

# THE EARMARKED MONEY MYTH

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## EARMARKED SAFETY MONEY EFFECTIVE IN GEORGIA

There is much discussion, particularly in federal circles, whether it is proper to earmark money for safety projects or to provide lump sums with broad discretionary capabilities for administrators to meet needs differently within a given state. The question remains, will this latter method best respond to the highway safety problems of America or is earmarking money for safety a myth? Webster tells us the definition of a myth involves the creation of a story that reveals an unscientific account, belief, or theory. I wonder today, as we look at the record, if we can ascertain whether earmarking money for safety purposes has been a myth or, in actuality, has been a boon to America's improvement in highway safety.

Let's look at the facts. It is generally conceded that our country marked its peak in traffic fatalities in 1973 when 56,000 people were killed on the nation's highways. In our own state of Georgia, this was the peak year as 1,926 deaths (an all-time high) were recorded. I wonder if it is a coincidence that 1973 was also the year the Highway Safety Act stipulated that funds should be spent in several specific areas which we came to know as Title II. And I wonder if it is also a coincidence that the 1966 Safety Act which stipulated performance standards for 18 different areas, for the most part finally came under sanctions in 1973 when the states were advised that they *would* produce or be sanctioned. Other programs, such as TOPICS, also had earmarked money involved in a mad scramble for implementation in 1973 to avoid the lapse of funds. All of these actions resulted in a significant change in the highway environments arrival of 1974.

Coincidentally, in 1974 there was a national downtrend in accident experience. Many people are quick to point out that this downtrend occurred due to the energy crisis and mandatory reduction to a 55 mph speed limit. Also, other factors included a reduction in travel as vehicle miles were recorded down in most every state, a trend to smaller vehicles was beginning, the oil crisis, improved safety equipment for autos, and the nation's economy in general was tightened.

All of these were reasons logically advanced for the decline in traffic fatalities.

While the verdict is not finally in, it can certainly be appreciated that many states including Georgia did register significant decreases in their fatality experience during 1975. Speaking of our situation in Georgia, we recorded a reduction of about 20 percent fatalities in 1974 over 1973. (See Figure 1.) The numbers were reduced from 1,912 in 1973 to 1,557 in 1974. This reduction trend even continued into 1975 when our current total of 1,383 fatalities indicated an additional 11 percent reduction over that experienced in 1974. Thus, one can see through all these statistics that if Georgia's all-time high of 1,912 fatalities had continued through 1974 and 1975, over 900 additional lives would have been lost. In actuality, 529 fewer people were killed during this period than the respective year before. This is a total reduction slightly less than 30 percent.

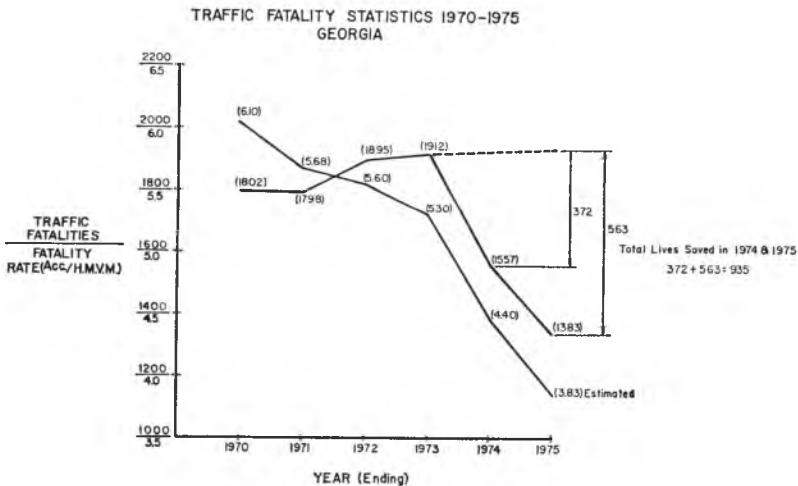


Figure 1.

Did earmarking the money for highway safety improvements play a role in this reduction, or is this a myth? Consider that the 1975 reduction, at least in Georgia, continued at a significant rate. Yet most of the generally acknowledged traffic factors had been accounted for during 1974. Most knowledgeable experts think the effects of the 55 mph speed limit leveled off by mid-1974 and later, speeds were actually measured on a slight increase toward the end of 1974. Certainly traffic volumes have recovered. Georgia's experience indicates

that 1975 volumes exceeded our previous all-time 1973 high. What then could have had an effect in 1975? Could it possibly be that the earmarking of money for safety projects, which was initiated in 1973, had picked up a head of steam and was now beginning to pay direct dividends to those who were advantaged in following the program specifically? I think the answer is yes, and I would like to demonstrate to you from the experiences in Georgia some of the reasons that make me draw these conclusions. I will reveal to you briefly some project locations where improvements were made that are typical of reducing and eliminating accident hazard and frequency.

