

Photogrammetry Dispels Suspicion*

JOHN E. MEYER,
Michigan State Highway Department,
Lansing, Michigan

ABSTRACT: *Highway engineers are increasingly aware that the need for good public relations is greater today, as the new Federal Highway Program begins, than ever before in our history. The highway location engineer who undertakes to convince citizens of the need for relocation of a highway must have the most intimate knowledge of the area—more knowledge than any critic with whom he deals in his campaign. Aerial photographs are indispensable as visual aids in his work. The engineer deals with misinformed or undecided citizens, critics who actively seek to postpone or prevent relocation, and public-spirited supporters who do everything in their power to help him. The most important contacts with the local public are informal group meetings. The engineer builds these programs around answering three questions about the local highway situation: what do we have, what do we need, and how do we get it? The large aerial mosaic plays an important role in "selling" the audience on route location. In meetings with individuals or smaller groups, aerial and oblique photographs, 35 mm stereo slides, and artists' perspectives are useful as auxiliary visual aids. In the Michigan State Highway Department's relocation campaigns, photogrammetric materials have been invaluable time-savers and convincing evidence in dealing with the public. Words alone can not sell the highway program; to be receptive, people must be shown.*

PUBLIC relations work will be increasingly important to highway administrators in the next few years. The new Federal Highway Program calls for construction or improvement of thousands of miles of highway pavement, involving work in every state. When a highway department builds, it alters established patterns of business and travel; if the people affected by these changes are not fully informed, they are likely to be curious, disturbed, or even hostile. "Ignorance breeds suspicion," but the public relations worker, in his contacts with the citizens, can erase or dispel this ignorance and suspicion by patient, honest explanation of highway plans and the use of good visual aids.

In my present position as Route Location Engineer for the Michigan State Highway Department, I am very much involved in the public relations field. As consultant on photogrammetric operations for the Department, I am vitally concerned with the use of aerial photographs as visual aids,

both in my efforts to describe the general highway program, and in specific problems of system planning or route location.

Of course these remarks must be confined, out of propriety, to our Michigan activities, but my many conversations with associates in other states evidence that our public relations problems appear to be the same. In discussing this subject with colleagues who have been in the highway engineering field much longer than I have, I find general agreement that the need for good public relations is greater today than ever before in our history.

THE HIGHWAY PUBLIC RELATIONS WORKER

Highway information given in an effort to gain public support must be directed to the people, in their own language. The highway engineer contacting citizens in a given locale must have the most intimate knowledge of the area, property values, local or area planning, and area economy.

* Presented at 23rd Annual Meeting of the Society. Hotel Shoreham, Washington, D. C. March 4, 1957. This paper is a part of the Panel on Photogrammetry in the New Federal Highway Program.

He must know local street and road names, points of historical interest, traffic volumes in current, predicted, and induced types of the commercial and passenger, through and local. In short, he must know more about the area than any critic with whom he deals in his public relations campaign.

He must have answers for the myriad questions posed by the man interested mainly in details of the project's effect on a special parcel of property or a pinpointed location.

He must also be familiar with State design standards for highway pavements and structures, and with statewide planning. The state highway program belongs to the people; the money being spent is theirs. We find that explaining the state program in these terms is particularly successful with public-spirited organizations, such as Parent-Teacher Associations, Chambers of Commerce, service clubs, and church groups.

In organizing a particular public relations program, half a job is worse than none at all. An inconclusive campaign results in reams of correspondence from all around the state, and in hours of dictation in reply. A full 60 per cent of the time of the Michigan State Highway Department Route Location Engineer and that of his associates goes into educating our people in the benefits to be obtained from improving the highway system, and on the importance of their cooperation and support in solving location problems.

This job could not be done without the aerial photograph and its by-product, the photographic mosaic, as visual aids. In our opinion the old proverb, "One picture is worth more than 10,000 words," could very well be revised to "Let pictures do your talking." To us they represent a form of shorthand, indispensable in presenting highway needs.

The Michigan State Highway Department has been using aerial surveying and photogrammetric methods in highway location work for about 30 years. We consider photogrammetry our most valuable source of engineering data. We use it whenever possible, regardless of initial cost, for when an original survey is properly tailored to the requirements, photogrammetry and aerial photos become a multi-purpose tool rather than merely an expendable one-job item.

