Traffic Engineer–Official Contact
(Cities of Over 100,000)

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This paper deals with the actual experiences of a traffic engineer employed in three different cities of over 100,000 population. In two of the cities, the traffic engineer was the first city traffic engineer. In the third city, he was the second traffic engineer employed. Furthermore each of the three cities had a different type of government.

The first city was Tulsa, Okla., a city of over 200,000 population. The employment was the result of the recommendation of a consultant engineer who had been called in to help determine the city's traffic needs. The new traffic engineer, a new graduate of the Yale Bureau of Highway Traffic, was employed by the Commissioner of Fire and Police, and assigned to the Police Department under the Captain of Traffic.

Tulsa had a mayor-commissioner form of government, all being elected to office. Many positions were filled by political patronage, hence, the new traffic engineer had to fit into the organization in an unassuming position and attempt to prove himself in the midst of politicians and veteran police officers. After 18 months in this position as traffic engineer under the Captain of Traffic, the Chief of Police and the Fire and Police Commissioner, the traffic engineer succeeded in being reassigned to the Commissioner of Streets and placed under the Director of Public Affairs (Director of Public Works). It was in this new assignment that the traffic engineer began to function as he should and find a place in the city organization.

The official organizations with which the traffic engineer had to deal were the City Commission, the commissioners individually, the Director of Public Affairs, City Departments, the Planning Commission and individual politicians.

The second city was Evansville, Ind., a city of approximately 130,000 population located in southern Indiana. The Mayor and City Council were elected with the Mayor serving full time as the Chief Executive. The Mayor did not officiate at the weekly council meetings, but rather a President of the Council was elected by the other councilmen for this purpose. All matters of business were submitted through Boards or Department Heads to the Mayor for his presentation to the City Council. This did not usually occur in a public meeting, but rather in a work session prior to the regular council meeting.

Evansville had a Board of Public Safety, a three man citizen board which supervised the activity of the Fire, Police and Traffic Engineering Departments. While their authority was limited, their recommendations were usually followed by the Mayor and the City Council.

In addition to the official Board of Public Safety, there was an official group known as the Mayor's Traffic Safety Commission. While this organization may appear cumbersome, in actual practice many fine accomplishments were made in a relatively short time, with the support of these two official bodies.

The third city served was Corpus Christi, Texas, a rapid growing city of approximately 160,000 population located on the Gulf Coast. Corpus Christi was growing and developing in shipping, industry, ranching, farming and oil production.

The city had evolved a strong Council-Manager form of government with a capable City Manager and qualified Department Heads. The traffic engineer was employed as a department director with equal department status and given all the traffic engineering functions.

This city government functioned about as ideally as could be desired. The elected Mayor and City Council confined their activity to policy and approvals. The City Manager ran the city through his department heads.

CASE HISTORY NO. 1
(Size of City—200,000)

The Problem

This rapid growing city was being choked with traffic congestion in the CBD area. The merchants were complaining, the public was demanding relief, and the Police Department and City Officials were at a loss as to just what to do.

The streets were congested to the point that traffic could hardly move, especially during peak hours. Customers were refusing to come into the area, and workers were finding it hard to get into the central core area to work. Relief was a necessity. People were getting desperate, the time was right for a progressive program, but what would it consist of? Who would initiate it? Who would pay the bill? These and many other questions were being asked. Where were the answers?

In an aroused situation, at least two basic premises must prevail: (a) the analysis of the situation should be correct, and (b) the program should bring effective relief.

Proposal

Two programs were proposed at the same time as the result of aroused citizens serving officially as a Citizens Traffic Improvement Committee.

1. One-way business streets, and
2. All rolling traffic 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. (a peak-hour parking restriction).

The attitude of the city government had been somewhat passive. They had no traffic engineer, nor were they trying to employ one. The official city did recognize a need but lacked leadership in identifying the problem, let alone solving it.

The official committee was appointed to study and identify the problem, and to make recommendations for a solution. Fortunately the "right" people were selected for the committee and things began to happen:

1. A traffic engineering consultant was engaged to analyze the problems;
2. The committee recommended the employment of a full-time professional traffic engineer;
3. The committee initiated a program for traffic relief in the CBD;
4. The committee initiated a program of citizen support and information; and
5. The committee supported the relief program through official channels, the City Commission and with the general public.

