

REPORT  
on the  
Site Selection  
for the  
Permanent Administrative Center  
of the  
HELMAND VALLEY AUTHORITY

U. S. Technical Cooperation Service

to Afghanistan

1953

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# HELMAND VALLEY AUTHORITY

## Report on Site Selection for the Administrative Center

### Introduction

At the request of His Excellency, Abdulla Khan, President of the Helmand Valley Authority, studies have been made to ascertain the most appropriate location at which to develop the facilities required for the Administrative Center of the said Authority. The results of these investigations are presented herewith.

Inquiry was also made into the feasibility of constructing facilities to be temporarily occupied by the HVA and which could later be used to fulfill some permanent needs within the present project areas. It was found to be impractical to design and locate structures and facilities that could be economically usable for such diverse purposes. It became apparent that all facilities for HVA use, whether in the project areas or at the Administrative Center, should be built for permanent occupancy on the sites selected according to their functional place in the operational pattern.

### General Background

The Helmand Valley Authority, established by governmental action in the fall of 1331 A.H. (1952 A.D.) is charged with the responsibility of directing the economic development of the Helmand watershed. The watershed contains, along with the Helmand River, the various major tributaries including the Arghandab, Tarnak and Dori rivers. It extends irregularly over three degrees of latitude and four and a half degrees of longitude. The geographic center is near Girishk.

The general functions of the Authority, as set forth officially, are as follows:

- a. Conservation and utilization of the national domain located in the Helmand Valley;
- b. Protection of the national interests in the Valley;
- c. Protection and development of land and the economic use of water resources;
- d. Control of the flow of the Helmand River and its tributaries;
- e. Consolidation of lands and the settlement of migratory peoples;
- f. Generation of electrical energy in the Helmand area.

Prior to the establishment of the Authority, the National government, utilizing the services of MKA, had been carrying on a long-term improvement program in the watershed. This plan included two large dams and several

canals. Kajakai Dam on the upper Helmand is nearly completed. The Boghra Canal, starting above Girishk city, now brings water to two major plains areas west of the Helmand River, known as Nad-i-ali and East Marja. An experimental farm has been developed at Fort Nad-i-ali itself. The Shamalan canal, taking off from the Boghra, follows south along the west side of the Helmand and brings improved water supply to the river valley area for some 65 kilometers. To the east, a large dam has been completed on the Arghandab north of Qandahar, which will permit the enlargement of land areas under cultivation in the lower valley. Another canal, the Seraj, takes water from the Helmand some 35 kilometers north of Girishk, and irrigates the lands on the eastern side of that river for a distance of over 70 kilometers. This was a government project entirely.

These aforesaid facilities and projects are now under the control and direction of the Helmand Valley Authority. Those unrelated agencies previously in charge of various portions of the Valley improvement activities have been transferred to and incorporated in the Authority. In short, a central autonomous organization now exists to most efficiently plan, execute, and administer the economic development of one of Afghanistan's most important river systems. Further, this Authority has begun as an operating agency, with physical assets and programs already in existence, and it can be expected to grow and expand in proportion to the increasing tempo of the Valley development work.

The Authority, however, is still physically dispersed, with offices in Qandahar, Girishk and Fort Nad-i-ali. As a result, organizational work and staff development are seriously handicapped. These long lines of communication and control adversely affect operating efficiency and impose a heavy time-consuming travel schedule upon key personnel. Field offices will form a part of the work pattern but it is imperative that a center be established to provide the facilities for Authority Headquarters and the over-all administration of the Helmand Valley development programs. The purpose of this report is to recommend the most appropriate site location for such a center. The final recommendation is based on the following studies.

#### SITE SELECTION CONSIDERATIONS

##### I. Geographic Location

The location of the HVA Center should logically be related to the geographic center of its administrative jurisdiction, which roughly extends from Panjab on the north to Chahr Burjak on the south and from east of Qandahar

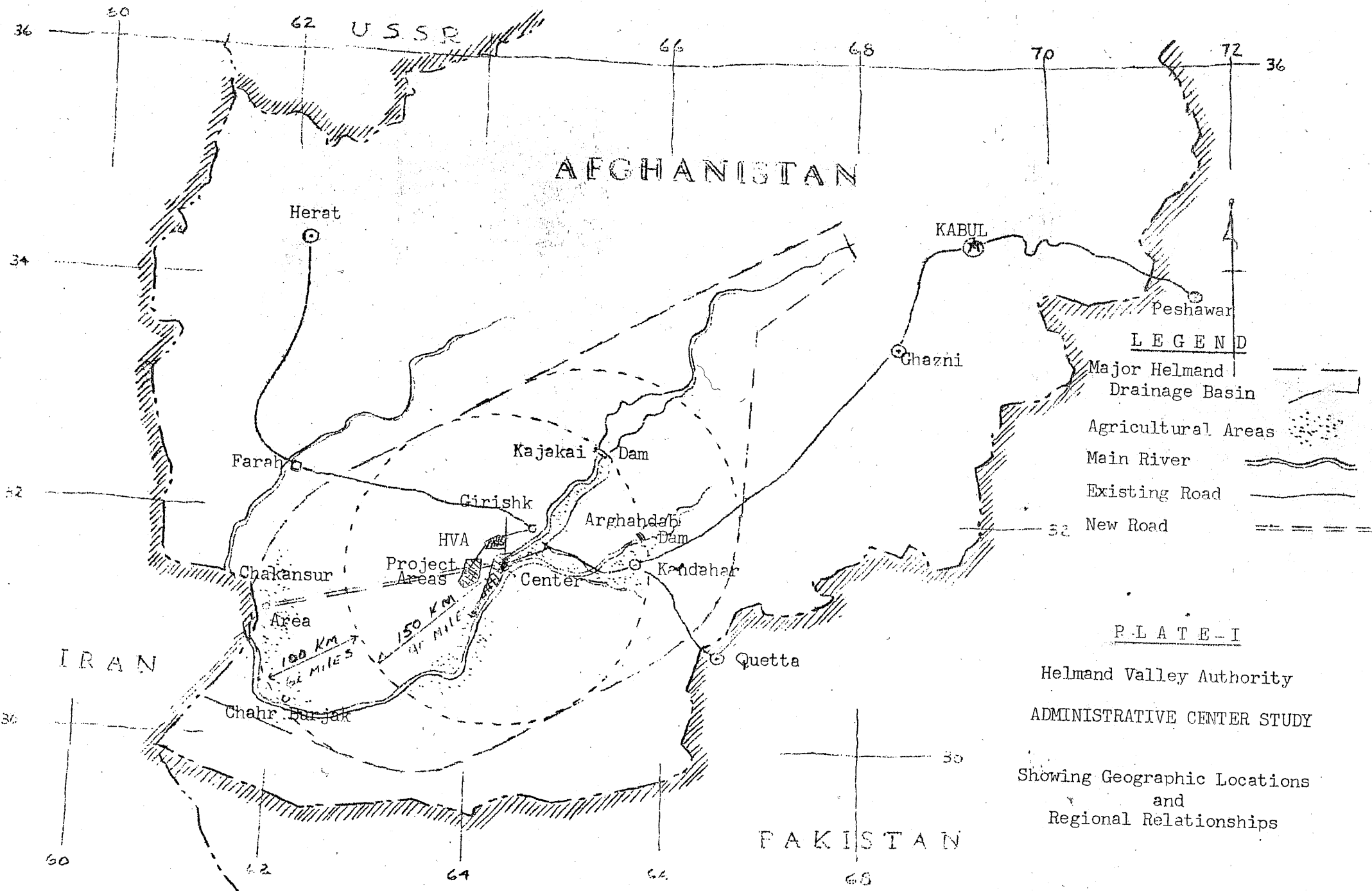


PLATE-I

Helmand Valley Authority  
ADMINISTRATIVE CENTER STUDY

Showing Geographic Locations  
and  
Regional Relationships

to Miliarem. This indicates a location somewhere south of Girishk. Within this area, a site should be chosen that is reasonably close and has easy access to the three major Helmand River development projects of Nad-i-ali, East Marja and the Shamalan. A river site, naturally would be most appropriate. (See Plate I.)

