

Roads - Value
in a word, road
by

Highways: Facts To Stop The Lies,

You will be amazed at what this bold statement on the value of our highway system can teach you. We think you will find in it the strongest arguments yet offered to dispel some of the half-truths being used to make "roadbuilding" a dirty word. The text here is from a talk given by Mr. Turner at a meeting of the American Association of State Highway Officials.

Read these strong words. Spread them around. We'll help you.

If you want reprints, write John Rehfield, Editor, CONSTRUCTION EQUIPMENT, 205 East 42 St., New York, N.Y. 10017.

In this fighting message, Federal Highway Administrator Francis Turner gives lie to claims about roads ruining the environment

WE MEET at a time when the Nation is facing what some persons say is a virtually insoluble transportation problem.

The economists tell us we have to double our transportation plant capacity within the next two decades—and this forecast corroborates our own highway needs studies.

But to do this will not be a simple or easy task, especially in view of today's emphasis on ecology, environment, citizen involvements, and competition for position by numerous special interest groups.

Some writer-commentators say we can only achieve this with perfect balancing of the various modes of transport, but they don't define what balance means—except by implication that it means spending the same number of dollars for something fuzzily referred to as mass transit, as are expended for highways.

Some urbanologists tell us we shan't disturb the norm of the Central City, and in the same breath they bemoan the impending death of the Nation's downtowns.

Some preservationists oppose the use of *any* more land for highways, or for any other purpose that would disturb the status quo.

Some conservationists don't want a blade of grass or the leaf of a tree disturbed—except by them.

Some hygienists scold us for polluting the air, and here lately we've even been chastized because highways bring more business and more people to communities, thereby bringing a reverse twist to the usual Chamber of Commerce efforts.

Added all together, even though each element in itself may be small in numbers, the total accumulative effect is to produce serious obstacles to badly needed highway improvement programs of broad significance and impact on other desired goals and programs.

Now I say "some" self-appointed spokesmen from these several groups, because I believe that the large body of the public, regardless of their group association, is sincerely striving to find realistic solutions to these questions, just as we ourselves are.

But the life of nearly everybody in public service these days is beset with criticism and counter-suggestions, from all directions, from a loud but small percentage of our society

which claims to have the instant and perfectly simple answer to all of life's complex situations.

Today, we meet in an atmosphere of tangible accomplishment, with more than 72 percent of the 42,500-mile Interstate System open to traffic, and another 24 percent underway, providing the safest, most efficient highway network in the world. Each five miles we build, means that we annually save one life that would have been lost had we continued trying to carry traffic on older, conventional highways. The monetary savings *alone already* equal the dollar investment to date, without putting a value on the convenience of the service offered by these splendid roadways.

But there's more to the highway program than just the Interstate. While the entire Federal-aid system includes only about a fourth of the country's 3.7 million mile total of roads and streets, this system must carry about three-fourths of all travel.

I could go into a lengthy recitation of achievements on how the system has been upgraded, how the average speed of travel increases each year, how the deaths per 100 million vehicle-miles of travel have been steadily whittled down.

But the measure of service rendered by the highway network of the United States, and the results of our 1955 decision, show us that whereas in 1956, the vehicle mileage rolled up on these highways totalled 631 billion miles, by 1969, that figure had climbed to 1 trillion 71 billion miles.

Such figures are indeed difficult to comprehend. Even more difficult to comprehend is the fact that in that same period of our time our highway system has carried 20 trillion person-miles of travel and 4 trillion ton-miles of freight.

The country's roads and streets are providing nearly 200 million person-miles of travel service *per hour* for each and every day and night.

And for the benefit of those you hear complaining every once in a while that in providing these services "we are paving over the country," permit me to add these statistics:

In 1956, the total road and street mileage in the United States was 3.4 million miles. In 1969, the total road and street mileage was 3.7 million miles. And the road and street mileage totalled about 3 million miles when the Federal-aid highway program was begun in 1916. Even before the automobile was invented there-

fore we already had virtually the same highway network to serve the horse and wagon and buggy, as we have today.

