

CONAL/URBAN DESIGN ASSISTANCE TEAM (R/UDAT) OF THE REGION BETWEEN ANN ARBOR & YPSILANTI, MICHIGAN  
The Urban Planning and Design Committee of The American Institute of Architects / June 21-26, 1978

NA9125  
.M52H874  
1978  
c.2

A STUDY  
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# Huron Valley inter-urban

# GROWTH ANALYSIS

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# STINECON

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# introduction

The American Institute of Architects, through its committee on Urban Planning and Design, provides a community service called Regional/ Urban Design Assistance Teams (R/UDAT). Since its inception in 1967 about 50 teams have visited cities throughout the country. Architects, urban designers, planners, engineers, lawyers, economists, sociologists and other disciplines apply their expertise in response to a request for help from communities. Members of the team perform this task on a voluntary basis with the assistance of students from local schools of architecture and other community resource persons. Coordinated by the local A.I.A. chapter, the team's visit lasts about four days. During this time the team meets with community people, develops an analysis from a fresh perspective and offers a comprehensive approach toward the solution of urban problems.

Concern by local communities and institutions revolving on the problems of the area between the cities of Ann Arbor and Ypsilanti in Huron River Valley was the basis for the formation of this R/UDAT team.

The study area consists of several square miles in Washtenaw County where the townships of Ann Arbor, Superior, Pittsfield and Ypsilanti converge. It is the obvious area where growth from Ann Arbor and Ypsilanti cities will meet.

The Huron River Valley at this location is quite beautiful; it is sparsely developed with residential/rural areas to the north and west, and institutional and county users to the south and east.

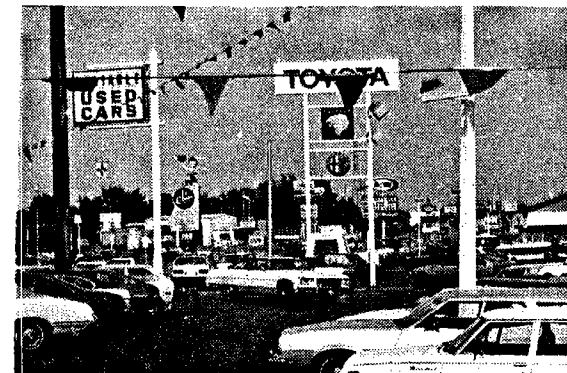
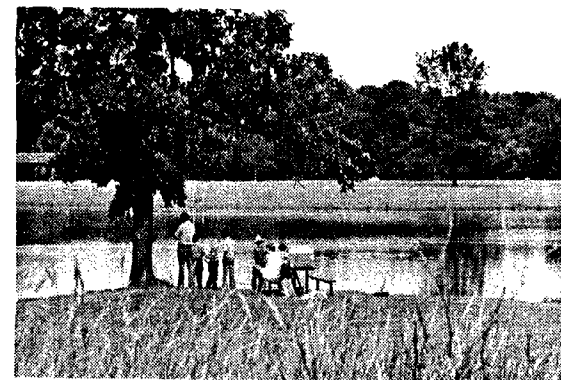
The team was specifically charged to study and report on:

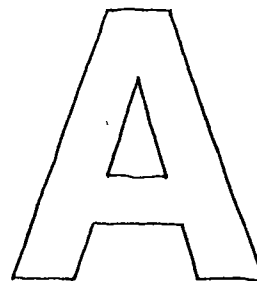
- Existing amenities, both man made and natural.
- Growth pressures and potential. Suggested mechanisms or guidelines for directing and controlling it.
- Transportation and access to the area, as well as other services required and ways to meet those needs while minimizing the impact on the river valley.
- Possibilities for governmental and institutional cooperation.
- Optimum use of land in the area, both within and outside of a medical services district.

Growth is the key issue, its physical form and its controls.

The county, townships and cities all have planning authority and have developed plans for the area. To realize the full potential for quality growth in the area a need for cooperative planning does exist.

The team met with community groups and became acquainted with local conditions at first hand by means of site visits and tours both by air and bus. A public hearing was held and the team listened. The team members closeted themselves for intensive sessions, calling on local resource people as needed to define problems. The information was analyzed and courses of action, synthesized, tested, and refined. Finally, the study report was presented to the community in a public meeting.





# opportunities & constraints

The initial reconnaissance, discussions with local parties, and visual inspection surfaced opportunities and constraints considered by the team to be significant.

## SOUND ECONOMIC BASE

The large percentage of institutional employment provides a stable base enabling capital programs to be undertaken with confidence.

## HUMAN OPPORTUNITY

The institutions provide an unusually broad variety of opportunities to area residents including cultural, educational, and recreational.