Since this location will also become a marketing center, it is necessary that the site be on either existing or possible main lines of communication within the region, and beyond. This is particularly important since the shortest route for bringing produce to market, whether for internal consumption or for export, will lower the cost to the consumer and save foreign exchange outlay for the country. Studies have shown that to operate a lorry, it costs at least ten cents in foreign exchange for gasoline, oils, tires, parts and vehicle for each kilometer of travel under normal conditions.

In this respect, a study was made of the traffic circulation within the Nad-i-ali, East Marja and Shamalan region and the logical farm-to-market network. Considered with this group was also the produce traffic that will originate in the Chakansur region when connected by road to the East Marja and that coming from additional Helmand Valley developments south of the Shamalan. (See Plate II.) It was found that the traffic lines were shortest when crossing the river north of its confluence with the Arghandab and proceeding directly east via Yakhchal. The Qalai Bust-Yakhchal road is developed to within 7 kilometers of Yakhchal, and will there connect with the direct route to Qandahar as well as the road north to Kajakai Dam. It should be noted that Qandahar is not necessarily the terminal point, but traffic going north to Kabul or east to Quetta must pass through this city.

Traffic taking this route to Qandahar will save 6 kilometers between the East Marja and Yakhchal and some 16 kilometers between the Shamalan area and the same town. The cost savings in foreign exchange per year is impressive. If a lorry made only one round trip per week from the Shamalan region, the operating costs would be reduced by some \$165 each year by using the shorter route. The missing connection in this regional farm-to-market road is a river crossing, which could be provided by either a ford, ferry or bridge. The least expensive crossing should be initially installed and could be replaced with a more appropriate structure when required by the future traffic demands. This artery when completed, will have additional regional economic value in that it will tie the Lower Saraj area into the regional pattern and will provide it with an outlet to markets, thereby stimulating increased agricultural productivity.

DISTANCES

East Marja to Yakhchal - via Girishk	80 Km
" " " " - via River X'ing	74 Km
Saving	6 Km
Shamalan to Yakhchal - via Girishk	63 Km
" " " " - via River X'ing	47 Km
Saving	16 Km

LEGEND

- Major traffic lines
- == Canal
- HVA Project area
- ~ River

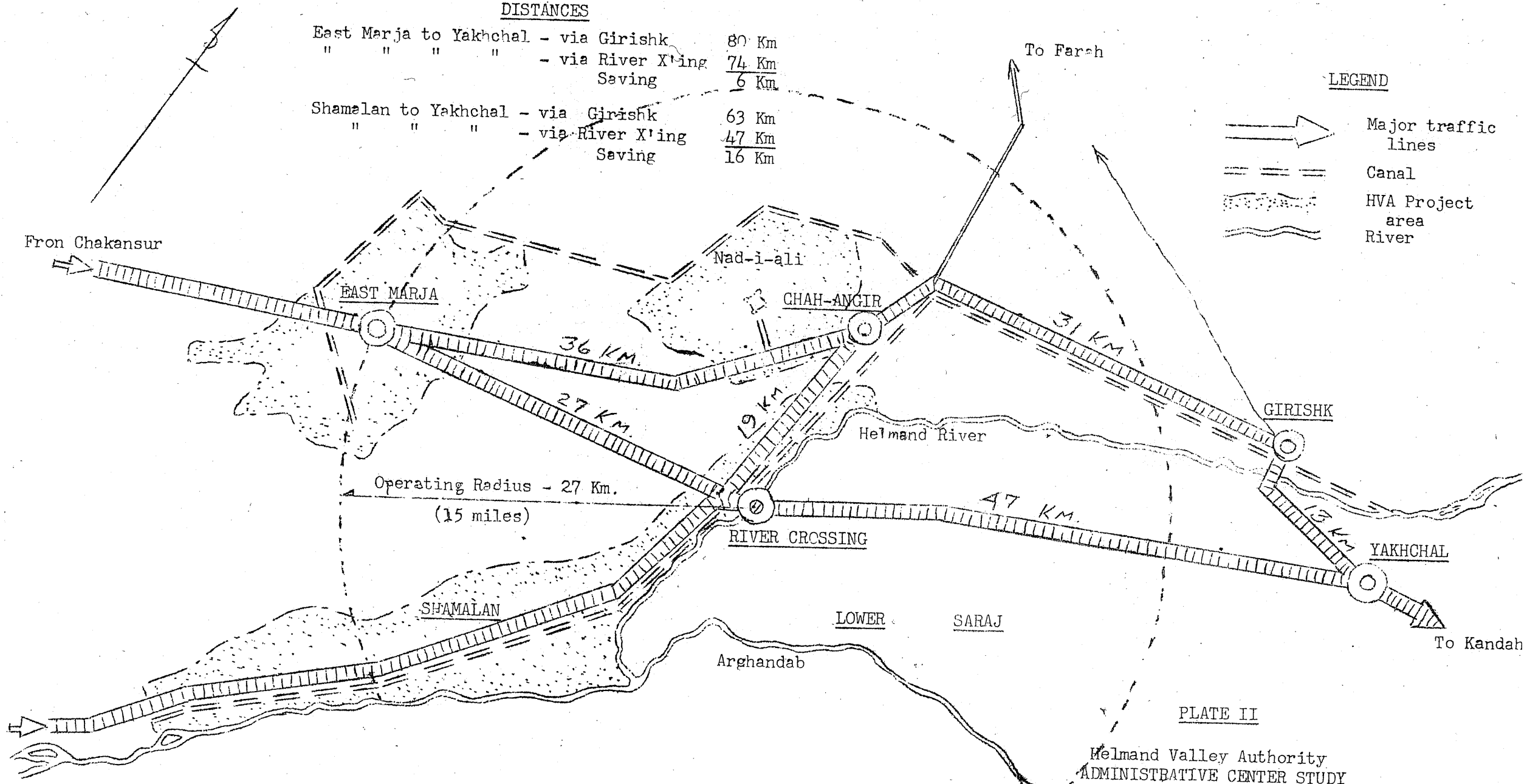


PLATE II

Helmand Valley Authority  
ADMINISTRATIVE CENTER STUDY

Showing Regional Traffic Routes & Internal Lines of Communications

Consideration is also being given to the possible relocation of the Qalai Bust road closer to the agricultural areas along the Arghandab and having this road connect with the Qandahar highway at Khusk-i-nakhud. This would open up more agricultural lands and would reduce the Shamalan traffic haul by at least another 10 kilometers.

Naturally, some traffic will not be headed directly to Qandahar, but to an initial marketing or processing terminus. It is logical, therefore, to shorten the haul of produce and raw materials from the farms by having the terminus most centrally located in relation to the production areas. Not only will the initial transport costs be reduced but the secondary transportation of processed goods will be more profitable since the payload value per kilogram carried will be greater.

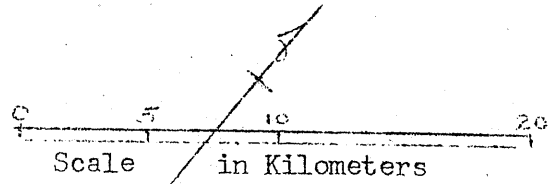
Consideration must also be given to the future population distribution, as well as that now existing. It is proposed to settle 600 families in the Nad-i-Ali development and 2,000 families on the East Marja lands, according to present estimates of the soil productivity. The number of new families that will be attracted to the Shamalan, present population estimated at 30,000, is dependent upon land ownership factors and estimates vary between 1,000 and 3,000. Some private marginal settlement is to be expected. No estimate is available at present on the family settlement possible in the Lower Saraj area if the Saraj Canal is enlarged. On the basis of a minimum of 3,600 new families to be settled in the first three areas only, an early increase of at least 20,000 population can be expected in this region. (See Plate III.)