PROBLEMS WITH LOCAL GROUPS

The average citizen usually appreciates the development of a new highway and seems quite open-minded about location with respect to his own property. Often however, he has heard false rumors of low appraisals and condemnation of property, loss of business and decreased property values. He has uncertainties as to why the route is to be relocated, how the authorities plan to arrive at a new alignment, and how much loss or gain it will mean to him financially.

In most communities, rumors are spread by individuals or groups determined to belittle and condemn the efforts of the location engineer. By a series of petitions, injunctions, or in plain English, "loud talk," they try to delay construction until the project is so urgent from a programming standpoint, that a compromise must be reached on a less desirable route location.

Another group, unfortunately often composed of people who have attained a certain prosperity and importance in the community, are convinced that they know much more, particularly about highway location, than the experienced highway engineer. They are unable to or refuse to think in terms of area economy, highway user benefits, and safety, and the aesthetics of good alignment. As arguments against a highway location, they quote expanded value of personal real estate, speak of having extensive plans for eventual development of the only desirable acreage in the entire area, acreage in which they happen to have extensive investments.

A third group includes the public-spirited citizens, appointed or elected public officials, and county road officers, who do everything in their power to aid us. They are the people who can visualize the benefits to the community resulting from construction of a trunkline bypass, who value the freedom of local traffic circulating freely on streets, without the hazards and congestion caused by trunkline traffic.

We, therefore, have various groups containing most of the people toward which the public relations effort must be directed. They contain "the butcher, baker, candlestick maker, doctor, lawyer, merchant, chief."

The route location engineer deals with these groups in his campaign. He attempts to convince the misinformed citizens of the positive value of the relocation project and

to prove his case to the critics, and to encourage his supporters.

THE AERIAL MOSAIC AND THE LOCAL MEETING

The mosaic, copied on film and reproduced on blueprint, is our standard visual aid in initial discussion with all groups. Since we cannot take the time necessary to plot the control or make the ratioed prints for a controlled mosaic, we have been using the "old-fashioned" stapled type. Through long experience our photogrammetric section has developed the knack of this assembly to the point that we engineers often assign certain accuracies to measurements made on them.

The blueprint mosaic has replaced the preliminary map in our Department. It is the most important exhibit in our Engineering Reports. We believe it to be the best visual aid that we can use. Our Right of Way Division thinks so highly of it as an aid in negotiating details with property owners, that we supply them with five copies of each mosaic project.

Whether it measures 1 by 3 ft. or 3 by 30 ft., as some of ours have, regardless of size or scale, the mosaic provides an indispensable background at meetings, attached to an easel, taped on a wall, or hung from stage curtains. When such a picture is displayed previous to a meeting, we find that the majority of the audience crowds around and starts pointing here and there to various points on the mosaic. We believe that by letting them pinpoint their own property and familiar landmarks, they become relaxed; it takes the steam out of them, and the whole meeting is brought down to a common level.

When the highway project is of such proportions that we should discuss it locally even before starting the route location surveys and studies, we present a blank mosaic, that is, one with no alignment shown. In such cases, our public relations amounts to a "classroom" explanation, with continuous reference to the mosaic, pointing out this public building, that railroad, park, swimming hole, shopping area, subdivision developments, existing trunk-lines, marginal lands, open spaces, and other items that can be seen on the mosaic.

We pose the entire highway problem as follows:

- 1—What do we have?
- 2—What do we need?
- 3—How can we get it?

We find that the first question, "What do we have?" is pretty well answered by the time we finish locating points of interest on the mosaic.

The second question, "What do we need?" is answered by explaining these points:

1. What is the Interstate System, and how does the State Highway System fit into it?
2. What are the design requirements?
3. What is limited access and how is it obtained?

For the third question, "How can we get it?", we return to the mosaic blueprint, using a colored crayon or chalk to sketch in various route possibilities, carefully explaining why we choose this or that area, why we cross this property and not that one, and take this man's house but leave a neighbor's.

We also state carefully at this point, that what we are doing is not a route survey, nor does it even resemble one. Instead feasible route alternatives are being pointed out. However, it is strange that before long, the audience starts to agree that everything appears to "dovetail" into place and looks reasonable. We then realize that the "mosaic picture has done the talking."