Roads and streets provide the access to land and its superimposed usages, rather than merely servicing whatever kind of vehicle it is that travels on them. Most of the increase in our highway system mileage in the years since the auto was invented has been caused by those streets built in new suburban residential developments; miles which generally receive no Federal-aid or State Highway Department funding. Few people seem to realize that all of the Federal-aid highway program effort has been de-

problems, and a steady and relentless effort to do something about them.

They would find that highway engineers and administrators have for many years now been trying to utilize highways as a positive force in achieving desired social and environmental goals, related to land uses.

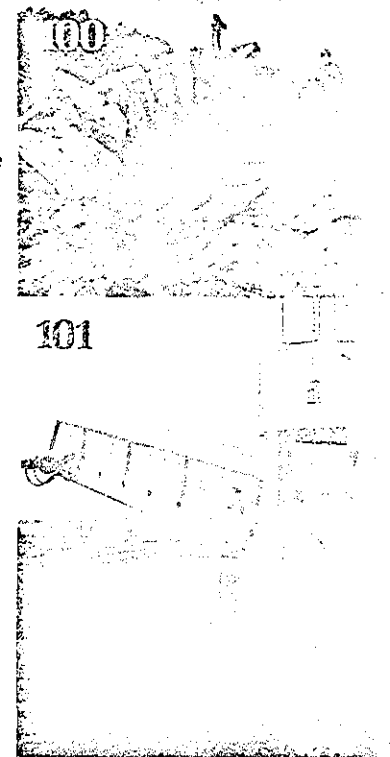
They would find many highway projects that have produced new parks, new recreational areas and new land uses all across the land, exceeding in amount, the few highly publicized takings which have created controversy and resulted in anti-highway headlines.

They'd find highway embankments being employed to create new lakes,

Here IS absolutely the easiest way for you to check out now new roadbuilding equipment that can increase your profit power in 1971. CE displays some of the exciting trends here. To learn about these machines—and others in the same equipment classes—just circle the item number on the Reader-Service Card in this issue.

CRAWLER TRACTORS (100)—You will be interested in hydrostatic drive, coming on fast now. Manufacturers will also give tips on new attachments, and new power options. **MASS EXCAVATORS (101)**—At least three models ready for 1971 that will dig and load continuously at rates of over 3000 yph. **UTILITY TRACTORS (102)**—The little diggers have edged up in power and down in trenching reach so they now take on drainage work that once kept bigger units busy. Get latest facts on new attachments here. **SLIPFORM PAVERS (103)**—Flexibility keynotes new units. They shrink to fit city street work, expand for mainline paving. They set 2-mile-a-day pace, and handle continuous reinforcing without slowdown. **PORTABLE CRUSHING PLANTS (104)**—Big news is big reduction ratios at output rates up to 2000 tph. We'll see that you get tips on making fine aggregate where natural sand is hard to find. **DRILLS (105)**—This year's machines continue trend to bigger hole size with more power at the bit. A dramatic development: the first applications of an all-hydraulic crawler drill.

More tips and trends on next page.



voted to improving the standard of road service on an already existing network of roads which had been originally laid out to service wagons and horses, rather than the automobile.

But we've been doing something besides just improving roads since this Federal-State partnership was created back in 1916.

It might be an education, in fact, if urbanologists, sociologists, environmentalists, and some others would take the time to leaf back through the various Federal-aid Highway Acts of the past years. They would find there the record of a long and deep awareness of today's headline-making

sometimes for recreational purposes, other times for water impoundment reservoirs, both provided for out of highway funds, with erosion and water control measures applied to larger areas than those taken for highways themselves.

They'd find programs to preserve and protect artifacts of past civilizations that sometimes are uncovered during road building. Some of these have been spectacular findings which have led to the discovery of hitherto unknown species of animal life on this continent—all financed from highway funds, and done cooperatively with grateful archeologists who had inadequate funds of their own to ac-

complete such finds.

They would be thankful for the construction of thousands of rest areas which make motor travel with families safer and more pleasant for the kids, as well as the family dog who frequently has his own exercise and walking area—with scenic overlooks, landscaping, and beautification efforts that go far beyond the control of outdoor ads and junkyards—again with all of these having been financed from highway funds.