If the Saraj Canal is enlarged and anticipated industries such as cotton ginning, leather tanning and the like are established locally on the Helmand River to process these agricultural products, a large population increase in this general area will result. With Girishk City some 60 to 70 kilometers from major project areas, an urban center closer to the balance of population is definitely required and is so recommended.

## II. Area Requirements

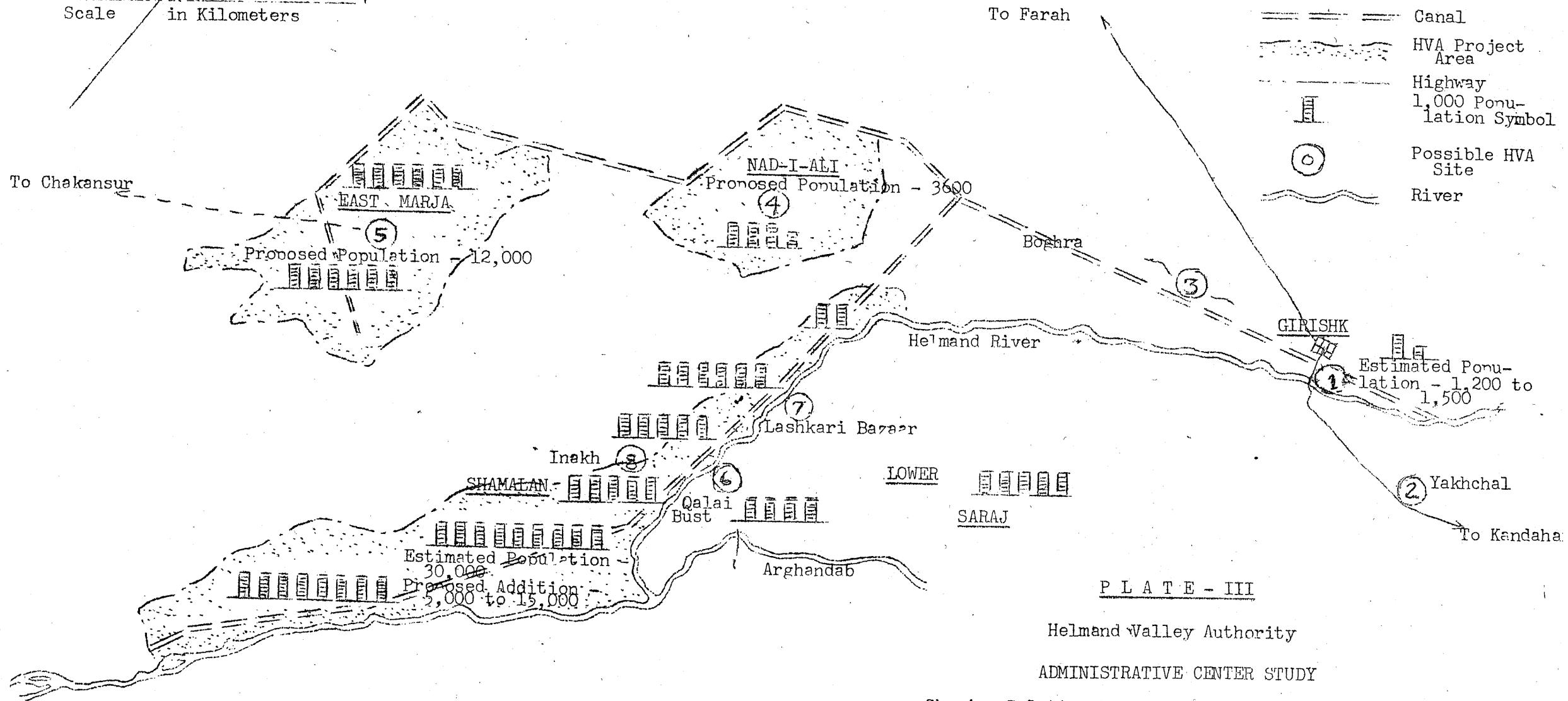
With the exception of the limited space at the Nad-i-Ali experimental station, the Authority has no office facilities of its own, nor is housing available for its personnel and their families. Both are essential for efficient administration and operations.

Original estimates called for approximately 40 offices to be provided for HVA. While probably temporarily satisfactory in the present formative stage of the organization, plans now under consideration indicate the expansion that



**LEGEND**

- Canal
- HVA Project Area
- Highway
- 1,000 Population Symbol
- Possible HVA Site
- River



**PLATE - III**

Helmand Valley Authority

ADMINISTRATIVE CENTER STUDY

Showing Relationships between Project Areas, Population Distribution and Various HVA Center Sites



can be expected in the immediate future. The present tentative development program mentions over 85 activities to be carried on under the general headings of administrative services, agricultural development, resettlement, area economic development and engineering, which latter includes water control, power development and maintenance, as well as general building and construction. All of these activities will require at least one office each, and more in many cases. Although all these activities will not necessarily be located at the HVA Center, space must be provided for liaison personnel.

Initial office construction may be limited to the funds available for this purpose, but it is evident that advance planning must provide for the total office facilities that will be required under present proposals. In addition, land area must be reserved for those future expansions which will naturally follow as the Valley area becomes more intensively developed.

Personnel living quarters must also be provided in the HVA Administrative Center, regardless of the final location. There is no surplus residential housing available in the Girishk area, and the present living conditions of HVA employees are unfortunate. The majority have their families lodged elsewhere. It will be necessary for HVA to assume the responsibility for housing construction in order to attract and keep its personnel. The housing can be rented to each employee, made a part of his remuneration, or sold on a rent-purchase agreement according to whatever policy HVA may elect.

The HVA Administrative Headquarters will be the center of permanent basic employment, comparable to that of a large industry. It has been demonstrated that each such center attracts additional population over and above the basic employees and their families. These people provide the services and engage in secondary employments generated by the basic group. In general, there are two persons engaged in this latter group for each worker in basic employment. Essentially, the housing and work facilities of this secondary group will be no responsibility of HVA, since they tend to provide their own. They do require community facilities and contribute to the balanced development of an urban center. Therefore, in its own interests, HVA should take measures to ensure that adequate land area is available for this group and that their improvements fit into a controlled development plan around the HVA Center itself.

The HVA was boldly conceived and premised on a fresh, functional approach to the integrated exploitation of the nation's natural resources. This same vision must be applied to all things with which HVA is connected, and its

urban development as well as to administrative functions. The HVA Center should be as much of a demonstration project as HVA irrigation systems and model farms.

To recapitulate, the HVA Center will require sufficient area to provide adequate sites for the following:

- a. HVA office buildings, immediate and future
- b. HVA personnel housing, immediate and future
- c. Secondary employment building, immediate and future
- d. Non-HVA population housing, immediate and future
- e. General community facilities, immediate and future
- f. Parks and recreation facilities, immediate and future

Estimating initial HVA personnel at approximately 150 persons, an estimated secondary work force of 300 (plus or minus) can be expected to materialize shortly thereafter. This means a total work force of 400 to 600 in and about the Center by the end of the first years of operation. At a conservative figure of 2 family members for each worker, the population of the Center area would add up to more than 1,200 persons. In an expanding economy, employment centers attract population at an accelerated rate. With the center also becoming the focus for regional marketing, light industries, educational and extension services, etc., it will not be unrealistic to expect it to have a population of 6,000 to 8,000 persons at the end of ten years. Greater growth will follow in the future.

