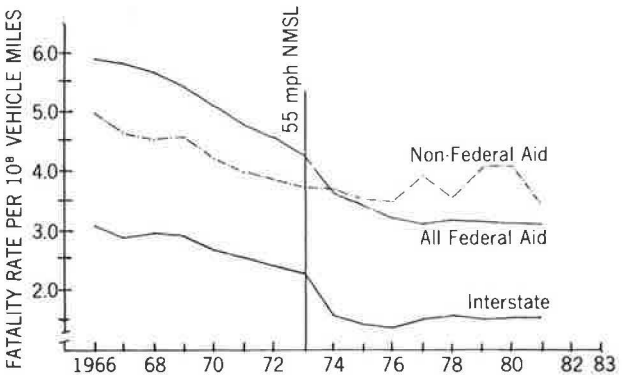
At the first meeting, committee members suggested some new avenues of approach and other sources of information not yet tapped. The committee will continue to refine its estimate of the speed limit's impact on highway fatalities both at the time it was introduced and in the present highway travel environment. To the extent possible, other factors influencing highway safety will be quantified to help put the limit's impact in proper perspective. The committee is also gathering data on highway speed trends to better assess both the relationship between enforcement and compliance and the relationship between speed and overall highway travel safety.

The committee is also reviewing Canadian and European experiences with speed limits. West German fatality rates on its autobahn are approaching those on the U.S. Interstate despite much faster driving speeds in Germany. Apparently more widespread use of seat belts and a well-developed system of emergency medical care are important reasons for Germany's success. The committee is also working to improve its estimates of the money and time costs and benefits of going 55 mph, and to update energy impact projections to reflect slower driving speeds given today's motor vehicle fleet. Finally, the committee has decided to assess the statistical validity of the speed-data-adjustment techniques now used by the states.

Figure 2. Fatality rates for federal-aid and non-federal-aid highways, 1966-1981 (Source: FHWA).



Ultimately, the committee plans to estimate the likely consequences of alternative policies relative to national maximum speeds. Based on this analysis, it may offer recommendations on appropriate limits, federal and state rules, enforcement policies, or other aspects of the national speed limit.

Atlanta's Freeway: 'Like Building a Mountain Before You Can Notice'

ARCHIE C. BURNHAM, JR.

In the early 1970s, the Georgia Department of Transportation conceived the idea for a massive rebuilding of metropolitan Atlanta's freeway system. As first envisioned, the program was mind-boggling in many respects—its projected costs, financing methods, development sequence, and construction techniques. Now that the project is heading toward the final stages (all contracts should be let by 1985), a brief review of those elements of traffic operation that were necessary to assure the project's success is warranted.

METHOD OF CHOICE

Of the three traditional methods available to rebuild an existing highway, the method selected for Atlanta involved a modern-day experiment in maximizing efficiency to the traveling public. Many rebuilt major urban freeways have been completed by closing the existing section to the public, transferring the traffic to parallel routes, and giving the contractor exclusive jurisdiction in the corridor to be rebuilt. Some major urban freeways have been reconstructed by placing both directions of travel on one side of the median and turning the other side over to the sole jurisdiction of the contractor for rebuilding.

The method chosen in Atlanta was to rebuild the facility under traffic, with a commitment to maintain two lanes of traffic in both directions at all times and to separate the conflicts of construction from peak-hour traffic flow. Many critics predicted that this technique was not workable, cost effective, or tolerable by the public, but the results speak for themselves. In fact, the public has come to appreciate that the rebuilding of Atlanta's Interstate system on its existing location is a mammoth road building operation that became the figurative "mountain" before it was even noticed. This was because the construction technique kept traffic congestion from increasing. Operating speeds were not reduced, except in short, publicized intervals for specific operations, and traffic accident experience held its own. Figures 1, 2, and 3 illustrate the method chosen in Atlanta—maintaining traffic flow while proceeding with construction.

Feature

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Figure 1. I-75 at the Chattahoochee River: bridge widening while maintaining two lanes of traffic in each direction. (Photo by Randy Hallman)

Figure 2. I-85 and I-285 interchange in northeast Atlanta: ramps relocated to allow construction of supports for new interchange ramps. (Hallman photo)

Figure 3. I-285 and Riverdale Road interchange: widening while maintaining traffic flow. (Hallman photo)

Figure 4. I-75 and I-285 interchange in northwest Atlanta, a high-frequency truck accident area. (Hallman photo)

THE ATLANTA ENVIRONMENT

It should be noted that this undertaking will be accomplished in a metropolitan environment of 2 million people within a construction time frame of less than ten years. Let's look at the facts.

