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critical materials that we need and may need them a lot more. Also, let's make the best of the various questionnaires and reports that are demanded of us. It will do no good to get all "het up". In most cases if you go quietly to the federal official in charge of the annoying agency in your state or county, you will find him human and willing to try to work out your problem with you; at least that has been our experience in Iowa. It is my firm belief that those in charge of our war effort realize the need of an adequate highway transportation system, and in the long run I do not believe they will allow conditions to get so bad that traffic will be seriously hampered. If we will not undertake any jobs except those which are necessary for the successful prosecution of the war, including the accommodation of essential civilian traffic, and if we will not ask for any materials and equipment not needed for those particular projects, then I am sure our needs will be taken care of somehow.

RELATIONSHIP OF POLITICAL SUBDIVISIONS TO THE WAR PRODUCTION BOARD IN HIGHWAY IMPROVEMENT

Ray H. Bower, Chief Engineer, State Highway Commission of Indiana

This subject, in its broadest sense as affecting our industry, encompasses a plan for securing critical materials in the construction and maintenance of highways, streets, park boulevards, bridges, overhead and underpass structures, and all other drainage structures. The need for some feasible and workable machinery was, of course, brought about by our war efforts. I should like for us to approach this problem in a sane and workmanlike manner.

A supercritical attitude will neither clarify nor solve our problem. We are responsible to the public for solving transportation problems, and it is our duty to make even the worst regulations and the poorest directives work in the best possible manner. A poor regulation can be made to function by our full co-operation and efficient execution. Ignorance breeds suspicion, and we cannot permit ourselves to enjoy (and I use the term "enjoy" advisedly) this state of mind and yet accomplish anything worthwhile for those whom we serve if we wish to do the proper kind of a job. Thus it behooves us to put more intensive effort into our job than ever before.

The fundamental purpose of a "controlled materials plan" is to assure a balance between supply and demand and that such materials will be available to the consumer in the quantity and at the time they are needed. The plan contemplates centralized control by the War Production Board. Detailed responsibility for the distribution of controlled materials through specific allotments to programs and schedules is decentralized—first, in the claimant agency primarily responsible for each program or project, and, secondly, in the consumer's responsibility for each schedule, especially as to time and speed of consumption. You can readily perceive our great responsibility in being fair and in making a true and accurate request for critical materials as needed.

The plan, thus designed and executed, will properly balance the available supply of controlled materials with over-all needs. Over-all needs should always be interpreted as essential war needs at this time. Even then we will have to readjust our plans many times and work to unforeseen contingencies as new war demands are made. Of course, the unexpected can happen, and various materials may become more plentiful than anticipated. The sole responsibility is ours to make the current reports, which are requested by the War Production Board, as promptly and as accurately as possible. We all recognize the fact that a large part of such reports will be estimates. and all governmental agencies have advised us that they are aware of this fact. Many unforeseen difficulties will arise besides the lack of critical materials to hamper construction and maintenance work. Labor, for instance, has now become a critical commodity and apparently could become the greatest controlling factor in our planned work.

The federal priority agencies began to function in 1941 in a restricted and cautious manner. This continued until the 9th day of April, 1942, when a definite stop order was issued. This was designated as Conservation Order No. L-41. Instructions and definitions as to how we might proceed were issued at the same time. Our next order was No. L-41-600 dated May 8, 1942, which set out further reports that were needed and other necessary instructions.

I do not believe a detailed report of these regulations is necessary here. Construction projects are so important, as they may assist the war effort, that each one on which you may need assistance merits individual attention. A conference with our Priorities Engineer, Carl E. Waggoner, whom you may always contact at the offices of the State Highway Commission at Indianapolis, should be arranged.

On April 24, 1942, Recommendation No. 45 by the Petroleum Coordinator for War was issued restricting the purchase and use of bituminous materials to seventeen Atlantic States. On July 2, 1942, this order was extended to cover states as far west as the Rocky Mountains. This order affected both purchase and usage. I want to point out the good judgment and excellent foresight used in this order. When the order was issued it made it possible to purchase bituminous materials up to July 10, 1942, and permitted usage of these materials up to July 20, 1942, thus giving a cushion to the industry, which was sorely needed because of the short construction season where asphalts are used.

Because of its value as fuel, the use or purchase of oil was definitely prohibited; however, in many cases the industry was permitted to use all oil then held in storage.

PUTTING REGULATIONS INTO EFFECT

The next problem confronting the War Production Board was to set up machinery to carry out these regulations in our industry. They naturally turned first to the Public Roads Administration, which in turn sought the help of the State Highway Departments.

The State Highway Commission of Indiana received an invitation to send representatives to the Chicago office of the Public Roads Administration. In fact, all states in the Chicago District of the Public Roads Administration were represented.