For purposes of initial planning requirements, it is proposed that an area containing 1,000 jeribs be considered as minimum for the new HVA Center. Approximately 65% of this will be required for sites for HVA administrative facilities, public buildings and installations, commercial buildings, parks, public squares and streets. The remaining 35% or 350 jeribs will provide 1/3 to 1/2 jerib lots for up to 800 families. This percentage of land use will be reversed in later extensions of the Center, which will be predominantly residential in character.

In acquiring a tract of this size, it is to be expected that a certain percentage thereof will be farm land of varying quality or land that could be cultivated. Therefore, a definite policy should be adopted by the Authority that any agricultural land lying within the final site boundaries should continue to be made available for cultivation and food production until such time as the physical development of the Center requires the land for other uses.

In addition to the above 1,000 jeribs, at least 1,500 jeribs of adjoining land should be available and under HVA control for future expansion on a long-

term basis. This control can be maintained either by zoning and land use regulations or by purchase options. The combined total of 2,500 jeribs will be adequate for a future population of 12,000 to 16,000 persons. It is therefore recommended that the HVA Center be located within a tract of 1,000 jeribs, with a surrounding expansion area of at least another 1,500 jeribs.

### III. Physical Factors

#### A. Water Supply.

Water should be available in quantity for drinking, irrigation and sanitation purposes. Open streams are very desirable as they provide a constant source of water, as well as facilitating the disposal of surface water drainage and the effluent from sewage treatment installations. Stream flow may also provide a source of power for electric generating purposes. A site on the Helmand River would fulfill these requirements.

#### B. Drainage.

Good drainage is very important. Inadequate drainage causes damp unhealthy houses, foundation and wall damage, street failures and necessitates additional site development costs. It encourages mosquito breeding and the spread of malaria. In built-up urban areas, poor drainage results in the pollution of the soil with water-borne diseases, definitely affecting the public health. The preferred site should be on higher land, and generally slope toward a natural drainage outfall, with no abrupt changes in elevation. The normal water-table should be at least 2 meters below the surface.

#### C. Exposure.

The Girishk area, with its short mild winter and long hot summer, presents special problems. In view of the hot weather months, during which the daytime temperature usually exceeds 100 degrees (F), maximum advantage should be taken of the breezes coming generally from the southwest. A site on high ground, without intervening obstacles and with its long axis running north-south, will provide the greatest exposure to these air currents. However, care must be exercised that these breezes do not come hot off of the barren deserts or bring sand and dust into the site, thereby destroying their value. A site bordered by agricultural lands and/or water areas will benefit by their moderating influences.

#### D. Soil.

Soil conditions on the site may vary considerably without affecting it adversely. Good deep loam is neither necessary nor particularly desirable. Since the basic building material will be brick, both sun-dried and burned,

the most important factor is the availability of a satisfactory clayey soil for the production of the same. Onsite or nearby deposits of gravel and/or stone, for use in street construction and concrete work, are essential. Hardpan or conglomerate strata just below the surface are undesirable on the site, since their presence effects the soil drainage and adds to trenching costs.

#### E. Amenities.

Site amenities are difficult to reduce to monetary terms but in many ways they affect the living and working qualities of a community. In clean pleasant surroundings, with adequate public facilities, situated amid interesting views and natural features, people are happier, work harder and are more content. Such things as clean air, moderating breezes, relative freedom from dust and insects and the like not only add to the joy of living but do have an economic effect by lowering the incidence of medical expenses and reducing expenditures for the cleaning and replacement of clothing and household materials. Association with natural features and historic areas gives character to a community and promotes pride and progress in its citizens. Certainly as much weight should be given to the intangibles of a site as to engineering and economic considerations.

#### Site Requirements Summary

It is therefore recommended that the Helmand Valley Authority Administrative Center should be developed on a site possessing the maximum of the following characteristics.

##### The site should:

- a. be located in the lower Girishk region and be most convenient to all the major agricultural development areas and centers of rural population;
- b. contain a usable area of 1,000 jeribs and have adjacent land available to the extent of at least 1,500 additional jeribs for future Center expansion;
- c. be related to local and regional lines of communication, existing or proposed, so that the Center may properly fulfill its administrative and marketing function;
- d. have an adequate water supply and be reasonably near to an open stream;
- e. have a sloping, well-drained situation with a low water-table;
- f. possess the optimum exposure for maximum physical comfort in this region;
- g. have sufficient soil available for brick manufacture, and a source of gravel and stone nearby;
- h. possess natural beauty and potential for healthful living.

## Individual Site Analyses

Following the establishment of the above site criteria, field inspection and office analysis was made of eight potential sites. Some of these had previously been considered and others were selected because they exhibited some of the desired site characteristics. By name and number, these sites are:

- |                  |                    |
|------------------|--------------------|
| 1. Girishk City  | 5. East Marja      |
| 2. West Yakhchal | 6. Qalai Bust      |
| 3. Boghra Canal  | 7. Lashkari Bazaar |
| 4. Nad-i-Ali     | 8. Inakh           |

Following is given a brief resume of the major factors affecting the desirability of each of the above sites. Their locations are shown on Plate III.

### 1. Girishk City Site:

Favorable Characteristics: This site was given very serious consideration. It is immediately adjacent to the city itself, which is the present capitol and major settlement of Girishk Province. The city has an established background. It is situated on the Boghra Canal, near the Helmand River, and the Herat-Qandahar highway passes through it. The water supply is adequate. The main power drop in the Boghra Canal is located nearby and will provide electricity to the city in the future.

Unfavorable Characteristics: There is insufficient land of suitable elevation and exposure adjacent to the city. Where land area is sufficient on fields presently under cultivation, the water-table is high and the drainage is very poor. The cost per jerib of this farm land would also be expensive. The city is some 32 kilometers from the nearest irrigation project and over 60 kilometers from the other two. When and if the direct farm-to-market road is completed to Yakhchal, the city will be by-passed.

### 2. West Yakhchal Site:

Favorable Characteristics: This site is located several kilometers west of the town of Hakhchal on high, gently rolling ground. The soil is excellent and can be irrigated from the Saraj canal. There is more than sufficient area available. The site is on the Herat-Qandahar highway and close to the Yakhchal-Qalai Bust route. It can be economically served from the future power installation above Girishk.

Unfavorable Characteristics: The major drawback of this site is its distance of from 50 to 80 kilometers from the developments along the Boghra and Shamalan canals. It will also be hotter in the summertime, since a line of hills to the south will interrupt the prevailing breezes.

3. Boghra Canal Site: In an effort to locate a site convenient to Girishk where sufficient high ground might be available, a reconnaissance was made along the Boghra canal to the west of that city. Ample land is available but is barren and exposed to dust and sand from the surrounding plains. Irrigation would be difficult. In general, no situations could be considered as desirable.

4. Nad-i-Ali Site:

Favorable Characteristics: This site is located near the Fort in the center of the project development of that name. Some HVA offices are presently located there and the experimental farm work will continue in that place. Water exists and the irrigation system is in operation. As a result of previous plantations, the situation is attractive.

Unfavorable Characteristics: Developed as an irrigated farming area, the land is relatively flat and drainage is poor, foundation work will be expensive in view of a high water table. Sanitation will be a difficult problem here for an urban community. Available land is extremely limited. To utilize land prepared for agriculture at a cost of 5,000 to 6,000 afghani per jerib is uneconomic and would cause much criticism. The initial site area alone, of 1,000 jeribs, would represent an investment of 4 to 5 crore afghanis. This site does not possess enough merit to make such a land cost justifiable.

5. East Marja Site:

Favorable Characteristics: This site is located near the center of the project development of that name and situated on land that is unsatisfactory for agricultural use. The required site area is available. Irrigation can be developed. The proposed road south to Chakansur region will pass next to this site.