## THE RIVER CORRIDOR

The Huron River Valley offers active and passive recreation and is a unique resource for environmental studies. It offers a clear opportunity to re-establish our contact with the natural environment.

## ENERGY FACTORS

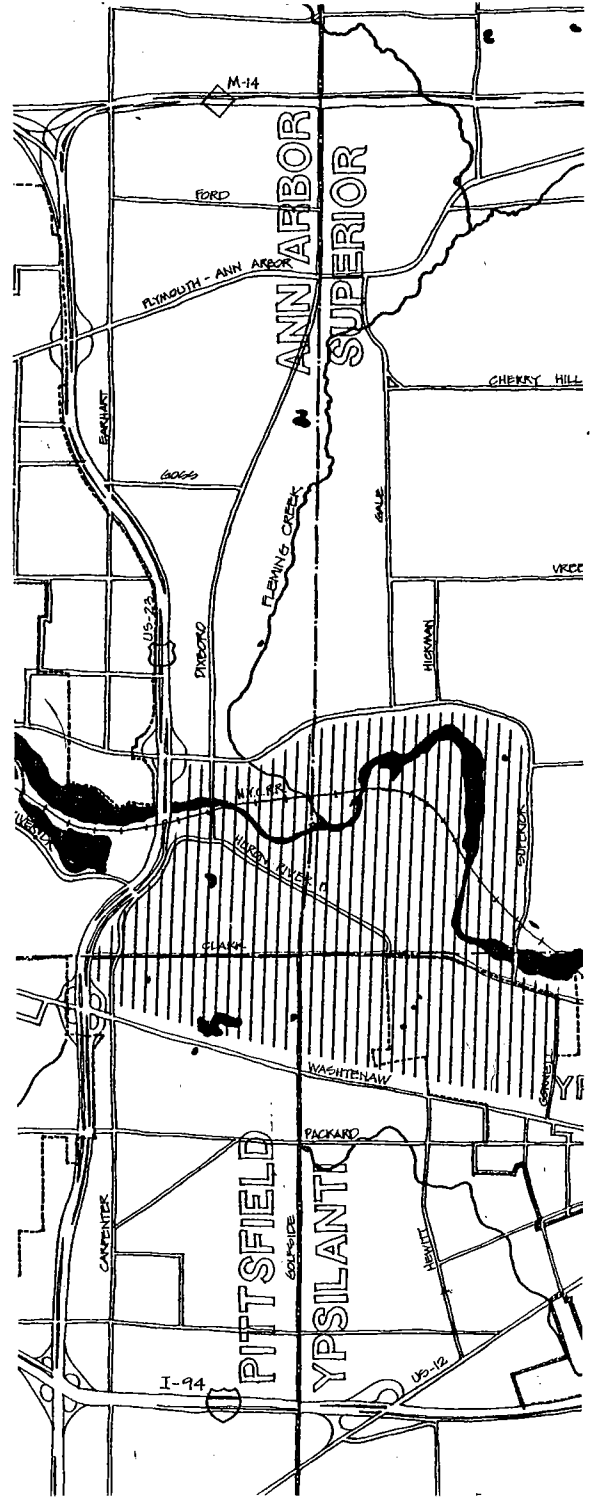
Uncertainties as to the availability and cost of natural gas has triggered an examination of alternate energy sources and a look at means to reduce demand and improve the management of energy systems. The load characteristics of the major institutions and opportunity for new development to be energy sensitive are important and unique to the study area.

## GROWTH MANAGEMENT

Reorganization of the opportunities will depend to a large degree on the "Management" of new growth. This requires cooperative planning between the local governmental units and the major institutions. Lack of effective cooperative planning and participation in joint growth policies is identified as the principal constraint to orderly development.