The consultant made a brief, but impressive analysis of the needs and suggested definite action for needed traffic relief. The committee took the recommendations and saw to it that they were adopted and carried out. They overcame opposition by convincing both official and non-official groups that one-way streets increase capacities, increase safety, and improve operations.

The new traffic engineer entered into this project by aiding in the details of furnishing factual data, engineering the project, and by aiding in the general selling of the proposed traffic relief measures to merchants, city officials, and citizens in general.

The desire for relief from congestion in the CBD far outweighed the opposition. The Citizens Traffic Improvement Committee acted as a buffer between the merchants and the city officials, and were also effective between the traffic engineer and the public on the one hand, and the City Commission on the other.

Politicians in office are often unacquainted with methods used to solve technical problems. Often they must be educated along with the general public in methods and techniques necessary to solve major problems. In this particular case, the traffic engineer had to work through a maze of officials and committees to get to the point of

action. A traffic engineer working under police supervisors to accomplish a sweeping change of travel and parking habits for thousands of citizens, found it hard at times to carry through to the ultimate pre-calculated results.

The recommendations included four one-way pairs of streets on each side of the CBD with "all rolling traffic" on all CBD streets during peak hours. This was quite a project to install at one time. It had to be effective and produce results for the new traffic engineer who had been left with the installation and final selling to the people. The signs had to be fabricated and installed. Street markings had to be installed and traffic signals modified.

There was outstanding cooperation. Interest was high for the proposal. The skeptical were a bit apprehensive, but agreed to go along and see if the proposal would work. Many were on hand the first morning the one-way streets were opened to traffic. They were a success from the very start and the citizens committee, the city officials and the new traffic engineer had succeeded in successfully promoting the project.

In review, the key to the project was that the official Traffic Improvement Committee was willing to accept responsibility for the project. Second, the city government was willing to accept the recommendations and give official approval with necessary ordinances and funds. The traffic engineer by this time, had developed the confidence and support of his program and had educated those involved to its benefits. The project succeeded because of cooperation and mutual confidence among all concerned. After one successful project, the succeeding ones became easier to initiate and install.

CASE HISTORY NO. 2
(Size of City—200,000)

The Problem

Property along an arterial street had been zoned for business and offices, generally one lot deep. If the lots faced a side street, only the 50-ft lot was thus zoned. The case at hand was a doctor's office located on a 50-ft wide lot lying parallel to the arterial street. Parking was at a premium, and off-street parking was badly needed. The doctor purchased the residential zoned lot next to his lot and the second lot from the arterial street. He applied for re-zoning so the lot could be used for parking for his office. The request was denied by the Planning Commission.

Proposal

The traffic engineer who was trying to clear the arterial streets of parking congestion supported the doctor in his appeal and decided to appeal the decision and permit use of the lot for parking. He felt so strongly that parking would have to be extended into the residential area near such arterial street development, that he supported the doctor before the City Board of Zoning Appeals, and later in District Court. The court decided in favor of the doctor and overruled the Planning Commission.

The net result was that the city zoning ordinances were amended to allow parking for businesses adjacent to residential zoned areas, provided proper screening, lighting control and policing were incorporated.

The traffic engineer had taken issue with the Planning and Zoning Commission, the Board of Zoning Appeals and appeared as a witness in District Court to help provide adequate off-street parking for patients, thus, cleaning the arterial street for better traffic movement.

CASE HISTORY NO. 3
(Size of City—130,000)

The Problem

The existing signal system was an outdated simple double-alternate system with absolutely no flexibility. All traffic moved at the same pace, peak and off-peak, night and day. Pedestrians had to guess when to walk, and the narrow streets were clogged at all hours of the day. The merchants were desperate because of the deplorable traffic

situation. Many traffic improvements were needed. Very little had been done before the signal system was modernized, and many other improvements would obviously have to follow.

Although the general public realized there was a need for improvements, they were somewhat complacent and had accepted the bad situation.

Proposal

It was the Mayor's Traffic Safety Commission which had been organized as an official organization, who not only had to identify the problem, but also to convince those in authority that adequate relief measures should and could be taken.

The traffic engineer, working with the commission, was able to propose a program for traffic relief: a new signal system for the CBD. While he served under a Board of Public Safety, his real program support came from the Mayor's Traffic Safety Commission.

The recommendation was made and the decision was reached to modernize the signal system. The interested people and organizations had to be convinced that the project, along with the cost, was justified. The Board of Public Safety was ready to support the proposal. The Mayor was not opposed to improvement, for his platform at the time of election, included traffic relief. The real selling came with the City Council when they were presented with a proposal for 56 completely new radio-controlled traffic signalized intersections with pedestrian indications. The cost was about $300,000, and the radio coordination was a completely new concept in traffic signals.