Unfavorable Characteristics: The site is not too centrally located. Like Nad-i-Ali the terrain is very flat and has no marked slope. Drainage and sanitary installations would present serious problems. The general surroundings are monotonous. Sand dunes to the windward will be a constant source of annoyance. In addition, for the next two years this area will be a dust bowl during the grading and ditching operations required for irrigation purposes.

6. Qalai Bust Site:

Favorable Characteristics: This site begins about two kilometers north of the ancient citadel of Qalai Bust and extends up to the old ruin complex of Lashkari Bazaar. It occupies a plateau on the east side of the Helmand River. The best crossing thereof is near the southern end. There is ample land

available. The site is adjacent to the Shamalan Development, the largest center of population and nearly equidistant from the other two project areas. It is very close to the Lower Saraj area. It lies on the direct route to Yakhchal and the east. This route, when fully developed, will be an important regional road as noted above. The site lies on a plateau bordering the river. It is high and well-drained, with good exposure. Local wells produce water at an average depth of 8 meters. About 1/3 of the area has been under irrigation. The terrain is rolling, generally to the southeast. The views are extensive and provide a panorama of the river valley and the Shamalan canal and farm land patterns. The site abounds in architectural remains dating back to the period of the Ghaznvide Empire. The French Archeologic Mission to Afghanistan has done some digging here and further historic data can be obtained from their reports.

Actually, the site contains two alternate locations, both potentially suitable for the HVA Center. These are located at the north and south ends of the general area. The main differences are found in the relative negative factors for each location and so these are listed separately below.

Unfavorable Characteristics - South: Access to this southern area will require the provision of a river crossing, for which a good location exists. The topography is very irregular and will present problems in surface drainage and irrigation. Grading will be required prior to any construction. The soil is thin in some sections and even minor leveling will expose gravel strata. The soil exhibits evidence of a high salt content. The terrain rises toward the river and thereby reduces the benefits of prevailing breezes and views to the lower portions of the area.

Unfavorable Characteristics - North: There is no suitable river crossing location in this northern area. The terrain is gently rolling and much more favorable for siting purposes than in the southern area. The soil is generally deeper and shows less salt content. Due to the location pattern of the old ruins, land availability is more restricted. Of the two areas in the Qalai Bust Site, the northern one is the more desirable and will permit of easier development.

#### 7. Lashkari Bazaar Site:

Favorable Characteristics: This site lies directly north of the conglomeration of medieval ruins known as Lashkari Bazaar. It extends along the high east bank of the Helmand River, just south of the Bohlan area in the Shamalan

project. It possesses most of the favorable qualities of Site #6. In addition, most of the area has some topsoil. An existing irrigation pattern covers the major portions of the site, although the existing fields are marginal and are not intensively farmed. The terrain slopes very gently toward the river. A grove of existing trees will act as a filter to the air currents next to the river. This site will require the least grading and leveling, and can be built upon immediately. It has an excellent river crossing location.

Unfavorable Characteristics: Like Site #6, access to this site will require the provision of a river crossing over the Helmand. Original land cost may be somewhat more expensive in view of the fact that various portions of the area have been cultivated from time to time.

#### 8. Inakh Site:

Favorable Characteristics: This site is located on the plateau above the farming community of Inakh, on the west side of the Helmand River. Ample area is available. The location of the site in relation to the major project areas is most favorable. Portions of the site are under cultivation but the greater part is open. The soil is a gravelly loam and not too good for agricultural use. The site overlooks the Shamalan Valley and is within 3 kilometers of the river.

Unfavorable Characteristics: The terrain is irregular and has no well-defined drainage pattern. Drainage is further complicated by an uprising gravel bank on the river side of the site, separating it from the lower valley lands. The exposure of this site is very unfortunate, for it is open to the hot winds coming directly off the desert flats of the Dasht-i-margo. Summer temperatures will be high, with the accompanying nuisance of dust and sand.

#### Site Comparisons

Comparative review of the foregoing site analyses reveals that only three sites have adequate area available and are most favorably located in relation to the project areas and the center of regional population. These are Sites 6, 7 and 8, and it is between these that a final selection must be made. All other sites are not only negative in these required characteristics but in addition exhibit other physical faults and can be forthwith eliminated from further consideration.

Closer examination shows that Sites 6 and 7 are located directly on the east bank of the Helmand River, while Site 8 is 3 kilometers distant



therefrom. Site 8 is situated on the eastern edge of the desert. The prevailing summer winds from the southwest will blow hot and dusty into Site 8. The same winds, tempered and cleared by passage over several kilometers of irrigated valley farmland and the river itself, will have a cooling effect on Sites 6 and 7. In view of the extreme summer temperatures experienced in the region, only those sites offering some relief therefrom should qualify as acceptable for the Helmand Valley Authority Center. Site #8 does not meet this very important requirement. This drawback, together with previously mentioned unfavorable characteristics, necessitates the elimination of Site #8 as an acceptable location.

By an interesting coincidence, the two sites remaining, namely Qalai Bust Site #6 and Lashkari Bazaar Site #7, are located in an historic area where an important center of former empire once flourished. It is apparent that the Afghans of 1000 years ago were logical planners and engineers, and recognized the excellence of the situation between the Arghandab and the Helmand river. Located above the junction of the two rivers, on natural lines of communication up the valleys, the earlier siting was governed as much by military factors as by agriculture and food supply potential. Ancient canals, karez traces and the extent of the communities themselves, as evidenced by their widely spread ruins, attest to the sufficiency of the latter. However, with the many potential sites existing along the rivers, it is apparent that the good exposure and greater potential for healthful living in this locality was recognized by these forebears. It is rather fitting, therefore, that this area should once again become the economic and cultural center of a resurgent civilization.

Inasmuch as both the Qalai Bust and Lashkari Bazaar sites share these historic advantages, the final selection between them is appropriately based on the comparative merits of the two sites relative to the physical and economic factors. With respect to land availability, regional location, market accessibility, water supply, dry situation and favorable drainage, the sites are essentially equal. Lashkari Bazaar, however, is quite superior to Qalai Bust in soil conditions, topography, optimum exposure and irrigated facilities, as can be noted by reviewing the individual site characteristics set forth above. In addition, the favorable terrain of the Lashkari Bazaar site will require little grading and preliminary preparation, and will permit an immediate start upon building construction and Center development.

### Site Recommendation

By a rational process of analysis and elimination, it has been demonstrated that Lashkari Bazaar conforms most closely to the desired criteria as specified above under the heading of 'Site Requirements Summary'. It possesses the necessary physical characteristics and complies with all geographic, economic, sociologic, climatic and cultural requirements.

It is therefore recommended that The Administration Center of the Helmand Valley Authority be established and developed at Lashkari Bazaar on the Helmand River.

