

CHAPTER G

GENERAL WORK PLAN

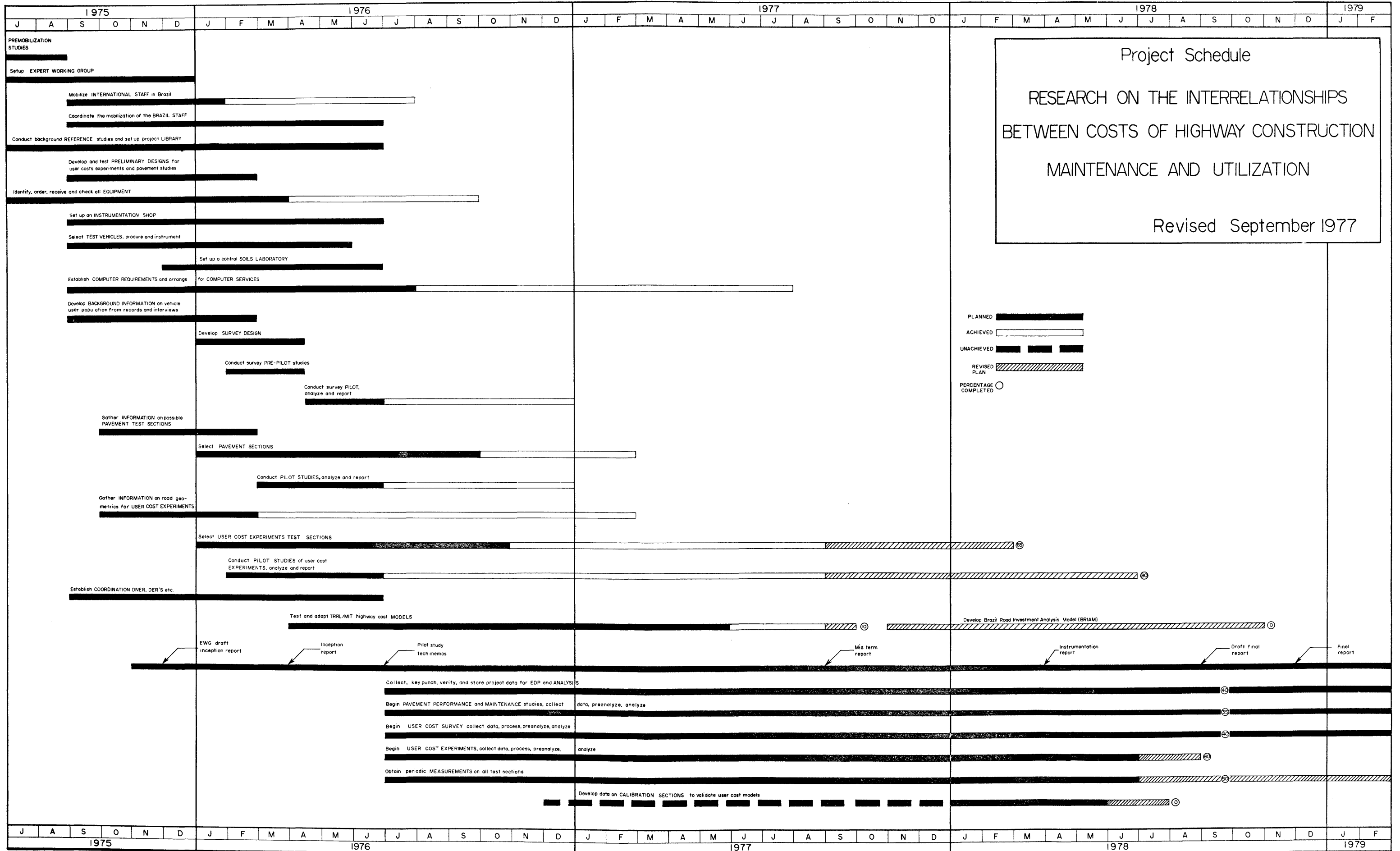


Detailed schedules are included in Chapters C through F for each of the major study phases. This general work plan summarizes the se activities for the entire project, and the project schedule shown in Figure 60 is an updated version of the one included in the Inception Report (Ref. 1). Each of the activities that were completed as planned are unaltered. For those that required more time but are now complete, an achieved line is shown. A cross-hatched pattern is used to show present revised plan on all unfinished activities. Also, for each activity that is not complete, a current estimate of the percentage completed is indicated.