They might be amazed, too, to learn that we plant millions of trees and shrubs each year along the rights-of-way and spend hundreds of thousands of dollars transplanting trees—

They would find, as a matter of fact, that the Federal-aid highway program, which is frequently held up as an enemy of our environment, has been devoting 15 percent and more of its annual budget to work directly concerned with protecting and enhancing our ecological heritage—expenditures which actually far exceed in amount the expenditures for pavement itself. The highway dollar is also making substantial contributions to training, research, accident studies, railroad grade crossing protection, the area-wide transportation planning efforts in all of our cities, and a large list of contributions to improve the social order.

which our special training and experience have developed. The impact of actions in this crucial field of endeavor dictate that decisions must not be left to the untrained amateurs, nor to those who act without delving deep into the whole realm of complexities surrounding the transportation needs of this Nation.

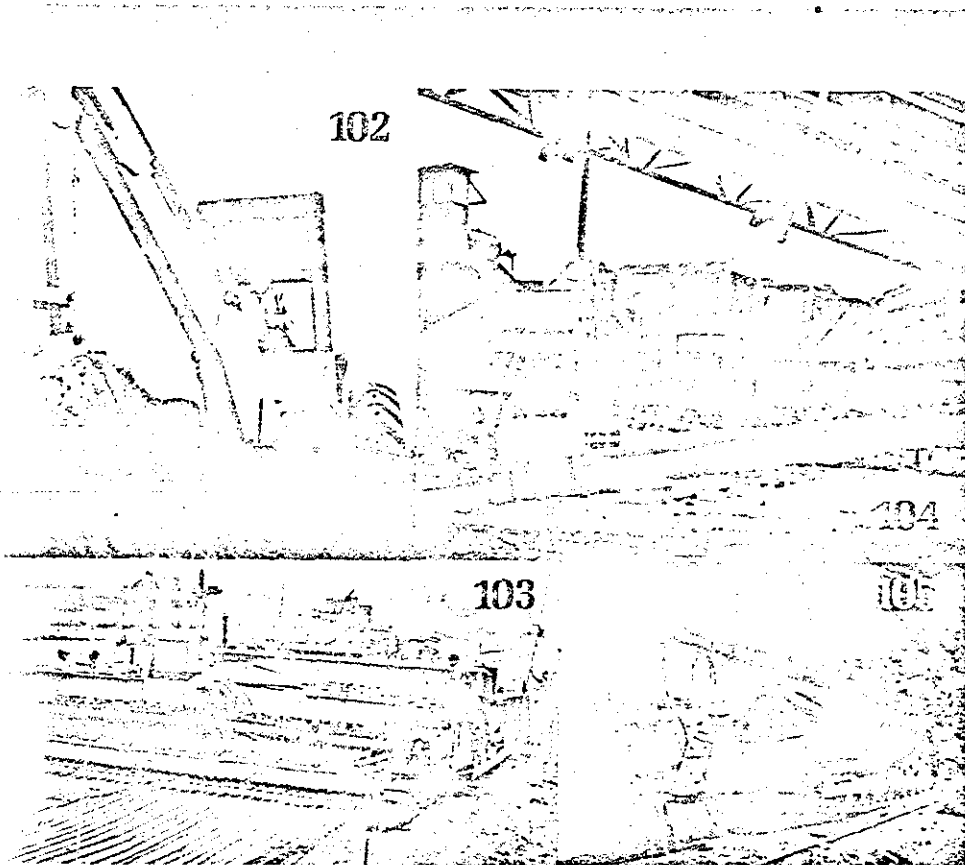
The quantity of these needs is estimated by the Department of Transportation to be equal in the next 20 years to all of the transportation which has been provided in the United States since the founding of the Nation, if the other stated goals of our society are to be achieved. In the highway field, we customarily make our forecasts of needs 20 years into the future, so that we must think in terms of a program during the next 20 years, larger by far than what we have done during the last 20 years. A "do-nothing" solution, or a "do-less" solution, obviously then, cannot be a responsible answer.