### INTERSTATE SAFETY

Many modifications are needed for improved interstate safety, including attenuation devices, grooving of pavement, breakaway poles, improvement of median barrier systems, adding street illumination for nighttime problems, improved treatment for lane drop and for lane carry conditions, such as when two facilities merge into one. Our accident statistics have enjoyed a substantial reduction in recent years on the interstate system, a goodly portion which can be attributed to projects of this type. During 1971, our final interstate fatal accident rate was 3.16 per 100 MVM and this figure had been reduced to 1.39 fatalities per 100 MVM of travel in 1974, and we expect it to be even better in 1975. Our volumes were up, but we lost only 85 persons in an interstate traffic fatality compared to 106 in 1974. I would like to highlight for you just three representative projects:

- A ramp metering project in downtown Atlanta on the connector carrying both I-75 and I-85.
- A bridge barrier rail project on I-20 just outside of Atlanta.
- A safety modification project on I-85 in north Georgia.

In Atlanta on the I-75 downtown connector, southbound at North Avenue, a ramp metering project was installed at a location which sets up a short weaving type conflict. (See Figure 2.) While accomplished only at a cost of \$2,200, it produced a first-year benefit of \$153,000 since the accidents were reduced over 50 percent, from 203 to 101 annually. Further north on this highway, a similar type problem was treated by channeling an on-ramp from Peachtree Road directly into I-75, thus eliminating another potential weaving conflict. (See Figure 3.) The accident reduction here is even more persuasive.



Figure 2.



Figure 3.

Sometimes, accident locations are at a spot. Consider a bridge on I-20 outside Atlanta. Seven fatalities were recorded on this bridge in a period of six years. Each of the fatal accidents had the same characteristic of the vehicle losing control and veering into the side

of the bridge. Efforts to correct the problem included the use of raised pavement markers, striping, and, significantly, the construction of the New Jersey barrier wall for a handrail in conjunction with some widening of the bridge. Skid marks on the barrier are indicative of at least one fatality being averted since this recent construction.

Interstate safety modifications have been frequently utilized as safety projects in Georgia. This one covering 54 miles on I-85 in north Georgia, through five counties, saw a reduction of average annual fatalities from 16 to three after completion of the project. Mainly, motorists have been running into fixed objects, going between twin bridges, and are not properly redirected through guardrail attachments.

## TOPICS AND SAFETY

Our TOPICS and safety work have addressed the largest number of individual locations where problems of hazard or congestion exist. During fiscal year 1975, over 600 locations were treated with improvements by signalization, intersection channelization, reversible lanes, turn lanes, street lighting, signal systems, pavement markings including plastic and raised pavement markers, skid resistance, and improved signing and signal displays. This is the program directed to urban areas where problems in Georgia are at a maximum. While the state has enjoyed a substantial decrease in fatalities in the last several years, this reduction has not been so apparent in the urban areas. Before 1975, the TOPICS programs were directed mostly to those urban areas over 50,000. Since its initiation, three of those seven areas have already begun to show a definite decline in their accident and fatality pictures. These are Columbus, Atlanta, and Albany, Georgia. However, traffic accident hazards in the remaining four metropolitan areas and the hundreds of smaller urban sections of the state have continued to amass alarming numbers in the traffic accident picture. This is indicative that more of this type of work, on a cost-effective basis, will be the key to reversing this trend throughout the state. For example, let's examine some of these projects.

Figure 4 shows a project in Atlanta on Memorial Drive (S.R. 154). A reversible lane was created with the provision of overhead signal modernization and minor widening. The project was accomplished for \$97,000, and due to the reduction in travel times, accumulated a first-year benefit of approximately \$140,000. Further, an accident reduction of 25 percent was experienced when the one year before and after count was reduced from 220 to 165.



Figure 4.

In Chatham County, nine locations were grouped in a project, costing \$264,000. This widening, resurfacing, channelization, and signal modernization produced a first-year benefit, nearly paying for the cost of the project at \$205,000. The accidents were reduced over 50 percent with a one-year before and after reduction from 273 to 136.

In Columbus, we have apparently been able to record a significant improvement in accident experience due to coordination of traffic signals on Macon Road. This signal system was accomplished for \$115,000 and has registered reductions in accident experience, especially at critical midblock locations. The average overall accident reduction of 15 percent was not as impressive as the record of high accident experience at crucial midblocks. For example, at Midtown Drive, an unsignalized intersection, monthly accidents dropped from 11 to 3 (73 percent). This has greatly improved efficiency of use for this 25,000 vehicle-per-day traffic corridor, vital to the city commerce.