# B

## development options



# B2

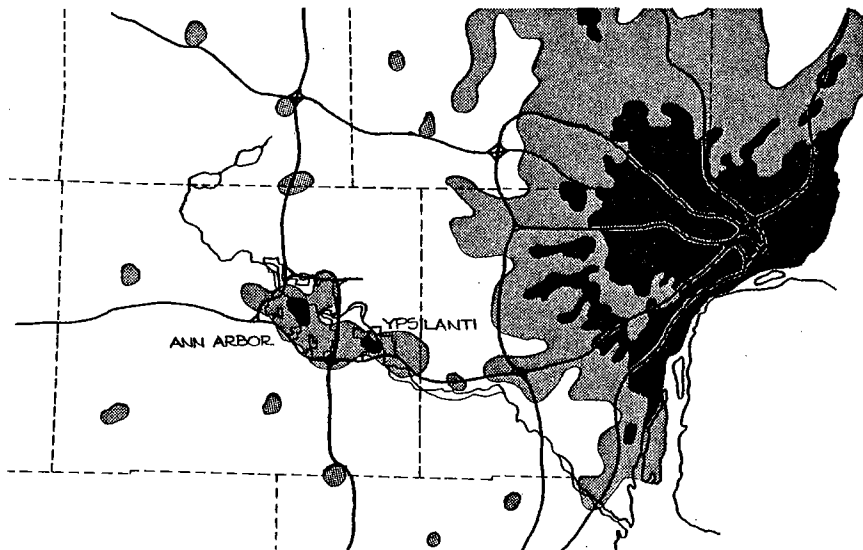


Fig B1 REGIONAL LOCATION: CURRENT URBANIZATION

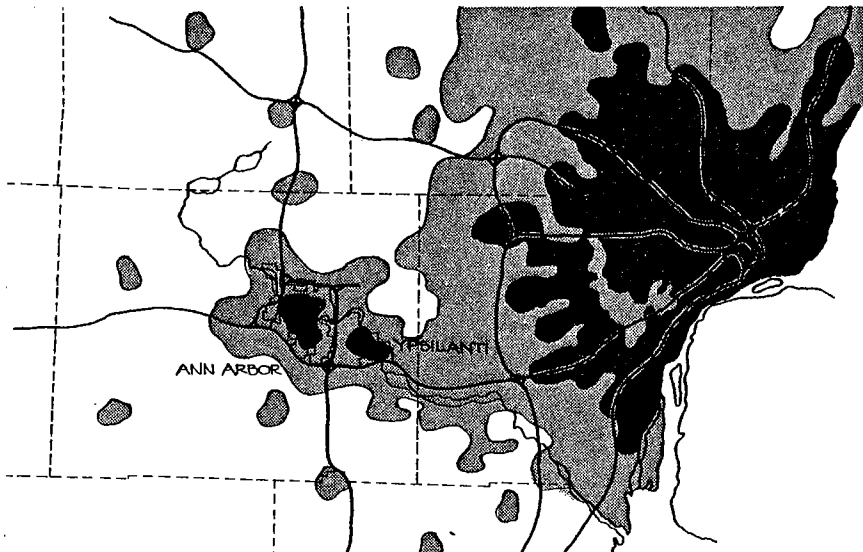


Fig B2 REGIONAL LOCATION: FUTURE URBANIZATION

## REGIONAL CONTEXT

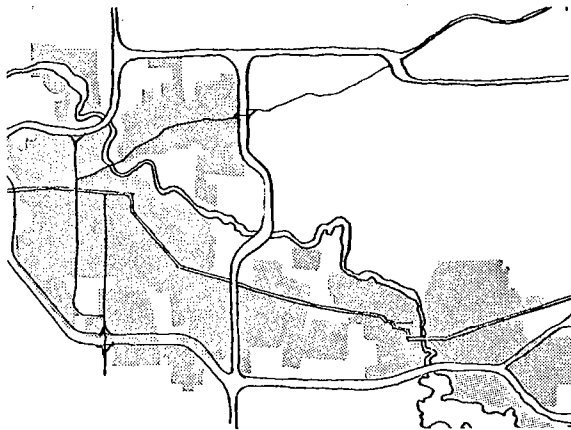
This section provides a brief summary to the regional setting and physical context for the study area.

The area under review is located between Ann Arbor and Ypsilanti cities, located in the eastern half of Washtenaw County. It lies approximately 30 miles from downtown Detroit. Figure 1 shows the existing urbanized areas in the area surrounding Washtenaw County, together with the major road network.

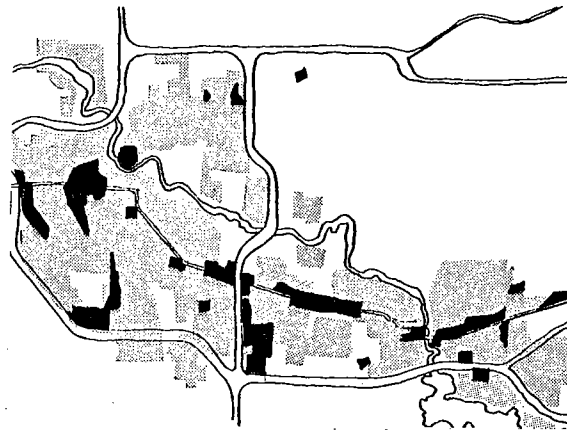
Despite its proximity to Detroit and other urban areas, the county historically has maintained its own identity and autonomy. During the past few years development has extended westward from metropolitan Detroit and is beginning to merge with Ann Arbor-Ypsilanti built-up area. The county's population reached 260,000 in 1975; this represented only six percent of the total population of the Southeast Michigan region extending from St. Clair Shores in the north and Monroe in the south (the Southeast Michigan Council of Governments: SEMCOG).