To develop the policy for guidance of the Federal interest in this undertaking, the Department of Transportation is presently engaged in a broad policy study to determine what part of these total needs can best be provided by each of the modal administrations within the Department. You are involved with us in the FHWA portions of the study. During the recent past and even today, there are some voices which have already concluded that we have put too much emphasis on highways in the past, and that in this future program we should curtail any further highway construction and divert its present funding sources to something else.

If we look objectively at the whole transportation picture and see the overwhelming portion of the total load which is now being carried on our road and street system, and then look at the already reported needs to the year 1985, and compare this with the projected financial resources to meet those needs, the conclusion is inescapable that we can't solve the overall problem by diminishing expenditures for the highway portion of the solution.

Even if some vehicle other than the automobile, truck or bus is invented and could be produced in the quantity and 20-year time frame for which we are projecting our total transportation needs, we will still require the construction of roadbeds and roadways of some type, such as our highway rights-of-way provide, for that vehicle to travel on.

We have already changed vehicle characteristics since the turn



some rare species, some not so rare—instead of bulldozing them under as some have tried to make the public believe. In fact, we have planted more trees and shrubs and flowers than we have removed, again using highway monies to improve on the situation as we found it originally.

They would find, too, an impressive record of erosion control, reduction in natural siltation of our lakes and streams, efforts to control noise and air pollution through the use of buffer zones, wider medians and depressed roadways. They would even find, too, that highway monies are funding effective measures to control rats, in building-demolition areas.

This is only a small chronicle of the beneficial results flowing from the 1955 decision by this organization, and as we meet today we again are considering a course of action that could be the prelude to an even more beneficial program.

But we are more experienced, and equipped with better tools today than in 1955. We have an even more urgent mission to assist in providing the increase in transportation and related services which our society is demanding for now and the future—an increase which continues to compound at about 4 percent per year. We need to use all of our capabilities and to contribute fully the expertise

of the century, but without reducing the need for highways themselves as the artery over which to move the changed vehicle. I refer of course to the conversion from wagons and buggies and horses to the motor vehicles of today when, as I mentioned earlier, we had virtually the same highway network for that vehicular type in 1900 as we use today for its successor. This is so now, and will undoubtedly be true in the future, because I repeat that a highway and street network is necessary for land access, while the particular type of vehicle used for that access is only incidental thereto. Roads and streets have been the means of providing access to land since the dawn of history. Certainly roads were not invented with the 1956 Federal-Aid Highway Act, nor even with its original antecedent in 1916, to be an evil companion to the automobile.

If we are to double our capacity in 20 years, then we need more capability, not less, from each of the modes of transportation, and it will be self-defeating simply to transfer funds for critically needed improvements to another mode—unless it can be shown that this action will indeed provide more total transportation service from the same investment of resources. It is my considered judgment that such a case cannot be made to justify large scale diversion of highway transportation dollars to other modes, because careful studies already made disclose that a dollar spent for other forms of competing passenger transportation will not buy as much transportation service as the same dollar when spent for highways.

We must make our decisions for the future in the knowledge that the almost universal trend in all of our major urban areas shows a steady declining population density of land use in the core areas, while the growth rate in the surrounding suburbs is several times the rate of downtown decline. Indeed in a number of cities, the downtown areas are actually losing either relatively or numerically. When converted to highway needs, this says that major expansion beyond presently planned freeways to serve the central city areas will not be generally required.

In all but a very few cities, the increases that are being projected can easily be accommodated on the planned highway network by the simple addition of such amounts of bus transportation as are required. Present and planned roadways in most cases can handle the added bus vehicles along with the many passenger cars, service vehicles, and the trucks

needed to move goods. Thus the road and street system can be and is, a universal and intermodal type of access facility. No lesser highway network would be required in most cities, even if special mass transit facilities are constructed, simply because the large volume of freight and service vehicles would continue to require a highway and street network, of the presently planned size.

