

FIGURE 2 : LIST OF PROJECTS AND IMPLEMENTATION SCHEDULE.

| A              |                | B                   | C                                      | D                | E                                                                                                                                                                                                                       |                                                 | F      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|----------------|----------------|---------------------|----------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------|--------|--------|--------------------------------------------------|--------|--------|--------|-----------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|---|
| Subject Teams  | Project Number | Financial Resources | Estimated Costs in 10 <sup>3</sup> Is. | Name of Projects |  High Priority Project<br> Secondary Priority Project | Time table (years) for moderate rate projection |        |        |        | Time table (years) for intensive rate projection |        |        |        | Time table (years) for intermediate rate projection |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                |                     |                                        |                  |                                                                                                                                                                                                                         | 1978                                            | 5      | 10     | 20     | 1978                                             | 5      | 10     | 20     | 1978                                                | 5      | 10     | 20     |        |        |        |        |        |        |        |        |   |   |
|                |                |                     |                                        |                  |                                                                                                                                                                                                                         | 11,200                                          | 12,000 | 13,000 | 14,000 | 15,000                                           | 16,000 | 17,000 | 18,000 | 19,000                                              | 20,000 | 21,000 | 22,000 | 23,000 | 24,000 | 25,000 | 26,000 | 27,000 | 28,000 | 29,000 | 30,000 |   |   |
| Infrastructure | Roads          | 1                   |                                        |                  |                                                                                                                                                                                                                         | ●                                               |        |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 2                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ●      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 3                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ○      |        |        | ●                                                |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                | Sidewalks      | 4                   |                                        |                  |                                                                                                                                                                                                                         |                                                 |        |        |        |                                                  | ○      |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 5                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ○      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 6                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ●      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 7                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ●      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                | Paths          | 8                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ○      |        |        |                                                  | ●      |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 9                   |                                        |                  |                                                                                                                                                                                                                         |                                                 | ●      |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                | Water Pipes    | 10                  |                                        |                  |                                                                                                                                                                                                                         |                                                 | ●      | →      | →      | →                                                | →      | →      | →      | →                                                   | →      | →      | →      | →      | →      | →      | →      | →      | →      | →      | →      | → | → |
|                |                | 11                  |                                        |                  |                                                                                                                                                                                                                         |                                                 |        |        |        | ○                                                |        | ○      |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |
|                |                | 12                  |                                        |                  |                                                                                                                                                                                                                         |                                                 |        |        |        |                                                  |        |        |        |                                                     |        |        |        |        |        |        |        |        |        |        |        |   |   |

SOURCE: Complementary Development Plan, The New Town of Bet Shemesh, 1978.

- (c) Few future projects would attain high priority status only when their threshold population is reached. In order to secure their synchronized operation, they should be planned and integrated in the implementation schedule in due time.
- (d) Large scale projects such as housing, education, health and transport facilities, also include many infrastructure and service elements. The general tendency to date is to delay their development for a later date, if at all. In practice, these deficiencies have fallen as a burden on the community development budget. In order to avoid this situation, the local authorities should specify in advance the prerequisite performance standards they wish to attain, and the accessory elements of each large scale project they demand.