Future growth trends<sup>1</sup> suggest that new development will continue to be focused in the western half of Wayne County and eastern portions of Washtenaw County. The construction of the M-14 east-west freeway is also likely to accelerate urbanization in this area (Figure 2). Population projections for the county indicate a year 2000 total of about 445,000 persons--representing a 75 percent increase over the 1970 figure.

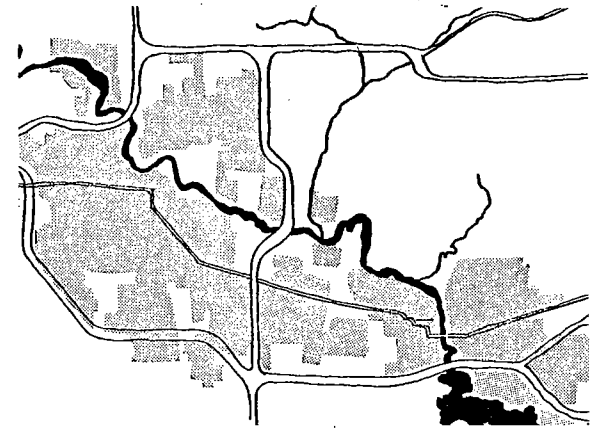
<sup>1</sup>1990 Land Use Policy Plan: Southeast Michigan Council of Governments.