#### MAINTENANCE BETTERMENTS

This work has included adjustments for signing, channelization, pavement markings, flood control, passing lanes, turn lanes, shoulder improvements, and emergency signal work including special traffic control of overspeed, underspeed, and overheight detection systems. For the most part, these are our rural projects comparable to the efforts accomplished in TOPICS and safety work noted above. Since most

of the principal traffic arteries in this rural environment are on the state system, many of the most serious problems have been given attention, and that is reflected in substantial reductions in hazard for those areas. Georgia's peak fatality experience was recorded in 1973 when 1,912 people were killed in auto accidents. This compares with 1,508 recorded in 1971 and 1,557 recorded in 1974. Of significance, however: in 1971, 1,255 of the 1,509 occurred in rural areas, whereas in 1974, only 1,064 of the 1,557 occurred in rural areas. Consider some examples of this work.

Here are three representative projects. The first is in Baldwin County involving the channelization of an intersection at S.R. 24 and S.R. 22. In the year before this work was accomplished, ten accidents, eight injuries, and no fatalities were recorded. In the one year since the work, not a single accident has been recorded. The project cost only \$1,000. In Walker County, 33 accidents, 14 injuries, and three fatalities had occurred in a ten-mile sector due largely to the loss of control from bad shoulders. The shoulders were paved at a cost of \$22,000, and in the one year following the completion of the work, nine accidents, five injuries, and two fatalities were the result.

Our passing lane program is typified by a project in Stephens County on S.R. 12. (See Figure 5.) Here a climbing lane was constructed for a mile and a half in length at a cost of \$41,000. The



Figure 5.

accident experience registered a decrease from 14 in the year before the lane to two after the lane. However, of equal importance was that six injuries and one fatality before the advent of the climbing lane was reduced to no fatalities and no injuries afterwards.

## OTHER SAFETY IMPROVEMENTS

This work includes improvements that have been accomplished on our interstate travelways, as well as the programs addressed under the Title II portion of the Highway Safety Act. That is, programs that address railroad crossings for active or passive improvements, pavement marking demonstrations, roadside obstacles, high hazard improvements, and safer roads demonstrations. Most of this work in dollar volume is accounted for under the Title II programs. Representative of the type work accomplished are projects like our recent treatment of the U.S. 41 interstate travelway connecting the uncompleted links of I-75 north of Atlanta. This project registered a decrease from 34 fatalities in 1972 with 1,271 accident occurrences to a 1975 year-to-date experience of five fatalities and 449 accident occurrences. The type improvements registered included median guard-rail, turn lanes, pavement markers, special treatment of additional superelevation on a particular hazardous curve, the addition of traffic signals at key locations, and the use of special effects signing for this corridor. (See Figure 6.) The U.S. 41 interstate travelway connecting



Figure 6.



the uncompleted sections of I-75 was 31 miles long in 1972. You can see that its wide median and exceptional condition could lull some travelers into thinking they were still on the interstate. In fact it did. Tragically, 34 fatalities were recorded on those 31 miles. In an attempt to get public attention and change this operating environment, the actions described above caused major reductions in the user characteristics of this road. In 1975, under the same traffic volumes, five fatalities were recorded.

The railroad crossing problem in Georgia is of significant importance. In 1974, an all-time high of 66 fatalities were recorded in highway/railroad grade crossings. It was not coincidence that only 17 crossings were identified as safety hazards and provided bells, lights, and gates for active protection during that year. In fiscal 1975, however, the picture began to change drastically, and, since then, 214 active crossings already have been protected in a manner similar to that shown here. (See Figure 7.) The results are indicative of this type of work activity. We recorded 24 fatalities in car/train collisions as compared to 171 that were recorded 1972-1974. Those crossings that cannot be provided immediate attention with lights, bells, and gates are provided other controls. For example, this crossing near Milledgeville, Georgia, was provided street illumination since the only train activity was at night and since several fatalities had been recorded. Ironically, but also tragically, before these lights could be erected, two individuals



Figure 7.

on two successive Saturday nights ran into the side of the same scheduled train, with fatal injuries resulting in both cases. Most of the other critical crossings (1,500 during 1975) have been treated with passive controls such as signs and pavement markings.

## DRIVEWAY CONTROLS

The effective control of driveways has proven a significant benefit in Georgia. (See Figure 8.) While there is much work yet to be done, there are indications that accident experience can be reduced more than one-half in those areas that have defined points of ingress and egress through driveway control. For instance, an example in Clayton County with curb control compared to Upson County without curb control, under the same 8,000 vehicles per day, produced annual accident experience of nine in the first case and 20 in the second. Sampling the work that has been accomplished in the state and computing the rate of accidents per 100 MVM, we find that the accidents tend to be below the average throughout the state for sections that have controlled drives and more than twice the state average for those sections not having driveway controls. (See Figures 9 and 10.) Thus, to not use driveway controls as an effective tool for improvement is to negate an important asset available for the regulation of partial access control.