### Final Comments

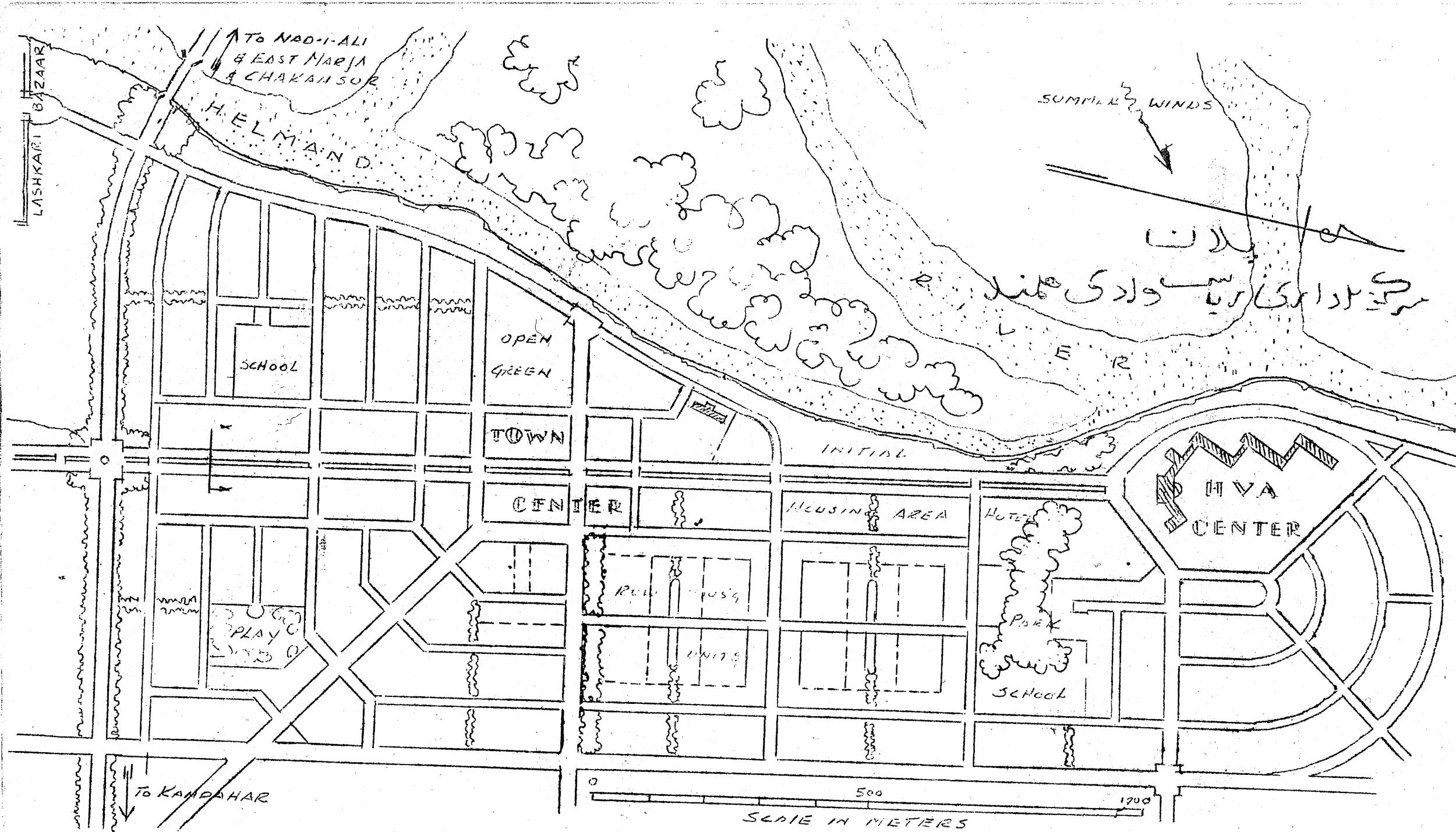
At the present time, the operating efficiency of the HVA is seriously handicapped by a dispersion of inadequate temporary office space in various buildings and locations. Lack of housing for the officials has been a burden to them and has adversely affected recruiting. It is therefore recommended that initial construction for the new Center should be concentrated on housing and office space. A minimum of 54 dwelling units, consisting of single houses, semi-detached houses and bachelor quarters with necessary dependencies, is proposed for the first year. This will provide housing for 30 families and from 24 to 36 single persons. More units should be built if budget funds permit.

For office space, some 40 rooms of various sizes will serve during this period until administrative and operational procedures are more fully integrated and indicate future needs. These rooms may be combined in one or more buildings, as found to be most appropriate by the HVA architect. It is further recommended that HVA build a small section of the bazaar area and this will serve as a nucleus and pattern around which additional bazaars can be constructed by private enterprise.

To assist the Authority in the realization of the desired Center, studies have been made for an economic and pleasing town development suitable to the Lashkari Bazaar site. The results of these studies have been drawn up, revised and refined, and a final town plan has been prepared. This proposed plan, together with an explanatory memorandum, is attached hereto as Appendix A.

10 Hoot, 1331  
28 February, 1953

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U. S. Technical Cooperation Administration  
for Afghanistan.



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مرکز اداری ریه وادی هلمند

SCALE IN METERS  
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APPENDIX A

MEMORANDUM on the DEVELOPMENT

of the

H.V.A. ADMINISTRATIVE CENTER

on the

Lashkari Bazaar Site

I. EXISTING SITE CONDITIONS

The recommended site for the subject center is a plateau extending along the Helmand River just north of the old bazaar ruins. The land rises abruptly some 12 to 15 meters from mean water level to the plateau. Following along the river, the plateau is oriented almost due north and south. From the top of the bluff, on the west and river side, the plateau rises uniformly to the east with an average grade of 2%. Reaching a central flat, the plateau slopes down into the farmlands along the Arghandab River.

The Saraj Canal cuts through the plateau, more or less parallel to the river and approximately 1 kilometer distant, and this canal is proposed as the initial eastern limit of the site. The canal provides irrigation water to the site and fields further south, where it terminates. Existing lateral irrigation ditches leave the canal at right angles and flow directly toward the river. The canal spoil banks have acted as dikes in stopping soil wash and erosion on the site. Another major canal, bringing river water from upstream, enters the site from the west in a karez and then flows in a deep open ditch due south across the western section of the site. The water carried by this canal does not serve the site area but irrigates the agricultural areas near Qalai Bust, several kilometers to the south.

The soil on the site is a clayey loam, containing considerable gravel. Indications show it to have a depth of 1 meter or more, and it is underlaid with a strata of medium gravel. The soil has been cultivated from time to time in over 65 per cent of the site area.

The Helmand is a meandering river and flows around many self-built islands. One of these is located across from the site and, as a result of local forestry effort, has been stabilized by a good grove of trees. Immediately below this island, and about 300 meters up from the bazaar ruins, the river flows in a single narrow channel. This point is very favorable for a bridge or ferry crossing. Just north of the island, the site projects into the river on a slight

promontory, with excellent views up and down the river and across to the fertile Shamalan canal farmlands in the Bohlan district.

Records kept at the MKA Chah-angir camp, less than 20 kilometers away, shows for the three hottest summer months that the normal daytime temperature exceeds 100 degrees (F), with a peak of over 115°. After nightfall, the temperature drops some 35 degrees on the average. With the riverside location of the site, somewhat lower temperatures can be expected. Humidity fluctuates but is generally very low. Average rainfall is approximately 4 inches, mostly concentrated in the first two months of the year.

Prevailing regional winds during the summer months come from the southwest across the Margo desert and vary in intensity. Although the air movement is welcome, the winds are often hot, dry and dusty. These winds will be moderated and cleansed to some degree in crossing the valley agricultural green belt and the river before reaching the site. In addition, the aforementioned island tree groves will act as a natural air filter for the site.

The site contains neither dwellings nor inhabitants, so there will be no resettlement problems. Only two ancient ruins exist within the proposed area and these are so far disintegrated that they have no historic or archeologic value. The rest of the site is clear and is, except for waste banks of the canals and karezes, appropriately level.

## II. GENERAL DEVELOPMENT PROPOSALS

The submitted town development plan is the result of many studies made to fit the requirements of existing site conditions, economic and social factors, and community organization. Fortunately, the three controlling physical site features were such that they favorably influenced the final design as presented. First, the river crossing location dictated the alignment of the regional highway link connecting east to the Yakhchal road. This highway forms a natural southern limit to the town. It is proposed to build this roadlink as a limited-access highway, with a greenbelt on each side, and it will function both as a pleasant approach to the Center and as a through-traffic by-pass. The greenbelts will act as noise and dust screens and will insure against unsightly roadside developments.

Secondly, the aforementioned promontory overlooking the Helmand River and its productive valley offers the most suitable and appropriate location for the offices of the Authority which owes its existence to the importance of this natural water resource. The location is about 1900 meters from the river crossing and very favorably situated.