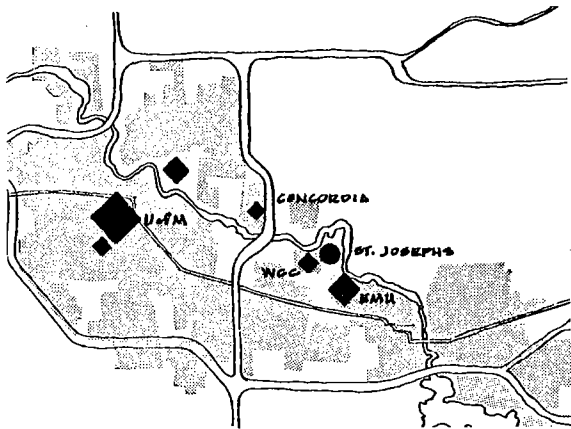
EXISTING URBAN AREAS



RETAIL/COMMERCIAL CENTERS



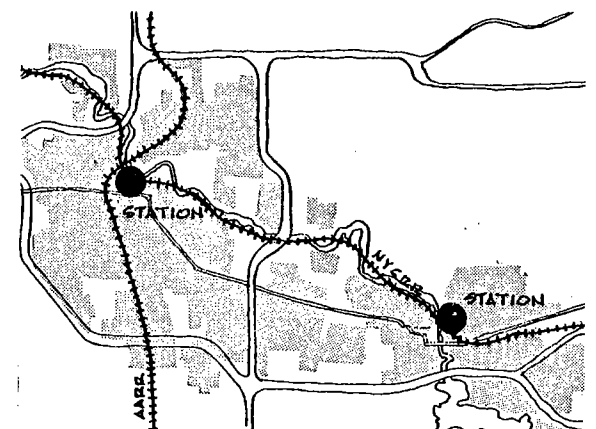
HURON RIVER



INSTITUTIONAL/HOSPITAL SITES



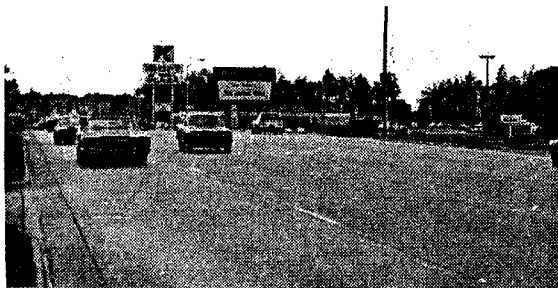
EMPLOYMENT SITES



RAILROAD STATIONS



B4



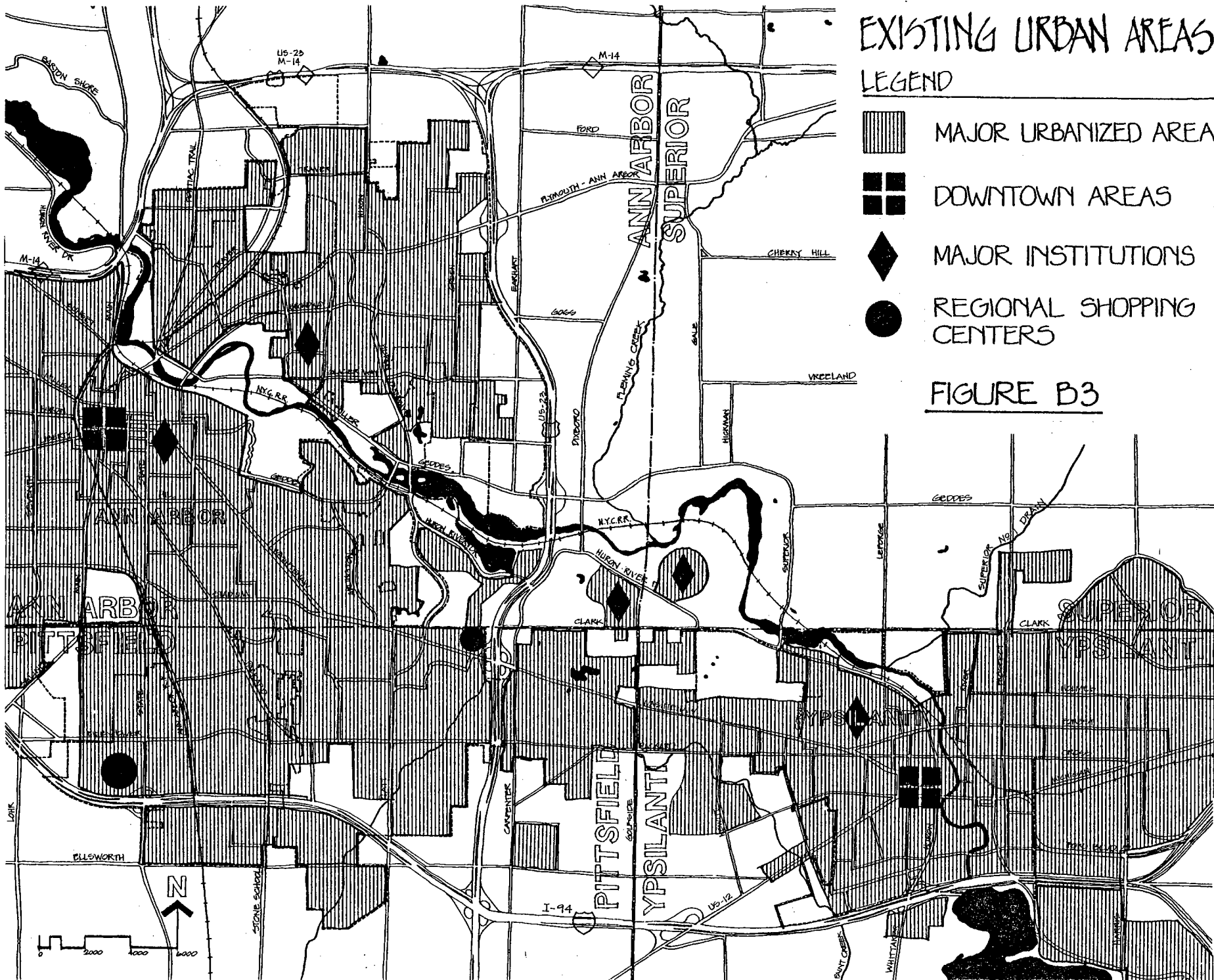
AREA CONTEXT  
Existing uses

Figure B-3 illustrates the area context and existing land uses within the study area. The area context map involves much of the Ann Arbor and Ypsilanti urban areas and respective central business districts; it extends north to the M14 freeway and southward to Interstate 94. This area contained a total population of 193,500 persons in 1975: 119,500 in Ann Arbor and 74,000 in Ypsilanti City and Township. In addition, the area was estimated to provide<sup>2</sup> a total of between 95,000 and 100,000 jobs.<sup>2</sup>

Existing land uses and facilities are characterized by:

- The increasing spread of residential, commercial and institutional uses in the outlying areas of both Ann Arbor and Ypsilanti, particularly in areas of land between these two centers.
- The range and scale of major educational and medical facilities including the University of Michigan (33-34,000 students), Eastern Michigan University (18-19,000 students), Washtenaw Community College and St. Joseph's Mercy Hospital.
- The network of major transportation routes including Interstate 94 and routes 23 and 14, and the Penn Central railroad providing commuter service to downtown Detroit.
- The Huron River together with adjacent recreation and open space areas.

<sup>2</sup>Studies by Washtenaw Planning Commission, 1978.



