the Department of Highways, the American Association of State Highway Officials, and the Bureau of Public Roads, the purpose of which is "to observe and measure the effect of the frequent passage of vehicles of known axle loading at known speed over pavements of definitely known composition and dimensions, constructed on foundations of known character and load supporting ability, chosen as representative of the approximate range of condition of existing highways in all parts of the country." It will be noted that here the research is to be performed out of the State of Ohio. The question is thus presented whether the fact that the research is to be conducted out of the State will affect the result reached in 1949 Opinions of the Attorney General No. 1008.

Section 1178, General Code, reads in part, as follows:

"The function of the Department of Highways shall be * * * to conduct research and cooperate with organizations conducting research in matters pertaining to highway design, construction, maintenance, material, safety and traffic; * * *"

It should be noted that the above quoted section does not specifically require that the organization conducting the research does so within the State of Ohio.

It is my belief that the General Assembly in amending Section 1178, General Code (121 O. L. 456), being mindful of the advantages derived through State cooperation, intended to permit the Director of Highways to take advantage of and to cooperate with other states in conducting research regardless of where the actual research is to be performed. Had the General Assembly intended that the Director of Highways only could exercise this power within the confines of this State, they certainly could, and probably would have so declared.

Article I, Section 10, Clause 1 of the United States Constitution states, in part, that: "No state shall enter into any treaty, alliance or confederation", and Clause 3 of the same section provides that: "No state shall, without the consent of Congress * * * enter into any agreement or compact with another state, or with a foreign power * * *." These prohibitions, however, have been construed to refer only to particular alliances tending to encroach upon the supremacy of the United States. *Wharton v. Wise*, 153 U. S. 155; thus State cooperation involving Water and Fishing Right, *Arizona v. California*, 283 U. S. 423; Construction and Maintenance of Bridges, *Fenolio v. Sebastian Bridge Dist.* 133 Ark. 380; Council of State Governments, *Parker v. Riley*, 18 Calif. 2d, 83; Erection of Memorials, *Gillespie v. Barrett*, 368 Ill. 612; Development of the Port of New York, *New York v. Wilcox*, 189 N. Y. S. 724; Mutual Tax Exemptions, *Baird v. Joslin*, 116 Kan. 615; Exchange of Tax Data, *Dixie Wholesale Grocery v. Martin*, 278 Ky. 705, have been held to be lawful exercise of state power. That a state may carry on its functions beyond its own boundaries is equally as well settled. It is therefore my opinion that the State of Ohio has the power to enter into contracts with other States for the purposes stated in the Project Statement, and by amending Section 1178 of the General Code the General Assembly delegated this power to the Director of Highways.

The authority of the State of Ohio to expend Federal Aid for the purpose as set forth in the Project Statement may be found in 58 Stat. 842, which reads in part, as follows:

"With the approval of the Federal Works Administrator, not to exceed 1½ per centum of the amount apportioned for any year to any State under the Federal Highway Act * * * (may) * * * be used with or without State funds for surveys, plans, emergency, and economic investigations of projects for future construction * * *"

(Parenthesis, the writer's.)

In summation, it is my opinion that the Director of Highways is authorized to conduct research and to cooperate with organizations conducting research in matters pertaining to highway design, construction, maintenance, material, safety and traffic, regardless of whether the actual research is conducted within or without the State of Ohio, and for such purpose may expend state funds appropriated to the highway department and Federal Aid fund allocated to the State.

Respectfully,

HERBERT S. DUFFY,
Attorney General.