Prior to construction, the Atlanta freeway system was limited to four lanes carrying more than 100,000 vehicles per day and experiencing some 5,000 accidents, 38 fatalities, and 1,640 injuries annually. Operating speeds were recorded at 58 mph during non-peak hours; they dropped to 20 mph for a 1-hour time period during the afternoon and morning peak periods.

Because the roadway design was established right after World War II and initial construction was completed in the early 1950s, the road system proved deficient in meeting the needs of the 1980s, with its lack of acceleration and deceleration lanes, improper grades, curvatures, bridge widths, etc. Even some of the newer facilities around the periphery of Atlanta were quickly outdated by the tremendous economic boom enjoyed by Atlanta as families commonly went from one vehicle to four, and industry, housing, schools, and commerce increased.

Atlanta's accident picture was further complicated by median-crossing accidents of serious magnitude. Strong fears prevailed that an already serious problem would surely get worse with complications generated by rebuilding the road on an existing line under traffic. These fears never materialized, however, due mainly to close project supervision and the use of effective traffic control plans.

CONSTRUCTION PHASES

The first decision made was to reconstruct lighter traffic density areas around the perimeter highways in order to offer greater capacity to discharged traffic volumes from the metro area. The first project reconstructed was I-85 from I-285 to S.R. 316 in Dekalb and Gwinnett Counties, a distance of 10 miles. The second project was undertaken on I-75 from I-285 north to S.R. 5, a distance of 9 miles (see Figure 4). Work was then initiated on I-285 between I-75 and I-85, a distance of 13 miles. With this sector of the hub in place, other projects were soon initiated to provide the necessary connectors. (Currently, the only major remaining section to be let for construction is the core area of

Figure 5. I-75 and I-85 interchange, Brookwood. (Photo by D. Mills)

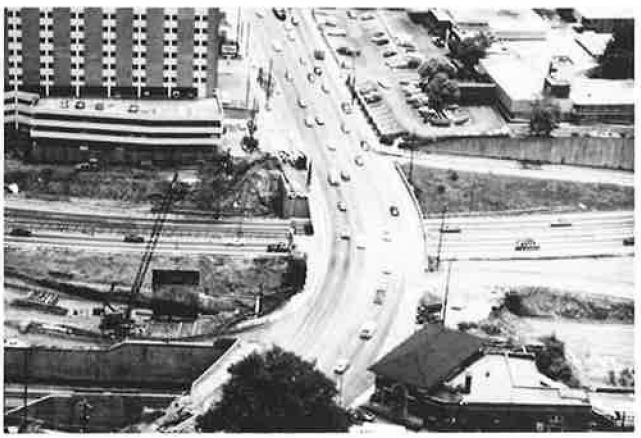

Figure 6. I-85 and Peachtree Street, Brookwood Station. (Hallman photo)

Figure 7. I-85 and MARTA cross-over, tunnel entrance, northbound on-ramp from Peachtree Street, and the new southbound off-ramp to Peachtree Street. (Hallman photo)

the downtown connector.) This total construction effort has addressed 120 miles of freeway, transforming an existing four-lane divided facility to one that provides at least eight lanes and, in some concentrated areas, as many as ten lanes. The concept made maximum use of the surface streets. A positive end result began to materialize in 1981 when almost on a monthly basis, as stages of work were completed, more and additional relief was realized by the traveling public. Even now, traffic-congested travel times have been reduced to a maximum of 45 minutes into and out of the city in both the morning and late afternoon peak periods, and average operational speeds in the peak hours have been increased by 10 mph. Accident experience has maintained an even keel, with a very small percentage related to construction vehicle activity.

SURVEILLANCE

Recognizing the delay and potential for accidents that can be attributed to a stalled vehicle or minor accident blocking one or both Interstate lanes, a freeway surveillance team was established to patrol I-75/I-85 from 6:30 a.m. to 6:30 p.m.