When the public relations meeting takes place *during the route location work or after it is completed*, the possibilities are put on the map before the meeting. We discuss each of the route lines, and often we must defend them. A route line used on a map at an initial meeting, somehow gives the idea, "this is it, you take it." Often when we show such a line, we are accused of being prejudiced for it, and immediately find ourselves on the defensive.

We prefer to have two meetings, one before the route reconnaissance survey progresses beyond the exploratory stage, and another when we have all facts and figures evaluated to the point of recommending a definite treatment. In some cases, this latter meeting has been our Public Hearing. However, between these two meetings there should be many sessions with smaller groups, interested in individual, specific problems related to the highway route or a specific projection on the route.

We find that these *smaller discussions can best be handled by using photographic enlargements of 100 or 200 ft. per in.*, upon which the proposed route location can be drawn to show its relative proximity to the

school, hospital, city limits, residential developments, and its effect on street patterns or farm severance. In a number of cases enlargements of photographs showing details of a proposed cattle underpass, have expedited right of way dealings with individual farmers.

OTHER PHOTOGRAMMETRIC AIDS

Aerial oblique and ground photographs are also useful in developing an exhibit. In describing how a fill or a depressed section through a town will look, audiences are sometimes confused when we rely on "talking with our hands", to show these features. From a centerline profile, in many cases determined from a photogrammetrically compiled topographic map, a good line can be established, and by means of the air oblique and/or ground photograph, an experienced "art" squad can depict in perspective a reasonable facsimile of the finished highway facility through the area, showing the remaining properties and their proximity to the highway, possible landscaping within the right of way to disseminate traffic noises, and aesthetic appearances of service roads and structures.

We find a great difference in public reception of an *artist's perspective* as compared to one using a photograph as a base. Using the photograph, the artist can sketch buildings as they actually are, with roofs and dormers, fencing, and other details. The effort is well worth the cost; in several cases, artwork has actually "sold" the proposed highway treatment to a community.

Another item rapidly coming into use is the 35 mm. *stereo camera and stereo slides*. These are especially useful in developing case histories of completed projects as a further aid in showing the taxpayer what the new facility may look like upon completion.

We occasionally set up a *stereo pair and stereoscope* for small groups or individuals visiting our offices to discuss a location problem. In this way, we also demonstrate how accurately we can determine the general lay of their land, find the drainage of their farm, types of buildings, and so forth. They are soon highly impressed by the fact that we can find out as much about their property and their neighbor's as they know themselves, without our even having been in the field.

CONCLUSIONS

The aerial photograph and its end product, developed through photogrammetric methods,

are really our public relations experts. The individual prints in stereo pairs, the photographic enlargements, and the blueprint mosaics carry our story to the public. It is difficult to estimate the time it would take to get our story across without these tools. Words alone cannot "sell" the highway program. To be receptive, people must be shown.

In the Michigan State Highway Department we believe our approach to this problem of "selling" bears good results. By making a thorough reconnaissance survey, intensive detailed study of the route area through stereo analysis of contact prints, and a complete inspection of the aerial mosaic before our public meetings, we can impress audiences with our detailed knowledge of their properties and communities, thus gaining their confidence. They no longer feel that we are outsiders, approaching them with a cold, impersonal outlook on the new highway's effect on their economy and their lives.

In a few cases, our efforts in developing good public relations, have backfired due to certain premeditated actions by opposition groups. Our calendar of meetings with various groups throughout our 83 counties, is quite complete for months in advance, sometimes with several meetings scheduled for the same day in neighboring communities.

This work must be carried out in addition to making the route location studies and surveys needed for a greatly expedited construction program.

Can you wonder then, with this kind of a schedule set up, that we rely so much on the aerial photograph and photogrammetry to dispel public suspicion and that we are always ready to let the pictures do our talking?

MR. PRYOR:

I think you can well understand why Mr. Meyer titled his paper "Photogrammetry Dispel Suspicion." To what Mr. Meyer said, I'd like to add that the new highway law, which he mentioned briefly, requires that hearings be held in all communities affected by highway location. Therefore, a highway department is no longer strictly an engineering organization. It is a combined public relations and educational and highway engineering organization. Photogrammetry is our modern minute-man helping us with such types of work in the threefold tasks ahead of us.