# EXISTING URBAN AREAS

## LEGEND

-  MAJOR URBANIZED AREA
-  DOWNTOWN AREAS
-  MAJOR INSTITUTIONS
-  REGIONAL SHOPPING CENTERS

FIGURE B3

# B6

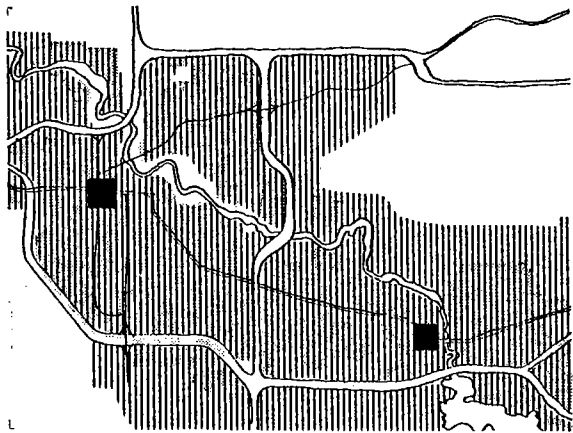
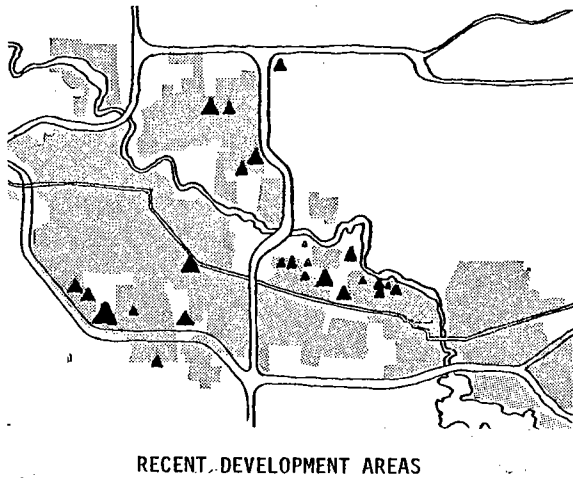


FIG. B4 OPTION 1: CURRENT TRENDS

It is obvious that all underdeveloped land and underutilized areas within the project area will be subject to considerable pressure over the next decade or so. How these areas might be developed and co-ordinated with current uses and proposals is a key task of the RUDAT study. Our work program has involved a planning process in which, as an initial option, all future land development was assumed to reflect past and current trends in terms of land use demands, political and institutional policies, market and financial conditions, etc.

Two alternative plans, options two and three, were then analyzed in contrast to the "Trends" plan, in an attempt to identify the physical, economic and political implications of these alternative strategies. In all three cases the projected population (for the year 2000) for the context study area remains consistent: i.e., an anticipated growth of approximately 66,000 people (or a 22% increase) from 1975.

Figures five, six, and seven illustrate in diagrammatic form the above alternatives: Option 1 assuming the trend situation; option 2 assuming very limited development within the study area; and option 3 examining the implications of considerable mixed use growth occurring in the study area.

#### OPTION ONE: TREND DEVELOPMENT

Figure 4 illustrates a trend situation in which future growth patterns follow the historic pattern for the area. This alternative assumes that:

1. No basic change is made in the methods of land control or in patterns of jurisdiction;
2. Land needs continue to reflect past and current market demands for the region;
3. Current plans and programs for key institutional land holdings in the area are not subject to revision.

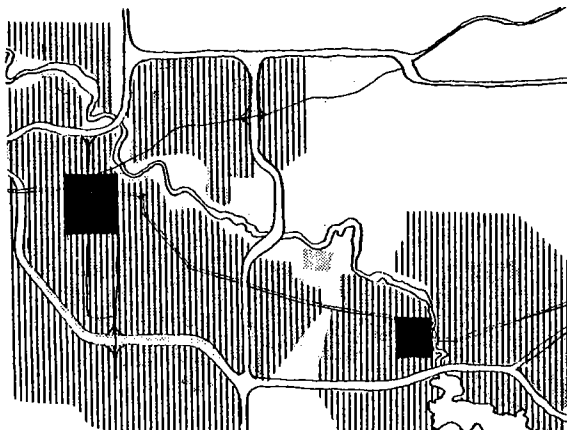


FIG. B5 OPTION 2: LIMITED GROWTH

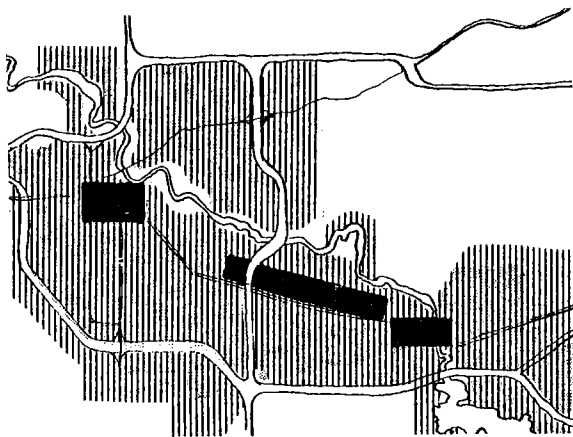


FIG. B6 OPTION 3: INTENSIVE GROWTH

#### OPTION 2 LIMITED GROWTH (figure 5)

The second option examines an alternative in which future development within the project area is limited to existing commitments in an attempt to achieve the following objectives:

- to halt the continuing merger of the Ann Arbor and Ypsilanti urban areas;
- to encourage development within the existing urban centers and reinforce the identity of Ann Arbor and Ypsilanti cities;
- to encourage the development of a new county park along the Huron River, sited adjacent to existing major institutional facilities.