Seven of the activities that are now complete were finished later than originally planned. Each activity has been extended using the achieved coding. The following brief explanations are offered for the delays.

- *Mobilize International Staff in Brazil* - The staff was completed as indicated but the Instrumentation engineer arrival in Brazil was delayed, so that more time could be spent checking on equipment in the U.S.A. Also, contract changes in March resulted in modified international staffing requirements. An economist was added for the full length of the study and it was decided to immediately add a modeler to project staff, and he arrived in August 1976.
- *Identify, Order, Receive, and Check all Equipment* - All of the equipment except the Profilometer, which arrived in June, and the A/D and resilient modulus soil testing equipment, which arrived in September, was received as scheduled.
- *Establish Computer Requirements and Arrange for Computer Services* - The establishment of adequate computer facilities for the project has proved a formidable task. The final configuration includes service contracts with CAEEB and EMBRAPA, the latter having been signed in May 1977, and the establishment of a remote terminal connection to DNER, which only became operational in May 1977.
- *Conduct Survey Pilot, Analyze and Report* - The main study effort started as scheduled, but complete refinement of the data-collection documents was not finalized until December. Data collected during the first six months of the main survey needed to be transformed to conform with the final study documentation format.





- *Select Pavement Test Sections* - After an exhaustive search extending beyond the originally planned study area, it was not possible to locate test sections for all of the pavement study factorial cells. Therefore, the analysis will be based on a reduced factorial design.
- *Conduct Pavement Pilot Studies, Analyze and Report* - Locating the test sections required far more time than anticipated. Finalizing the measurement system to be used to document information being monitored on the test sections was also delayed, with the last being the condition survey procedures which were finalized in December 1976.
- *Gather Information on Road Geometrics for User Costs Experiments* - In searching for experimental sections, the first step was establishing suitable geometric characteristics, and this process continued as the search for rough paved sections was pursued.

A revised schedule has been established for all remaining project activities that were not originally projected to continue to the very end of the study period. The activities that were changed and the reason for the required extension in their schedule follow:

- *Select User Cost Experiments Test Sections* - This activity was expected to be completed early in the study, but it has proved impossible to locate some of the desired test sections. Rough paved sections meeting the study factorial requirements could not be found close to the operations base in Brasilia. Suitable sections were eventually found in Goiás and Minas Gerais after extensive searching. The specifications for test sections require uniform grades 1.5 to 2-km long over a range of roughness and with reasonable traffic volumes for the speed studies. A current search has been initiated of the user surveys route inventory file. If the critical section cannot be found, the constraints will be relaxed so that all feasible sections are in hand by March 78. About half of the remaining 35% which need to be located are associated with experiments not yet initiated and will only require identification.
- *Conduct Pilot Studies of User Cost Experiments, Analyze and Report* - Four of the 13 main experiments have not been pilot tested. These are all relatively short experiments but have not yet started because priority has been

given to the completion of ongoing major experiments. Not included in this revised plan is the pilot testing of two of the nine satellite studies not programmed in the current schedule.

- *Test and Adapt TRRL/MIT Highway Cost Models* - The TRRL model is operational and has been studied. However, limited work was done with the existing combined model, because the latest version has not been made operational. There is a need to have a final model oriented to the Portuguese language and completely operational by the end of the study. Adopting the existing model does not appear feasible within the remaining time because current documentation is incomplete and this makes modification impractical. Therefore, proposed is a newly structured and coded model to be developed during the remaining study period.
- *Begin User Cost Experiments, Collect Data, Process, Pre-Analyze, Analyze* - This activity has been extended two months to permit maximum time to collect and analyze data to include in the model. Refinements to the various relationships being developed can be made right up until they are presented in the final draft report.
- *Obtain Periodic Measurements on all Test Sections* - The establishment of specially trained teams to develop measures of performance on both paved and unpaved road sections, together with the acquisition and modification or fabrication of suitable measure equipment took many months. The pavement studies are expected to be carried forward into the future, Retaining the continuity of the measurements by keeping the teams in the field will help this transition.
- *Develop Data on Calibration Sections to Validate User Cost Model* - This activity has not started although the necessary tachographs and fuel meters have been checked out. The new schedule shows this activity starting in January 1978, when the necessary vehicles can be diverted for this purpose.