The State Highway Departments were requested to use their facilities and employees to contact all other political subdivisions engaged in the industry as well as any other consumers, such as railroads, street railways, industries, and private individuals. At this conference I could readily see that the regulations were devised not to hamper us but to assist us in securing the much-needed materials in a manner fair and equitable to all.

I want to impress you with the statement above because of its value to all of us in making proper use of these privileges. I can further assure you that the State Highway Department and all other users follow the same procedure in securing permits to purchase asphalts. It has been our misfortune to have had some of our requests pared down and others refused outright, but in most instances we were at fault in not preparing a more defined and clear-cut case.

We must all appreciate this fact, that the final decision has to be made at a great distance from the point of usage; and unless we all prepare a clear, understandable, and complete form we only make our request very hard to grant. Furthermore, we in the field have sometimes been extremely unfair, and I believe derelict in our duty, in that we have requested unreasonable amounts of material and have sponsored projects clearly outside the regulations. This has only made the federal government's task more difficult and in turn has delayed the granting of merited requests. Projects without merit are the most difficult to pass upon.

All these requests pass across my desk. I recall one county that asked for more bituminous material than it could pay for with the total amount of funds allocated to it for the entire year. This attitude can only bring further confusion and more strict regulations, which none of us would relish.

Your State Highway Department has set up the proper machinery to serve you. Normally we can forward all requests the same day they are received. It is our intention to give you as good service this year as we did in 1942.

I also wish to suggest that for needed assistance in processing your requests you call on our District Engineers. Please remember that all 1942 requests expired on December 31 and that new requests should be made for usage as well as purchase. You can secure all forms needed at our District Offices or the Indianapolis Office.

I wish to say here that the assistance given the industry by our vendors and their salesmen has been greatly appreciated. They have in many cases expedited the work in various ways. With your further permission, Mr. Waggoner will still continue to sign your name and change details, but always after a telephone approval, as heretofore.

Our latest suggested restriction has been from the Chicago office of the Public Roads Administration requesting that the State Highway Commission reduce the amounts of bituminous material per square yard in this coming season's applications if at all possible. I am sure this will reflect itself in your applications; however, if any definite directive is given, we will immediately inform you. Please remember that the bituminous regulations are separate and apart and have no connection whatever with any other priority regulations.

When we contacted all highway and street departments in December, 1942, we found that, where there would be changes of administration, no information or suggestions could be secured on proposed construction or maintenance for the coming years. If any of you are contemplating any new work, it would be to your advantage to file forms immediately. These reports cover all construction projects estimated to cost more than \$1,000. Maintenance and repair work and projects costing less than \$1,000 do not require these reports. Only one report will be necessary for each project.

In looking to the future it is clear that we, as highway officials during the war, must use our most concerted efforts to hold what we have in our roads, streets, and bridges, and the chances do not favor our side. It is not difficult to see that highway problems of an enormous magnitude will face us in the months ahead.

Our departments of government are threatened on all sides by heavier maintenance requirements on the one hand and an increasing shortage of all necessary resources on the other.

These shortages to which I refer are familiar to all of you. They consist of critical materials, of manpower, and of equipment. By the reduction in non-essential driving under gasoline

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and tire rationing, a drastic curtailment of all highway revenues is added to these other shortages. In the face of these shortages, the never-ending requirements of maintenance will increase because of our inability to do any construction or major reconstruction. I am advised that the trucking companies are now loading all their transports to capacity. To meet the full impact of all these destructive conditions, we will need all our ingenuity and a full and complete coordination and co-operation between our local and state departments.

Obviously we should center our most intensive efforts on the most important and highly traveled roads. I believe that now, since tourist and pleasure driving have been practically eliminated, the traffic index is a true yard-stick to use in considering which are the most important roads. We may also have to neglect many of the essentials which are considered good maintenance and construction under normal times. I am sure we will not be criticized in assuming that our roads, streets, and structures are also expendable. On the state highway system, the army has designated a so-called strategic network. This network serves all types of army and navy units and war industries; thus it is easy for us in the state highway department to be certain which roads are most important in so far as war service is concerned.

Speaking for the state highway department, I can assure you that any employee of ours is ready and willing to serve any other department of streets and roads at any time you may feel such assistance will be useful to you.

MAINTAINING AN ADEQUATE EQUIPMENT SUPPLY FOR THE DURATION

Bob Howe, Principal Construction Machinery Specialist, War Production Board, Regional Office, Chicago, Illinois

We have asked our Army and Navy to win this war. They accepted. Machinery of every description and in great quantities is necessary. For the duration, we might drop the traditional competitive spirit as we knew it in the past and agree to help each other with our machinery on important projects still unfinished in this country. Railroads, airlines, steamship companies, and manufacturers have pooled their ideas and facilities. All idle construction machinery will shortly enter an equipment pool if it isn't placed on projects through sale or rental agreements by the owners.

Owners of construction machinery, both large and small, find themselves registered under one or more limitation orders.