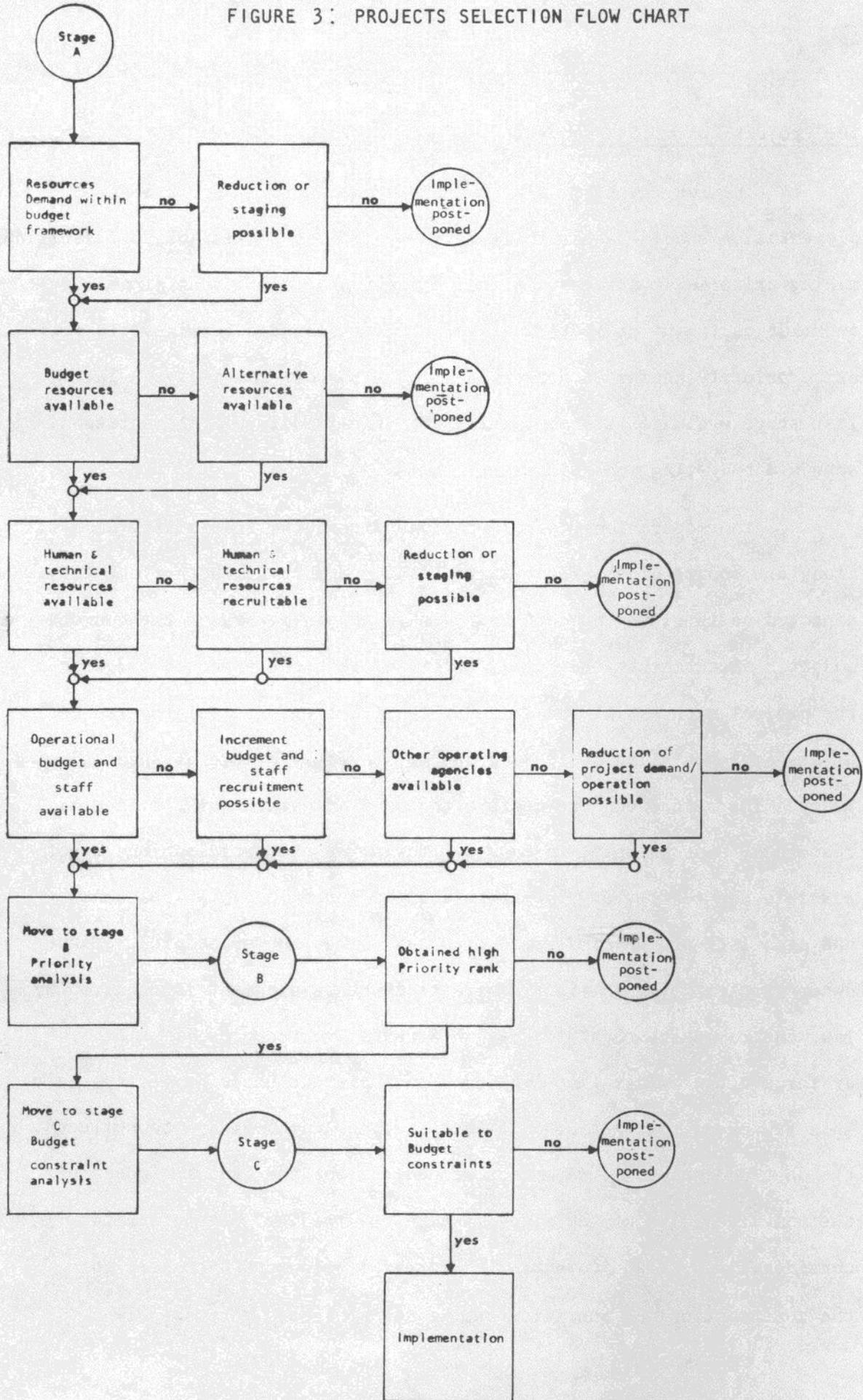
The most critical issue, however, is how one moves from the long range comprehensive development project list into a short-range operational implementation schedule. It should be clearly stated that all projects which move into the project selection process must be consistent with the community Master Plan and other detailed thematic schemes if these are available. In addition, the project should be aimed to match past gap or to satisfy emerging needs justified on the grounds of acceptable planning standards and design criteria. Exceptions to the above limiting factors would be projects representing an integrated segment of past commitments, or those emerging from unexpected emergency conditions in the community.

### The Project Selection Process:

The long list of high priority projects for immediate implementation should be carefully reviewed against pre-established decision making criteria in three stages. The first examines its attainability in relation to the project's own merit. The second determines its relative priority against other projects of the short-range list. The last stage evaluates its conformity with the immediate implementation schedule budgeting constraints. (Figure 3)

Four operational considerations direct the feasibility analysis along the course of the first stage. The foremost is whether the total expected costs of the project nest within the framework of the community budget. In case that the demand is higher than the expected budget, the project might still remain feasible if its extent could be reduced or its implementation could be properly staged into several successive years. The second concern deals with the availability of the financial resources. For example, in many new towns, owner participation is not possible due to the very low socio-economic profile of the residents, and also lack of municipal effective tax collection procedures. Since owner participation in lineal infrastructure development is required by law, the community ought to seek an alternative resource, banking loans or through the credit line, in order to implement these projects. Only in a few cases, do the authorities of the new towns manage to collect the debt under special repayment schedules, but the overall impact of the unavailability of the money in time is impeding. The other two considerations relate to human and material resources necessary for the construction and operation of the new project. Most new towns

FIGURE 3: PROJECTS SELECTION FLOW CHART



are small and their municipal organizations do not have the technical means and trained personnel at their disposal, which are necessary to carry out a modern new activity. Sometimes, once a new project is completed, one may find that the common budget allocations are not enough to carry on. In order to avoid the situation, the new town's government should evaluate in advance whether it would be able to cope with the challenges of the new project.

If a project, with all the alterations made, is found to be feasible and attainable, its relative priority is then evaluated against other projects of similar status. Table 5 is a simple evaluation implement, showing the four elements of the project priority analysis proposed for the complementary development program of Bet Shemesh (1978), a small new town near Jerusalem. According to the unique circumstances in the community one may add elements or assign different weights to each of the priority elements.