The first success came when the funds were provided for the project. Achieving this goal was difficult and time consuming, and required private and public contacts, day and night, in public meetings and private sessions. It was difficult to convince some that the benefits to the community would equal the cost. To these and to a few of the councilmen who were hard to convince, there had to be a thorough job of selling three basic things: (a) that the need was equal to the cost, (b) that confidence in the traffic engineer's proposal was warranted, and (c) that the proposal would bring the desired relief. These three points were used to convince the majority, and they produced an affirmative vote on the request for funds.

After the approval of the funds came an early approval of the new type of equipment. Although the radio coordination of traffic signals was being tried in isolated cases, this was the first complete CBD system so equipped. There were 56 totally new installations all equipped with double signal indications, radio receivers and pedestrian signals.

The actual installation of the signal equipment at the intersections was enough to gain public support. The public was so pleased with what they saw that they were sold on the project long before the system was ever actually coordinated and programmed to really aid traffic flow. Suffice to say, the program and project were well accepted. Apparently, the public and the press alike were proud to be a part of a new and different traffic control system, coordinated with FM radio tones and programmed from a master controller located in City Hall near the office of the traffic engineer.

All had been accomplished because a commission, a board, a mayor, a council and individual politicians had been convinced that a program of relief was needed, the proposed signal system would do the job, and the general public was willing to pay for the improvements.

CASE HISTORY NO. 4
(Size of City—130,000)

The Problem

The Fire Department Headquarters and No. 1 Fire Station were located on a one-way street, down stream from its intersection with another one-way street. The only possible exit for the fire equipment was to move one-way, and that one-way street led directly into the CBD. The Chief of the Fire Department insisted that he be allowed to move either direction on the one-way street. To move on the one-way street only, he would have to travel three blocks through heavy business traffic to get to an opposite flow one-way street.

Proposal

It was proposed that special signal controls be installed. A simple relay and flashing unit was installed in the traffic signal controller with controls located in the Fire Department. The firemen actuated a time delay switch which turned all the signals at the intersection to red. By the time the equipment was able to enter the street, the intersection was clear and the firemen could move with traffic on the cross one-way street to the companion one-way street one block away. Traffic moved safely and normally on the one-way streets.

CASE HISTORY NO. 5
(Size of City—160,000)

The Problem

This city had grown up around a fishing village which had developed into a seaport of no small proportion. World War II had made it a major training area for Navy pilots. It was a city of contrasts, having both old and new areas, both the progressive and conservative; those who wanted to grow and expand, and those who were satisfied with things as they were.

If the city was to progress as a center for shipping, farming, ranching, oil and industry, there had to be an effort to keep pace with transportation planning for the area. An expanded population in an expanding area requires traffic modernization. Some changes require large sums of money, while other changes are relatively inexpensive.

Proposal

A proposal was made for a high-level bridge because of the following conditions.

With the coming of shipping to this city, came an inland waterway, ship channel, and turning basin. This inland waterway caused a conflict with surface transportation, both the automobile and the railroad. The first relief measure had been the construction of a bascule bridge at surface level. Invariably the bridge was raised for the movement of water transportation at the peak hour of surface traffic.

A technical committee was appointed by the various governmental agencies to attempt to work out the details for relief measures which would allow free flow of water, rail and highway traffic without delay of any. At first, the task seemed insurmountable, but as official bodies worked together, the objective was accomplished. The technical committee represented the City, the navigation district, the county, the railroads, the state highway department and the Corps of Engineers. The details of relocating a railroad, the cost of the removal of the old bascule bridge, the cost for land for interchanges at each end of the high bridge, proposal for two railroads to enter the city over the same line, a new lift span to replace the old bascule bridge far inland were some of the complicated problems with which the committee dealt. The objective, however, was clear and the officials of the official organizations had pledged themselves to complete the job.

