the products that should evolve, who should perform planning, and how it should be financed. Many of the

findings are applicable to system planning for all areas, large or small.

Transportation Action Program

Archie B. Lowe, Local Government Assistance Section, Arizona Department of Transportation, Phoenix

The development of transportation plans and programs that are responsive to community needs is a strong advocate position. This paper presents an approach used in Arizona that, although not new, may be useful in many other areas. This transportation action program is discussed as an approach to the identification of transportation issues and problems (real and perceived) in a small or medium-sized urban area.

The transportation action program (TAP) was conceived in 1974 after many years and thousands of dollars had been spent in developing transportation plans for five Arizona cities having populations of more than 10,000. But after all this effort, money, never-ending meetings, coordination, and frustration, the final products were little more than a fancy plan that had no real meaning or community support.

This is not to say that planning is not good or necessary but that the plans developed were, for the most part, too ambitious and were seldom implemented due to lack of funds or community consensus as to what was needed. It is necessary to work at the level of consideration of whether streets should be striped or whether a yield sign should be replaced by a stop sign or removed entirely to develop the people's attention.

The TAP program is one that evolved from the results of the Federal Highway Administration traffic operations to improve capacity and safety (TOPICS) program and the effort expended in developing transportation plans by using highway and research funds in smaller communities. The TAP program brings together the best of the TOPICS program and transportation planning coupled with community involvement. It provides a program whereby the community is involved at the grassroots level and implementation for the most part is their responsibility.

Planning for transportation in small urban areas has been quite successful in Arizona over the past decade; plans have been developed for Douglas, Flagstaff, Kingman, Prescott, and Yuma. These studies, however, have been somewhat costly in terms of funds and staff needs and, as a result, many communities have not been able to participate. Consequently, TAP was developed by the Arizona Department of Transportation (ADOT) to bring transportation assistance to all communities through a community involvement approach.

TRANSPORTATION ACTION PROGRAM APPROACH

The approach taken in TAP is to use the knowledge available within the community to pinpoint existing problems and to identify future transportation-facility needs to serve existing growth areas and those anticipated by the community. The local news media is included in the program to keep the community informed.

To illustrate how TAP works, let us look at how it was applied in Globe, a community that has a population of 10,000. A bus tour was scheduled to motor along the local streets and observe existing traffic characteristics while discussing possible steps leading to transportation improvements. The team consisted of 25 persons and included city, county, state, and school officials and Chamber of Commerce representatives. The route taken on the tour basically consisted of the major and collector streets as determined by functional use.

After the tour, the team met and discussed in greater detail the problems observed, as well as others in areas not covered, and future growth and its related transportation system.

One of the most important factors to be considered in upgrading existing roads and constructing new ones is that of land use. To be effective, the transportation system must be compatible with the land uses and adequately serve them. Each street performs a primary function—traffic movement or land access and, consequently, becomes part of a total network. Classification of the existing street system by function provides a basic tool for analysis and planning.

Traffic volumes are a quantitative yardstick of the transportation system. In the Globe study, the average weekday traffic data collected early in 1974 by the traffic division of ADOT was used in lieu of traditional desire-line networks.

Thus, land use, street classification, traffic volumes, and the tour comments were woven together, using both local and outside expertise to develop recommendations that would lead to adequate and safe transportation facilities for the Globe area.

Some of the recommendations from the Globe study include the following:

1. Eliminate angle parking as off-street parking becomes available.
2. Perform a detailed engineering study to evaluate the transportation impact of a proposed public school development.
3. Conduct a study to determine the feasibility of a pedestrian overpass.
4. Extend a facility to provide for route continuity.
5. Consider providing left-turn lanes at various subdivisions.

Because little can be accomplished without proper guidance, it was recommended that the suggested improvements be pursued by appointing a coordinating committee to follow through. It was also recommended that a workshop be held one year later to determine the effectiveness of this endeavor.

TAP was an attempt to coordinate transportation ideas and knowledge in the Globe area through direct involvement of individuals living and working in the community. A practical approach was taken in an endeavor to capitalize on the available knowledge within the com-
Various validation studies have shown that synthetic urban-transportation-study techniques can achieve acceptable results when compared with conventional traffic assignments and ground counts. Does this favorable comparison indicate that the trip matrix developed by synthetic procedures reflects actual travel patterns? How sensitive is the assignment to the input data? A sensitivity analysis that used data from the Tyler, Texas, urban transportation study was performed to help answer these questions. Four matrices were assigned to the same network and compared:

1. Assignment 1 matrix—a stochastic trip matrix constrained only to the total number of trips in the study area,
2. Assignment 2 matrix—a stochastic trip matrix constrained to total trips and trip-length frequency,
3. Assignment 3 matrix—a stochastic trip matrix constrained to total trips, trip-length frequency, and trip ends at each external station, and
4. Existing trip matrix—the fully modeled trip matrix.

Analysis of the results from the assignments indicates that, as long as an accurate trip-length frequency is used in generating the trip matrix, the assigned vehicle kilometers of travel will very closely match the counted vehicle kilometers of travel, even when the distribution of zonal trip ends is unrealistic.

As in all urban transportation studies, the Tyler zonal structure reflects the geographical distribution of activities in the urban area. This can be illustrated by subdividing the area into four concentric rings: Ring 1 consists of the central business district (CBD), rings 2 and 3 consist of the remainder of the developed urban area, and ring 4 consists of those zones in the fringe

<table>
<thead>
<tr>
<th>Community</th>
<th>Year of Evaluation</th>
<th>Number of Improvements Identified</th>
<th>Improvements Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Globe</td>
<td>1974</td>
<td>23</td>
<td>10 40</td>
</tr>
<tr>
<td>Payson</td>
<td>1974</td>
<td>18</td>
<td>12 67</td>
</tr>
<tr>
<td>Somerton</td>
<td>1975</td>
<td>8</td>
<td>4 50</td>
</tr>
<tr>
<td>Wickenburg</td>
<td>1976</td>
<td>18</td>
<td>9 50</td>
</tr>
<tr>
<td>Page</td>
<td>1976</td>
<td>25</td>
<td>24 96</td>
</tr>
<tr>
<td>Clifton</td>
<td>1977</td>
<td>11</td>
<td>3 27</td>
</tr>
<tr>
<td>Holbrook</td>
<td>1977</td>
<td>23</td>
<td>17 74</td>
</tr>
<tr>
<td>Nogales</td>
<td>1977</td>
<td>18</td>
<td>13 72</td>
</tr>
<tr>
<td>Marana</td>
<td>1978</td>
<td>28</td>
<td>15 54</td>
</tr>
</tbody>
</table>

Table 1. Evaluation of transportation action program.

Not: As of November 1978.