Of the elements shown in Table 5, the fourth requires further elaboration. In most places there are many contradictory preferences, reflecting the diversified community socio-economic and political power structure. At the higher level of these preferences one may find civic aspirations associated with the improvement of the community image and status. Advocates of these aspirations may argue for prestige or high quality performance projects. In contrast, common pressure groups might strongly insist on the reallocation of budgets to satisfy their exclusive needs. In addition, political figures in the community tend to assign development resources to gratify groups or sections in the

TABLE 5: Project Priority Analysis (Stage B)

| Criteria                                                                                                                                                                                                                      | weighting value | Project 1 |              |          | Project 2 |              |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------|----------|-----------|--------------|----------|
|                                                                                                                                                                                                                               |                 | yes<br>+1 | neutral<br>0 | no<br>-1 | yes<br>+1 | neutral<br>0 | no<br>-1 |
| <p>A. <u>Essentiality</u></p> <p>(1) Demanded by law or ordinance</p> <p>(2) Stimulate health and safety</p> <p>(3) Serves sensitive population</p> <p>(4) Solves an urgent problem</p> <p>⋮</p>                              |                 |           |              |          |           |              |          |
| <p>B. <u>Multiple purpose</u></p> <p>(1) Serves more than one objective</p> <p>(2) Serves more than one population</p> <p>(3) Saves the development of a similar project</p> <p>(4) Required by large population</p> <p>⋮</p> |                 |           |              |          |           |              |          |
| <p>C. <u>Complementary</u></p> <p>(1) A prerequisite for an essential project</p> <p>(2) A segment in an ongoing project</p> <p>(3) Supplement an existing project</p> <p>⋮</p>                                               |                 |           |              |          |           |              |          |
| <p>D. <u>Population Preferences</u></p> <p>(1) Improve the image and status of the community</p> <p>(2) Enables women to work</p> <p>(3) Mayor's commitment</p> <p>⋮</p>                                                      |                 |           |              |          |           |              |          |
| Total                                                                                                                                                                                                                         |                 |           |              |          |           |              |          |

locality for their political support. When subjective community preferences openly and rationally are integrated into the priority analysis process, their weights are posed and evaluated against those which objectively reflect the general well-being of the community.

In the last stage the final structuring of the project list is made on the basis of budget constraints analysis, Table 6. The most critical limiting factor in this process is the 'credit line' balance. If a new town wishes to make the highest and best use of this line it should strive to a zero yearly balance. Yet, a situation of a zero balance might be reached early in the list, possibly when the continuing projects and very few new ones exhaust the allocated favourable credit resources. When this occurs, the community ought to take new decision measures. For example, the community may decide to cut some segments of a large project and postpone them to a future date. They still may agree to look for new alternative more costly funds to match the deficit. Another possibility would lead to a postponement of all projects that fell short of the credit line balance. Whichever decision is made, the financial resources constraint analysis yields the final project list for the yearly implementation schedule.

TABLE 6: Budget Constraint Analysis (Stage C)

| Projects,<br>Ranked according<br>to Stage B | Financial Resources    |               |        |        |                   |             |                    |
|---------------------------------------------|------------------------|---------------|--------|--------|-------------------|-------------|--------------------|
|                                             | Designated<br>Ministry | Participation |        |        | contrib-<br>ution | Credit line |                    |
|                                             |                        | Government    | Owners | others |                   | Allocation  | Balance<br>Maximum |
| <u>Continuing projects</u>                  |                        |               |        |        |                   |             |                    |
| 1                                           |                        |               |        |        |                   |             |                    |
| 2                                           |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| n                                           |                        |               |        |        |                   |             |                    |
| <u>New projects</u>                         |                        |               |        |        |                   |             |                    |
| 1                                           |                        |               |        |        |                   |             |                    |
| 2                                           |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| n                                           |                        |               |        |        |                   |             | 0,000              |
| <u>Alternative projects</u>                 |                        |               |        |        |                   |             |                    |
| n + 1                                       |                        |               |        |        |                   |             |                    |
| n + 2                                       |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| .                                           |                        |               |        |        |                   |             |                    |
| n + j                                       |                        |               |        |        |                   |             |                    |

Final Comments

Urban growth in the peripheral new towns is among the national prime objectives. Their achievements in this role are conditioned by the quality of life they offer to potential internal migrants and enterprises in order to locate there, and to the existing inhabitants and economic activities in order to remain. The level of quality of life in turn, is subject, among other things, to the supply of infrastructure, community facilities and other local services. A proper complementary development program might help attain this role and help create the necessary conditions for the desired growth.

Comprehensive clear view of community needs, their assignment into feasible projects and careful selection among program constituents according to budgetary constraints, are prerequisite of a workable community complementary development activity. The simple methodology offered, if properly employed, is a possible means to reach these ends.

Despite its simplicity, and in spite of the fact that the appliance of the proposed methodology does not require a complex planning infrastructure, its employment demands attention in some ingredients. In the first place, the list of projects must remain up to date in all events. To this end, public servants and decision makers ought to establish a feedback and information systems to report achievements, delays, changing courses and other incidents that take place during the implementation process. In other words, the community should remain aware of the on going situation and to react accordingly. As such, changing conditions, both internally or externally to the community must be taken into consideration and integrated into the plan.

Finally, the plan proposed here for a small new town might also be useful for other types of small size communities. During the experimental efforts it had been successfully employed, with some minor modifications in few rapidly urbanizing Arab settlements. Yet, being still in its experimental stage, the tool calls for further empirical work in order to make it more universally applicable as a segment of the plan making process.

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