Emerging from the river bank, just below the HVA offices site, is the third controlling physical feature, the previously mentioned main canal carrying water south to the Qalai Bust area. As a major unit in the district irrigation system, it cannot be eliminated, relocation would be uneconomic and time-consuming, piping is not to be considered. The logical action is to incorporate the canal as an integral part of the town plan. Therefore, it is proposed to make it the center of the required main boulevard connecting the HVA office site with the through highway and river crossing. As shown on the town development plan in section, the canal will flow in a central grass strip with a wide roadway on each side, suitably planted with shade trees. The existing excavation mounds and soil to be removed to newly slope the canal banks can be used for brick making purposes, thus improving the boulevard section and providing building material in one operation. (Cast-iron pipe of large diameter, now lying discarded at Zambuli camp, can be salvaged and used to carry the canal under the through highway.) It is further proposed to ultimately extend the boulevard to one of the main entrance gates of Lashkari Bazaar and so provide a fitting connection between the old and the new.

The initial town development site is thus physically bounded on the north by the HVA office center, on the south by the regional highway, on the east by the Saraj canal and on the west by the Helmand River itself. The area so bounded contains approximately 1,000 jeribs or 475 acres, as recommended in the original site study report. The main boulevard runs north and south, and provides a backbone around which to develop the town pattern. Within these boundaries the town forms an elongated rectangle, oriented north-south, with a length approximately 2-1/2 times its width. This permits maximum advantage to be taken of the fine river frontage and prevailing winds. The recommended general development plan is shown on Plate IV.

It must be remembered that the main purpose of this new community is to provide centrally located installations and facilities for the conduct of wide-spread official administrative, research and operation activities in connection with the economic development of the entire Helmand watershed. The prime function and economic base of the community is public business. Supplementing this will be private business having working and financial relations with the Authority and those activities providing goods and services to the inhabitants. As such, it is not desirable to encourage production industries in the town itself, thereby introducing accompanying industrial nuisances and problems.

Home industries, storage facilities and warehousing are acceptable activities and can be located on the outskirts. All other industries are better located along the river, within easy reach of town but sufficiently removed so that they do not adversely affect the living and working amenities of the HVA community itself.

Therefore, it is proposed to develop this town as a basically residential community, and the layout plan prepared for the initial 1,000 jeribs of area does not provide for any industrial zone of any kind. The better residential districts extend along the river and around the HVA office center. Increasing density of housing is proposed progressively to the east and southeast. A separate town center is established to serve local needs.

On the accepted principle that conflicting centers of activity should be separated, the town center is located 1,200 meters south of the HVA building group. Appropriately, this secondary public area is related more closely to the physical center of the community and is more accessible to all the residents. Here will be located the various public buildings and facilities, commercial offices and the main shopping district. This area will cater to the daily living needs of the local people and act as a regional marketing center for the surrounding rural population. As a result of this separation, the normal confusion and traffic noise to be expected in an urban center will not be present to effect the efficient operations of the HVA Administration situated apart at the northern end of the town.

The HVA Administrative Center community should be given a name at the earliest opportunity so that it may have individuality and character. In appropriate recognition of the importance of the life-giving river system whose valley is now being nationally developed, it is suggested that the Center be known as the Town of Helmand.

### III. STREET PATTERN

The general layout of the town streets form a simple rectangular pattern, in harmonious scale with the size of the community. The established main boulevard gives direction to the scheme and forms the principal internal artery of the town. To supplement this thoroughfare, a parallel wide street is located 500 meters (1,650') to the east. Two major east-west streets, one leading to the HVA office group and the other through the town center, provide good cross connections. A diagonal avenue leads directly from the center to the regional highway and gives direct access to the shopping area from the east. These

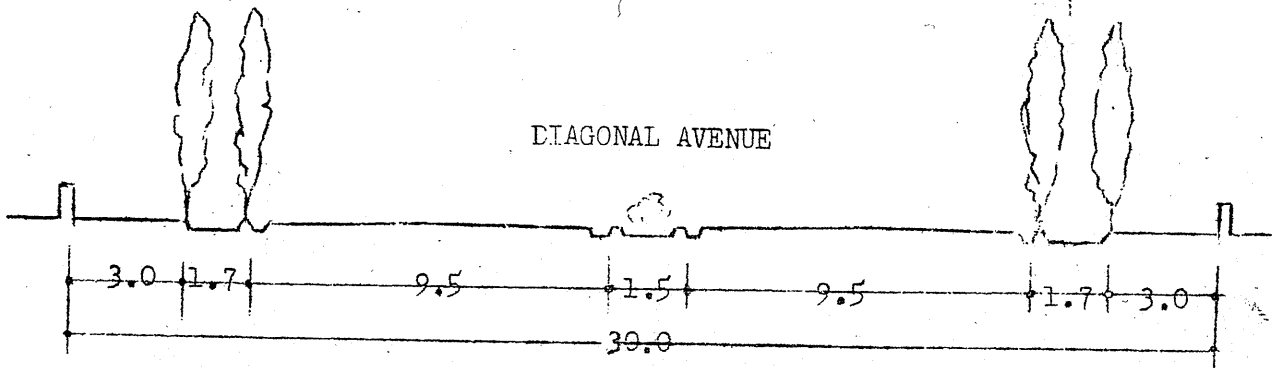
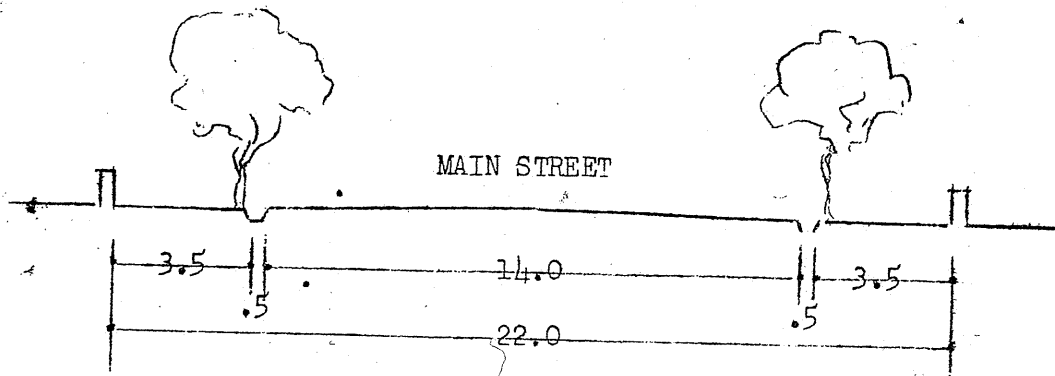
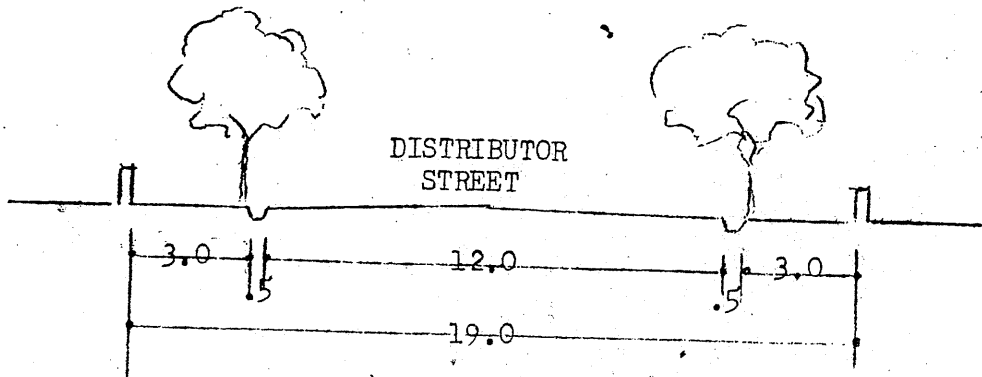
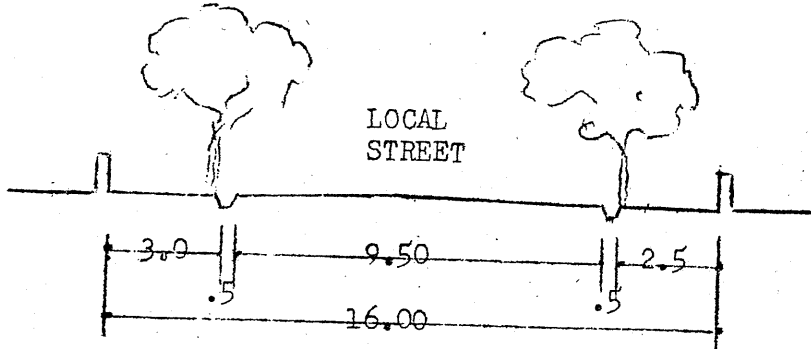
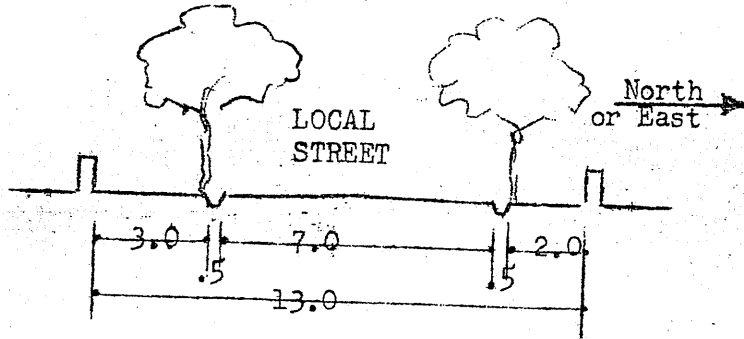
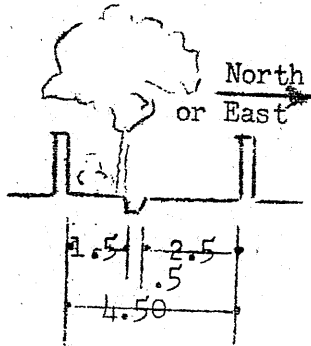
TYPICAL  
STREET SECTIONS