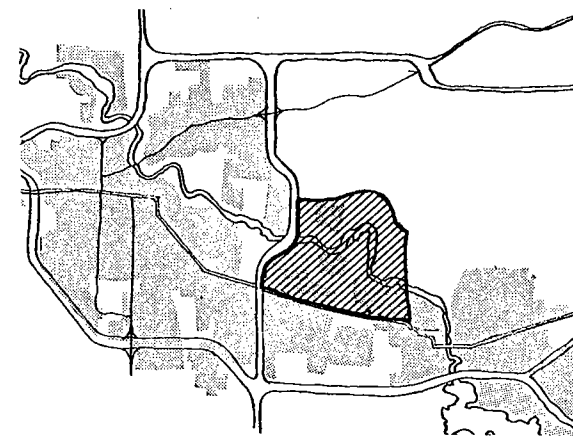
#### OPTION 3 INTENSIVE GROWTH (figure 6)

A third alternative achieves a somewhat different impact on the study area by encouraging growth between Ypsilanti and Ann Arbor. This option assumes the following:

- That growth management controls can be formulated and implemented to assure orderly growth of high quality.
- That future investment will continue to occur adjacent to St. Joseph's Mercy Hospital in terms of medical and support services such as office and hotel/motel development.
- That higher density development - for example, in the form of additional townhouse/apartment construction - can provide savings in terms of efficiency in infrastructure services, land costs, etc.
- That the development of a new community focal point roughly midway between Ypsilanti and Ann Arbor provides an opportunity for the two existing centers to continue to function independently as viable, growing downtown areas.

This strategy essentially allows for moderate and low density development adjacent to existing urban areas, including the infill of all available sites within the study area. Commercial uses occur in strips along major highways; new housing areas are located in expanding suburban areas north and south of the study area.

These options are now examined at a more detailed level for the study area in the following pages.



LOCATION OF STUDY AREA

B8

#### PROJECT AREA/DEVELOPMENT OPTIONS

The project area has been generally defined within the boundaries formed by Geddes Road to the north, Superior and Cornell to the east, Washtenaw Avenue on the south and US-23 to the east. The area is approximately 4 square miles in size.

In order to make some judgements as to future land use and development strategies, it was necessary to identify what the existing conditions are. The area has a number of strong influencing factors, however, with some analysis it becomes apparent that it has four distinct zones, each with special characteristics, problems and opportunities.

##### 1. Geddes Road to River

A scenic, heavily wooded section of single-family homes on large parcels of land. Three sections are, however, cut off from the rest by the railroad with one containing the sewage treatment plant and another a major electrical substaion.

##### 2. The River

Between US-23 and the Superior Road bridge the river can be characterized as having great potential but generally undeveloped for public use and in a state of neglect.

##### 3. River to Clark Road/Huron River Drive

An area dominated by the land holdings of the three major institutions - Washtenaw Community College (235 acres), St. Josephs Hospital (213 acres) and Eastern Michigan University (40 acres north of Huron River Drive and 142 acres south). In addition, there are key parcels of undeveloped land - the Thall property of 60 acres, a linear parcel of 28 acres surrounded by the hospital and approximately 50 acres between the Community College and US-23.

##### 4. Clark Road to Washtenaw Avenue

A mixture of apartments, single-family homes, undeveloped parcels, the Eastern Michigan University athletic complex and the strip commercial boundary of Washtenaw Avenue.