This project, when completed, represented an expenditure of over 24 million dollars, and involved every level of government from the Congress, down. All shared in the expense, all had to be willing to compromise at many points. Bond issues were passed by both the City and the County. The navigation district sold revenue bonds, the State and Federal governments both appropriated money. The three railroads were the problem—they were the least interested in the change. Their costs were small compared with others. Their main part in the total project was to be willing to relocate and submit to a program of cooperation. In time, they did cooperate very well with the total plan. This was an outstanding example of cooperation by many agencies to accomplish a common objective. Within a period of less than four years, a six-lane, high-level bridge (150-ft clearance above mean high tide) and a widened dredged ship channel (600 ft wide and dredged to 35 ft, mean low tide) had been constructued. The railroad crossing had been moved about two miles inland. Many concessions had to be made, local business was affected, but the total overall economy of the community

surged ahead as never before. They had proved to themselves that they could accomplish much by united effort, a willingness to carry a fair share of the costs, and to give and take as problems would arise.

The traffic engineer was a part of this total project in cooperation with many others, and was able to see much accomplished to aid in his desire to move traffic and reduce delays in a growing city.

Proposal

As the city grew and began to expand, it developed along arterial streets. While many of the arterial streets had been allowed to develop as business streets, the main north-south waterfront street had been maintained as a scenic, residential thoroughfare. As congestion and delays began to be experienced on the other arterial streets more and more traffic found its way to the free-flowing waterfront street. Naturally, the street soon became overloaded and congested. To get traffic onto the street simple, two-phase fixed time traffic signals had been installed. This added to the problem and traffic backed up; something had to be done.

The traffic engineer proposed to the Traffic Safety Advisory Board that a through lane be provided along the opposite curb to the side streets and allow the traffic on the water side of the street to move continuously with a narrow (1 ft) raised island for protection from the side-street traffic. Traffic was allowed to move into the traffic stream on an actuated green light, while one lane of the two inbound waterfront street lanes was stopped as the side-street traffic entered. The curb lane moved continually and was never required to stop.

This was a simple application of channelization with paint and raised islands and with the use of traffic-actuated signals. The result was phenomenal. The public acceptance was gratifying, and from this simple inexpensive application, the engineer was able to move on to bigger and more effective traffic engineering projects.

This project was proposed to the City Council as a recommendation of the Traffic Safety Advisory Board, and while some thought it would never work, others thought differently, and the project was installed.

Proposal

School speed in some 25 public and private school zones was 15 mph from 8:00 a.m. to 4:00 p.m. As is so often the case, most of the schools were located on arterial streets, hence, the flow of traffic was impeded 8 hours each day. There was a conflict of traffic and students for no more than 1 hour each day. The restriction was covered by ordinance. A school official argued, "It has been this way for years, we have a safe record, there is no need of changing."

The first approach was to attempt to use speed control signs with limited hours for reduced speed, such as, 15 mph, 8 a.m. to 9 a.m., 3 p.m. to 4 p.m. and where necessary 12 noon to 1 p.m. This was met with stiff opposition from those who felt no change was necessary on the basis of the safety record. Realizing that traffic would never be able to move well on arterial streets until the number of hours school zone speeds were in effect were reduced, the traffic engineer proposed traffic signal flashers along with the school zone speed signs, on each side of the school and covering the entire zone. This was immediately accepted by the school official as being more and better traffic control. After an entire school year had passed, the "good" safety record had not changed. The flasher system has continued to work and it is still in effect, thus aiding traffic flow on the major arterial streets.

CONCLUSIONS

Traffic engineers must be first and foremost a public relation specialist, a salesman of himself and his abilities. He must be able to work together with other officials and official groups in an atmosphere of mutual confidence. He must be able to communicate his capability to those desiring improvements.

Some improvements are more readily accepted than others because the public is prepared to pay for the relief measure. Wrong engineering techniques can be applied at this point. The careful traffic engineer will take time to determine the best possible action for the needed relief, then carefully apply the program, watching, analyzing results, and never being quite satisfied until the action brings the necessary results.

In reviewing the techniques of working with boards, commissions, and elected officials, it can again be said that the traffic engineer must be qualified, able to communicate and have confidence in his ability and himself. He must be able to convey that confidence to others. When the traffic engineer has done this, he is ready to perform, to accept the challenge of his position. Boards and commissions are people. They, like the general public, want results. They can be educated to a program of development that the public will accept and support.

The real work with boards and commissions is not always accomplished in the public or official meeting place. Sometimes the most beneficial contacts come in the casual meeting place, planned or otherwise. Sometimes it develops from "small talk" or a carefully planned conference. This is especially true of boards, commissions, councils or other official groups and individuals, where the principals are active, busy community leaders. The importance of these contacts must never be minimized, for they often lay the foundation on which to build programs for the future. They establish the basis for mutual confidence among all concerned.