The newly enacted Urban Mass Transit Assistance Act contains the authority to assist in acquisition of transit vehicles and their servicing

each urban area of more than 50,000 population, extensive enough within each urban area to carry about 75 per cent of the total vehicle-miles of travel in the area, thus making the portion of the traffic load serviced by Federally assisted routes in the urban areas consistent with the size of load carried on the other portions of the total system. Funds, either from new authorizations, or current TOPICS and ABC apportionments, would be immediately available to begin construction and other types of improvement on this new system. Thus, a considerable measure of assistance would be available beyond the present program for urban areas, bringing them for the first time to a level

Looking ahead to the 1971 roadbuilding season, you can count on design advances in some common types of equipment—and more use of exotic shortcuts.

HYDRAULIC EXCAVATORS (106)—Circle this item number on the Reader-Service card to learn about machines that dig 35 ft deep, and some that can pull dirt from tight corners and under utility lines. **BATCH PLANTS (107)**—Big advance is in the way they set up fast, without help from a crane. Big profit point is increased output as new electronic controls take over. We'll get you facts on asphalt plants that are smokefree, and concrete plants that are dustfree. **SCRAPERS (108)**—Even elevating models get twin engines in 1971, the better to move where traction is poor. More hitch devices, too, to let scrapers help push-load each other. Is the trend to bigger capacity and power topping out? Not if the 1971 models are an indication. **OFF-ROAD TRUCKS (109)**—We couldn't quite believe the size of the frame of a 200-tonner you will see in 1971, but the manufacturer will tell you all about its output. Look for more truck advances in CE's October truck preview. **CURB AND GUTTER PAVERS (110)**—Focus of the 1971 models is portability for fast moves in the city street work. Learn about new models that do the whole job: slipform curb, gutter, and street slab at the same time. Also, units that adjust in width at the touch of a hydraulic control. **LASERS (111)**—Look for these sure light sources as guides for automatic grading equipment, and replacement for stringlines in trenching. CE will bring you an up-to-date report in '71. In the meantime, use the Reader-Service Card to get early facts.



facilities, while the highway legislation under consideration this year contains authority to construct the required roadway facilities and appurtenances. Thus the two acts in combination are complementary to each other, and in my opinion will essentially supply the answer to the vast majority of center city transportation needs in the immediate and 20-year future.

The highway legislation also provides for creation and development of a new Urban Highway System to supplement the major existing Federal-aid Primary, Secondary, and Interstate System extensions into the urban areas. Such a system would include the principal arterial routes in

of assistance eligibility, consistent with the inter-city segments.

Through either new legislation or procedural revisions, the overall planning process under Section 134 or our Title 23 will be expanded and broadened, to encompass even more of the community goals and objectives and participation than at present. Community involvement will be enlarged through appropriate means. Environmental factors will be spread throughout the total planning and development processes from their very beginnings with proper weighing of values in relation to other factors.

Further refinement has already been made of the housing and relocation provisions to reduce the ad-

verse impact on those citizens whose place of business or residence must be taken to provide the transportation network needed for our future societal goals.

Training opportunities for both minorities and others are being increased. A start will be made on replacement of obsolete and structurally deficient major bridges. Likewise increased attention is proposed for protective treatment of railroad grade crossings. Further improvements in the techniques of relating transportation requirements to land use proposals can be expected through application of research and development coupled with accumulating experience. But planning must continue

the transportation policy and plan which is being developed within the Department of Transportation as I have mentioned earlier.