The primary patrol area was from MARTA's Civic Center Station north to the Brookwood Station, then north along I-85 to North Druid Hills Road. While patroling the primary area of the Interstate, communications monitored included AM radio station traffic reports, CB radio, and Georgia DOT construction and maintenance band radios. The team goal was, and still is to a lesser degree, to locate any traffic obstruction and take appropriate action to have it removed. The team also will seek out any operational or safety problems and either get them corrected or bring them to the attention of the State Traffic and Safety Engineer. One specific traffic safety measure initiated as a response to the operating characteristics and proposed new alignments for traffic during various stages of construction is the warning light display, located northbound on I-85 at the I-75/I-85 split (see Figure 5).

Due to stage construction, the two lanes of I-85 drop off sharply just after the I-75 split, and then curve sharply to the right, closely following a high retaining wall. The department was concerned that if congestion, a stalled vehicle, or an accident would stop traffic at the low point of the roadway where it curves around the retaining wall, vehicles taking the I-85 split would not be aware of them until it was too late to avoid collision. Two detector loops were then installed in each northbound lane to detect stopped or very slow-moving vehicles. Double indication amber lights flash when one of the detectors senses a stopped or slow-moving vehicle. The warning lights are located at the top of the steep grade, which obscures the view of approaching motorists.

Another specific action taken as a result of this surveillance was the lengthening of the ramp from southbound I-85 onto northbound I-75 to allow storage of vehicles waiting to make this movement, which is controlled by a "YIELD" sign. This queue of vehicles was backing out onto the right lane of southbound I-85. After lengthening this lane to the Peachtree Street Bridge, traffic rarely backed up into the southbound lanes of I-85. (See Figure 6.)

THE COST

How much has it cost to provide traffic control and/or traffic safety modification measures? Almost $7 million has been spent for traffic control—1 percent of the more than $700 million let to contract to date.

Figure 8. I-85 south of Monroe Drive: traffic on existing alignment, which will become an extension of US-23 (Buford Highway). (Hallman photo)

This work is ongoing amid booming traffic growth in Atlanta, especially in parallel corridors. For example, traffic increased by 35 percent on Peachtree Street from 1980 to 1983 and by 20 percent on Spring Street during the same period. How much of this increase is due to growth and to diversion is not possible to know, but it can be safely assumed by observing traffic flow that some traffic has chosen alternate routes. Mainline freeway flow still exceeds 140,000 ADT; so most of the increase is speculated growth.

How do you convert a molehill to a mountain while few people notice? You start by staging the work with nonconflicting activities, switch traffic from old sections of roadway to newly built improved sections (see Figures 7 and 8), maintain high standards of safety to employees and the public, maintain the same number of lanes, and sequentially open additional lanes as construction is completed. You break the entire project into hundreds of bite-sized sectors, coordinate and control quick completion, and provide a better travel environment for the public on almost a daily basis. That's when people notice!

Private Initiatives Spark Reforms in Public Transportation

C. KENNETH ORSKI

Although, historically, the private sector was the principal sponsor, financier, and operator of public transportation, it largely abandoned this role during the last 20 years. By the early 1970s, virtually every urban transit system and every aspect of urban public transportation, including its construction, financing, and operation, were in public hands.

Now, under the influence of changing economic and political conditions, the pendulum is swinging back. Federal dollars have become scarcer, and local budgets have become increasingly constrained because of rising demands for services, local tax limitations, and public resistance to new spending initiatives. Efficiency has become an acknowledged goal of public management. Public opinion is recognizing that there are practical limits to how much money government can devote to local transportation, and that the private sector must assume a share of the burden. While this conclusion was reached with varying degrees of reluctance or enthusiasm, the remarkable thing is that few people dispute the need for closer public/private cooperation any longer.

The private sector has come to understand that it must, in its own self-interest, assume a more active role in dealing with local transportation problems. The business community realizes that it cannot ignore the health of the communities in which it operates, and that a well-functioning transportation system is essential to that vitality. Land developers, anxious to protect and enhance their real estate investment, are increasingly prepared to share in the cost of necessary transportation improvements. Private transportation operators sense new opportunities in the new, deregulated environment, and are moving aggressively to exploit the fast-growing market for private transportation services.

Local government, for its part, has an equally strong motivation to seek expanded private-sector involvement. By allowing the business community a greater voice in local transportation decisionmaking, public officials increase the likelihood of private-sector support and gain an influential ally in their efforts to mobilize public opinion behind new

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