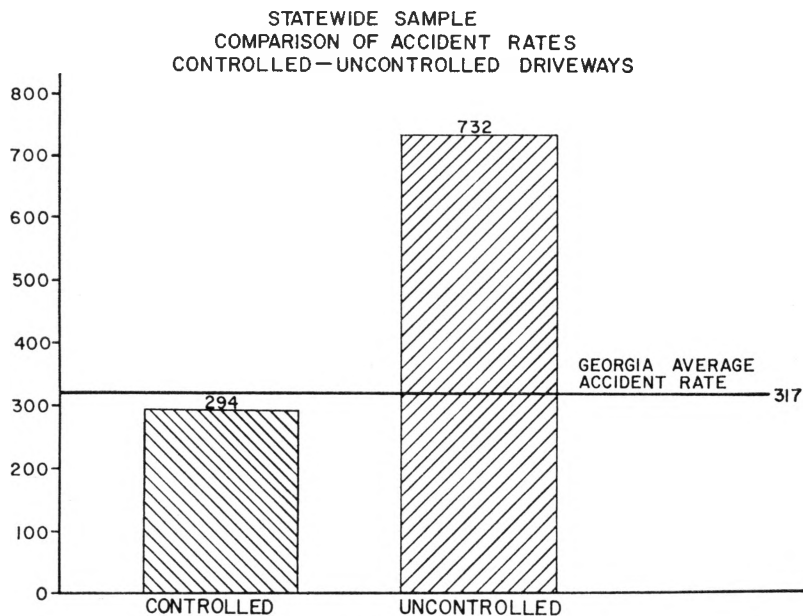


Figure 8.

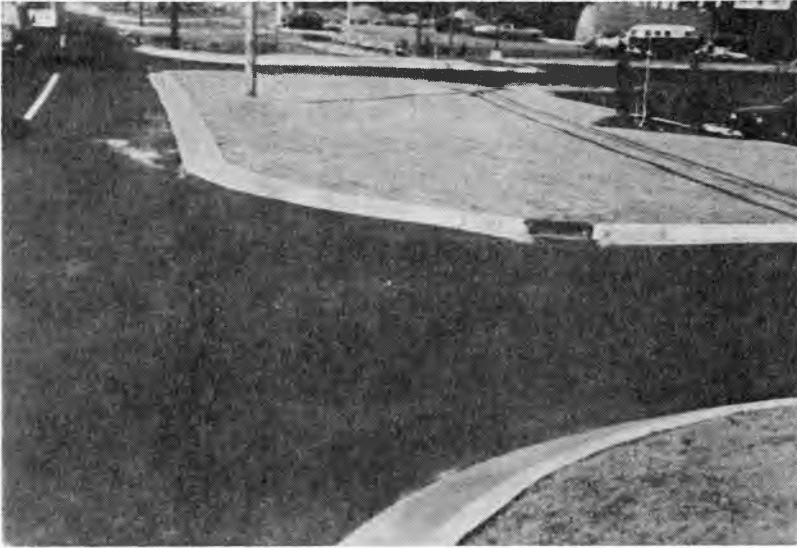


Figure 9.



Figure 10.

## CONCLUSIONS

I cannot categorically state that earmarking money for safety is the only means whereby traffic safety improvements will come about. I can state that there does appear to be a direct relation between

the timing when some safety funds were earmarked and the change in tide to register improvements in highway safety. Certainly, earmarking federal funds will lend a tremendous boost to highway safety. The ability for a direct payoff in the improvement of highway safety can be seen through unbiased eyes that examine past results. I would humbly submit the proper prescription to anecdote our current traffic ills is for more of the same—traffic engineering programs directed to the heart of the cancer. Earmarking funds to representative areas of the traffic safety problem can do no harm and can potentially accelerate the ability of this country to correct one of its largest social ills—the traffic safety hazard.

As we look ahead to a changing economy, political pressure, and public demand, certainly we can see insurance to our highway safety effort will be increased by earmarking funds in a manner experienced with TOPICS, Title II, and Highway Safety Program areas. This approach will shield us from the human factors environment that push in the direction of least resistance. Each day now, we see increasing demands for reduced administrative cost (PE and design costs are nearly as high for a TOPICS project as a multimillion dollar road), less new funds available for the future facility (building that long-range commitment for a four-lane road), and other complications on the social, ecological, political, and economical battlefield. All of these are valid pressures which cause it to be in our best interest as traffic safety engineers to dispel negative thoughts regarding the earmarked money myth.