

MPOs for programming, broadening the definition of TSM to include HOV lanes and traffic control measures, and coordinating the federal and state programs. Further, it is anticipated that the state TSM program will be a major source of local match for the federal program.

- It is also anticipated that, although annual TIPs will still be required, Caltrans will need to make funding commitments several years in advance. Thus, the goal in California is to maximize and leverage all funding sources for the development of ITMS and IVHS.

### **Local Programs**

*Donald W. Dey  
City of Menlo Park, California*

Mr. Dey provided a local perspective on the development of ITMS and IVHS and the use of local funding sources. Mr. Dey covered the following major points in his presentation.

- The definition of ITMS needs to be very broad. Many elements of the local transportation system—including transit, police, and emergency services—should to be included. Further, the link to neighboring systems and the regional network is critical. In terms of management, both the human and technical aspects of the system must be coordinated.
- The first step in leveraging local funds is to identify a problem and the project you want to implement to address the issue. Having defined the project, you need to identify appropriate federal or state funding sources and develop the appropriate applications and supporting documentation. It is important to be aggressive in pursuing these programs. Keep in touch with agency representatives and the requirements of the different funding programs. Maintaining flexibility is also important. This will allow you to take advantage of changes and new opportunities at the state and federal levels. Also, be sure

you can show results for your efforts. Federal and state officials are just like local officials in that they want to see results and benefits from their funding. Thus, you must be able to produce and show results.

- Governmental units, especially at the local level, must learn how to package, sell, and market their proposals. Don't get discouraged if a proposal is turned down. Follow up with the funding source and find out what the weaknesses of your proposal were. Use this feedback to improve your next effort.
- One key element to attracting federal funding is that the project must have the potential for technology transfer, or sharing the knowledge in other areas.
- In terms of local projects in California, a number of funding sources may be available. Potential sources include Caltrans, FHWA, regional and local programs, and special programs such as the fuel overcharge fund. Although each of these alone may not be enough for an entire project, when combined, they provide adequate funding for most projects. Thus, it is important to leverage a variety of funds.

### **Private Sector Participation**

*Alan Clelland  
JHK & Associates*

Mr. Clelland provided the private sector perspective on the implementation of ITMS and IVHS. He focused on the issues associated with deployment of these systems and the funding implications of design/build contracts. Mr. Clelland covered the following major topics.

- The best leverage for obtaining funding is a successful program. If you look at the funding for the early stages of the IVHS program you will see a correlation between the successful projects and where the early funds are being deployed. Thus, it is important to

develop successful projects and then build on this success.

- ATMS and ATIS are critical elements of IVHS. Many of the other IVHS programs, such as APTS and CVO, build off of many of the elements included in ATMS and ATIS.
- The current responsibility for developing ITMS rests with the public sector. The typical deployment approach includes preliminary and final design, advertising and contract award, construction/technical services, system integration, and operational support.
- Three different deployment approaches are often used. These include engineer/contractor, program manager, and design/build. In the classic engineer/contractor approach, an engineering or design firm carries out the PS&E work. Once this is completed, the public agency issues an RFP and goes through the selection process. Typically, the contract goes to the lowest bidder. There are drawbacks to using this approach with ITMS and IVHS. Most of these focus on the fact that ITMS and IVHS projects include a number of advanced technologies that many firms may not have expertise in. Thus, the agency must maintain active involvement in monitoring these projects.
- The program manager approach turns over the responsibility for the total implementation to a program manager. The program manager could be an individual within the public agency, but typically the agency contracts with a private firm for this function. The program manager is responsible for preparing the design and the bid specifications and monitoring the other elements of the process. Typically, the selection of a program manager is negotiated, rather than a low bid process.
- In the design/build approach, a single entity performs all the work. At the beginning of

the process, a relationship is established between the agency and the design/build firm. The firm will design the system to meet the clients needs, will take the preliminary design through to about the 30 percent completion stage, and at this point will negotiate the fee for the remainder of the contract. The design/build firm then has the responsibility to make sure that all the elements are completed on time.

- Each of these approaches has advantages and disadvantages in terms of the time to complete the project, risk, total program costs, and agency resources. The major attributes of the engineer/contractor approach are that it matches the current practice, agencies are familiar with it, it initially guarantees a low bid, and there is only one construction contract to monitor. Major disadvantages with this approach include the lengthy time to implement, the risk of selecting the wrong contractor, potential for difficulty in making changes, and a high agency staff commitment.
- Attributes of the program manager approach include well defined technical responsibilities, qualification-based selection, ease of modification, the potential for significant cost savings, faster deployment, and reduced agency staff time. This approach is being used in some areas. Disadvantages of the program manager alternative include the length of time to implement and unfamiliarity with the technique among many agencies.
- The key feature of the design/build approach is a faster implementation time and the reduction of agency staff demands. The single point responsibility is very clear and cost savings can be realized through the procurement process. The disadvantages of the design/build approach are very difficult to overcome. The political and institutional issues associated with this approach may be difficult to address. Further, the total cost of the project may not be known until 30 percent of the design has been completed. It is also not as flexible as other approaches and

there are significant demands on agency staff resources.

- In summary, there is no one correct deployment strategy. An assessment should be made for each project on what the best approach is. It is important to maintain flexibility with whatever approach is used.