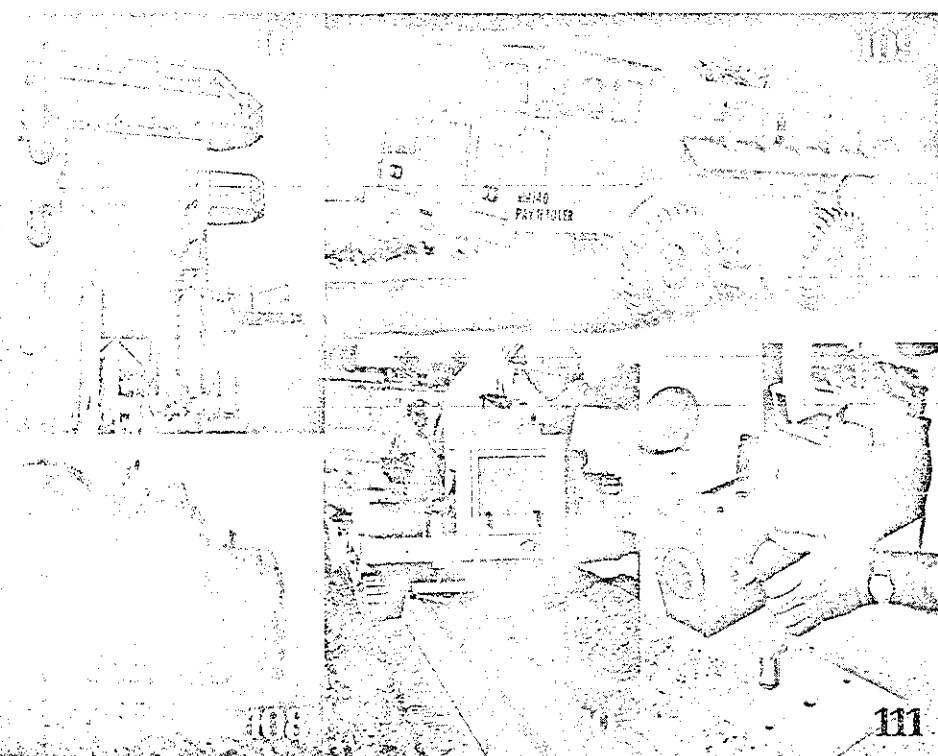
As we plan our highway needs for the longer future, we need to be giving consideration to ways to properly coordinate heavy freight truck movements with available railroad facilities so that some reduction can be achieved in the numbers of vehicles and heavy axle load passages, to produce both a possible increase in traffic safety; an increase in present roadway lane capacities, and an increase in length of life of roadbeds and structure; while simultaneously assisting railroad revenues, without increasing trucking costs. I refer of

bilities of reducing the total person-miles of movement within the city through greater co-location of jobs and residences. If greater use could be made of self-contained communities containing residential, service, trade, cultural and employment opportunities in a planned community area such as visualized in the New-Town-In-Town concept, then travel over long distances from home to employment areas would substantially reduce the present congestion of morning and evening rush hours.

This situation constitutes the most serious deficiency in urban transportation in the minds of most critics at the present time, although in most cases this commuter movement is only 5 to 10 percent of the total urban movement. A program of building more residential apartments either on top of present offices and stores in the typical downtown areas or adjacent thereto, would be a substantial assist in relieving this problem for us. More attention to increased staggering of work hours, days, and promotion of more car-pooling through control of center city parking facilities could likewise be important contributing factors to relieve the present problem for us, without requiring major additional street construction and widening.

In a number of our cities, study should be made of the possibilities of consolidating railroad trackage and terminal facilities to permit abandonment of some presently used rights-of-way which could then be made available for improvement as mass transit arteries, either for rail transit cars or as busways, thus reducing rail taxation burdens, operating costs, and permitting construction of needed transit facilities or new roadways without major displacement of people. In most cases, the freight generation or delivery requirements on such abandoned routes could be efficiently handled by truck, especially if combined with piggy-backing referred to earlier.

With the new and improved tools which the Congress is proposing to give us, and with our overwhelming dominant share of responsibility in the transportation field, we must respond with sound and fair judgment and actions—and soon. Just as we responded with an action plan in 1955. I'm fully confident that we will respond this year as we again wheel through a major decision point in our Nation's transportation history.



to be directly tied to program administration as it is at present and not separated therefrom as some are presently advocating. It should not be allowed to become simply a functional end of and for itself alone. Proper coordination such as it now being effected among the appropriate modal administrations within the Department of Transportation will provide that degree of overall integration and melding into a total transportation plan that is both necessary and desirable. The statutory authority or procedural tools to realize all of these objectives can confidently be anticipated to be in our hands within the next few months, giving to us the wherewithal by which to carry out

course to the study of whether "piggy-backing" operations can be a means to increase the efficiency of an overall integrated transportation system. We need also to consider the possibility of increased use of rail passenger movement in the medium trip length range to reduce both passenger automobile volumes on our highways, and airways and airport congestion.

Some changes in planning in other fields could be helpful to us. For example, in building and rebuilding our cities we could give greater consideration to the possi-