WALKWAY

PLATE V

HVA  
ADMINISTRATIVE  
CENTER

Scale - 1:200





streets and avenues establish the major thoroughfare pattern and provide complete interior circulation.

The minor streets east of the boulevard run parallel to it, while those lying west thereof lead directly to the river. The local streets are so laid out as to discourage their use by through traffic. At the north, the streets are curved and terminate at a river road. This was purposely done to limit the growth of the town any further north, where the farm villages exist and the land cultivation is more intense. There is ample space for future growth to the east and south.

To reduce street construction and utility costs, very long blocks are proposed. Walkways are provided through the center of each, which will facilitate pedestrian circulation and carry main irrigation ditches. It is suggested that the street side gutters be graded to drain into these ditches, rather than to the street intersections. This will greatly reduce the number of culverts under the streets and will mostly eliminate the gutters at sidewalk crossings.

Typical proposed street cross-sections are shown on Plate V. It is recommended that the streets should be graded across the full section, but only seven meters width of roadway be graveled for traffic. The roadway can later be widened when needed. Trees should be planted as soon as the grading is completed.

#### IV. DETAIL LAYOUT

The original town plan was drawn up on a map prepared from an uncorrected aerial survey, with a scale of 1 cm. to 81 meters. When the site topographic survey is completed, the town plan can be more accurately drawn up at a larger scale. At that time, detail studies can be made for site locations for the various public, semi-public and commercial buildings, as well as additional open areas. Following is a basic list of buildings and areas to be situated. It should be remembered that this is NOT a construction program but a list of those facilities which will be needed over a period of years and for which sites should be reserved. The HVA will decide the priority of need.

SITE LOCATION AND RESERVATION SCHEDULE

TOWN OF HELMAND

A. PUBLIC BUILDINGS

	<u>Responsibility of</u>
1. HVA Offices	1. Helmand Valley Authority
2. Governor's Offices	2. Ministry of Interior
3. City Hall	3. Ministry of Interior
4. Police & Jail	4. Ministry of Interior
5. Post Office, Telephone & Telegraph	5. Ministry of Communications
6. Court House	6. Ministry of Justice
7. Board of Trade	7. Ministry of National Economy
8. Tax Office	8. Ministry of Finance
9. Education and Library	9. Ministry of Education
10. Schools (3)	10. Ministry of Education
11. Public Health & Clinic	11. Ministry of Public Health
12. Hospital	12. Ministry of Public Health
13. Weather Bureau	13. Ministry of Education
14. Publication & Tourist Office	14. Press Department
15. Printery	15. Press Department
16. Army Post	16. War Ministry
17. Archeologic Office & Museum	17. Ministry of Education
18. Exhibition Building	18. H.V.A.

B. SEMI-PUBLIC BUILDINGS

	<u>Responsibility of</u>
1. Jami Mosjid	1. H.V.A.
2. Hotel & Cottages	2. H.V.A.
3. Public Baths	3. Ministry of Interior
4. Motorserai	4. H.V.A.
5. Carvanserai	5. H.V.A.
6. Cafe'	6. H.V.A.
7. Disposal Plant	7. H.V.A.
8. Utility Buildings	8. H.V.A.
9. Gaudy Khana	9. H.V.A.

C. COMMERCIAL BUILDINGS

	<u>Responsibility of</u>
1. Gas Station	1. Company
2. Motor Service & Repairs	2. Company
3. Bank	3. Company
4. Cinema	4. H.V.A.
5. Electric Service	5. H.V.A.
6. Initial Bazaar Block	6. H.V.A.
7. Business Offices	7. Company
8. Warehouses	8. Mixed
9. Public Market	9. H.V.A.
10. Club House	10. Mixed

D. PUBLIC AREAS TO BE LOCATED

1. Public Garden
2. Sport Grounds
3. Small Mosjid Sites
4. Women's Garden
5. Green Areas
6. Cemetery
7. Air Field

## V. HOUSING

Designs for the initial housing to be built for HVA personnel, some of which will be available for TCA technicians, have been prepared by Mr. Antonio Iseppi, the HVA Architect. There are two types of single family houses, a semi-detached design and two apartment-hotel houses for single persons. The first construction area is proposed on either side of the main boulevard, just south of the HVA Office Center. This will reduce first-stage utilities costs. House sewage can be handled by a central bank of septic tanks, with outfall into the river.

In order to give a visual effect of openness, which is desirable in a hot climate community, it is proposed that most of the housing should be single or semi-detached in type and be located on individual lots. Lot sizes should generally range from 1/3 to 1/2 jerib (1/6 to 1/4 acre) in area, with a few large lots for imposing private homes. To provide for the lower-paid personnel, a design has been prepared and locations reserved in the town plan for row housing. This row housing will be arranged in courts, around a central green. To keep costs down, a central water outlet will be located in this green. Sanitation facilities will be modified local type, situated in the private yards in the rear of each dwelling unit.

House construction will be basically adobe brick, on a stone or brick foundation. Due to the urgent need for housing, it is proposed to build the first housing and office units using modified present local techniques. Later construction can serve for the introduction of experimental improvements and further modifications. Extreme changes in construction methods should not be considered.

## VI. CONCLUSION

The above material briefly reviews the proposals and recommendations for the building and development of the new town. Later studies should be made for land use and zoning regulations, policies to be adopted in regard to land ownership, controls over adjacent land to make certain it remains in agricultural use only until ready for development. Building regulations and other necessary legislation to protect and improve the new town. These studies can be carried out under the direction of the technical divisions of the Helmand Valley Authority.

15 Hoot 1331  
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