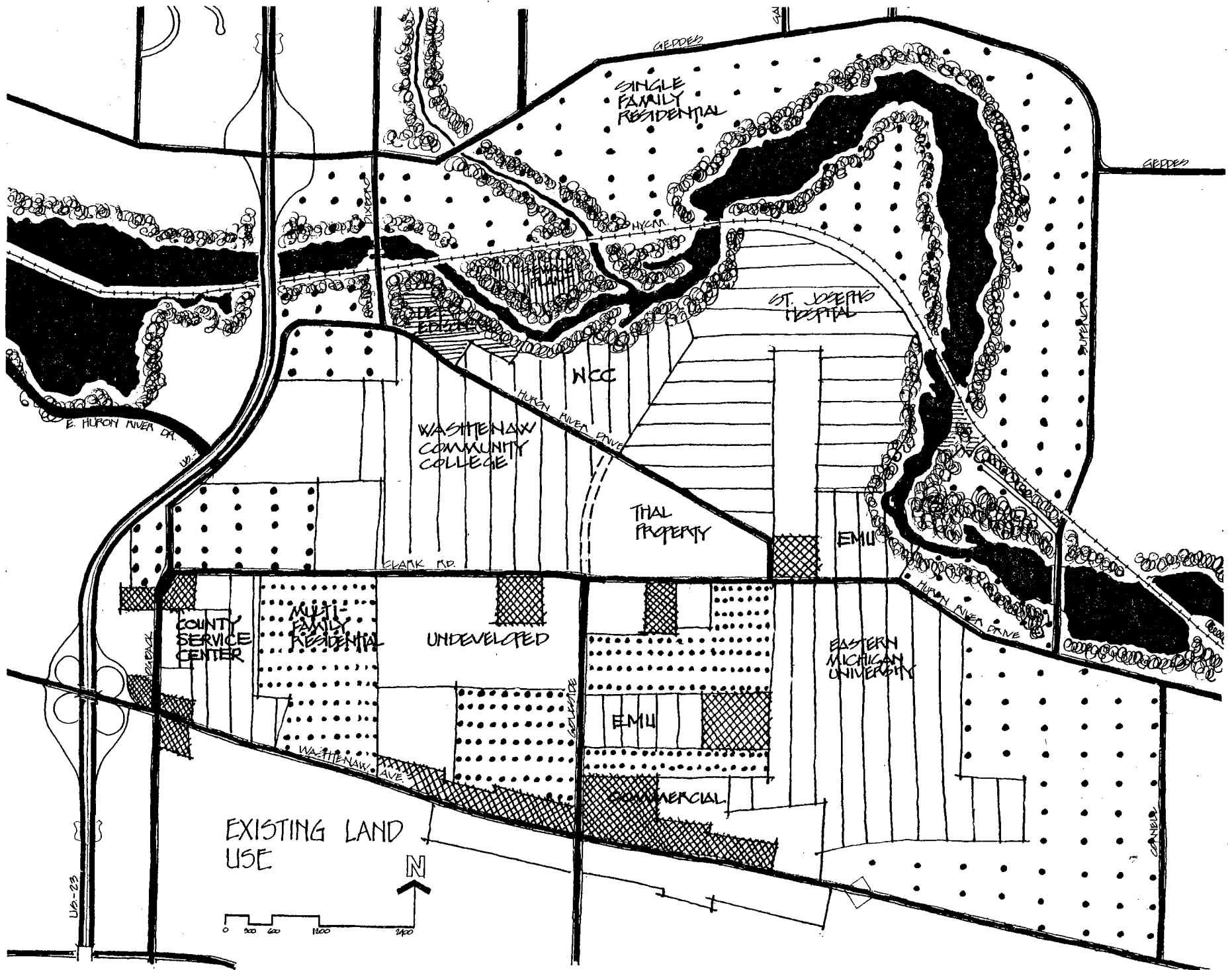
From this background information, the R/UDAT team felt that there was a number of reasonable alternatives available to the communities and to serve as a basis for future planning. These were called:

Option 1 - CURRENT TRENDS

Option 2 - LIMITED GROWTH

Option 3 - INTENSIVE DEVELOPMENT

They are explained on the following pages.



# B10

## OPTION 1 - CURRENT TRENDS

The assumptions of this option are based on the premise that the current trends of land use policy and development will continue in the future.

### LAND USE

The pattern of development in the project area will be effected primarily by the expansion or development programs of the three institutions - Washtenaw Community College, St. Josephs Hospital and Eastern Michigan University and the uses approved for the major undeveloped parcels of land, the Thall property and the 28 acre linear tract surrounded by the hospital.

Washtenaw Community College has stated that they do not expect to add more than one additional major building and it is their intent to keep their property as open space. Therefore, no modification of their land use has been assumed. Eastern Michigan University has indicated that they do not have a specific program planned for the 40 acre parcel north of Huron River Drive. It has been assumed that they may choose to sell the property and it would be developed for commercial use.

St. Joseph's Hospital has a current long range development plan. The proposals contained within that plan have been projected to happen. They include the addition of a hotel, commercial and professional office space, medical research and multiple family housing.

It has been assumed that the 28 acre parcel and the Thall property will become commercial and that the pattern of commercial development along the south of Clark Road will continue in addition to the filling-in of undeveloped tracts with multi-family housing.

The area near the railroad crossing of Dixboro Road is proposed as the location for a new mass transit station on the rail line. It has been projected that this will produce more commercial and multi-family zoning in that area as well as along US-23 and Hogback Road.

The area between Geddes Road and the river would probably remain single-family residential, with the likelihood, however, of the larger parcels being sub-divided and increasing in over all density.

### ROADS/TRANSPORTATION

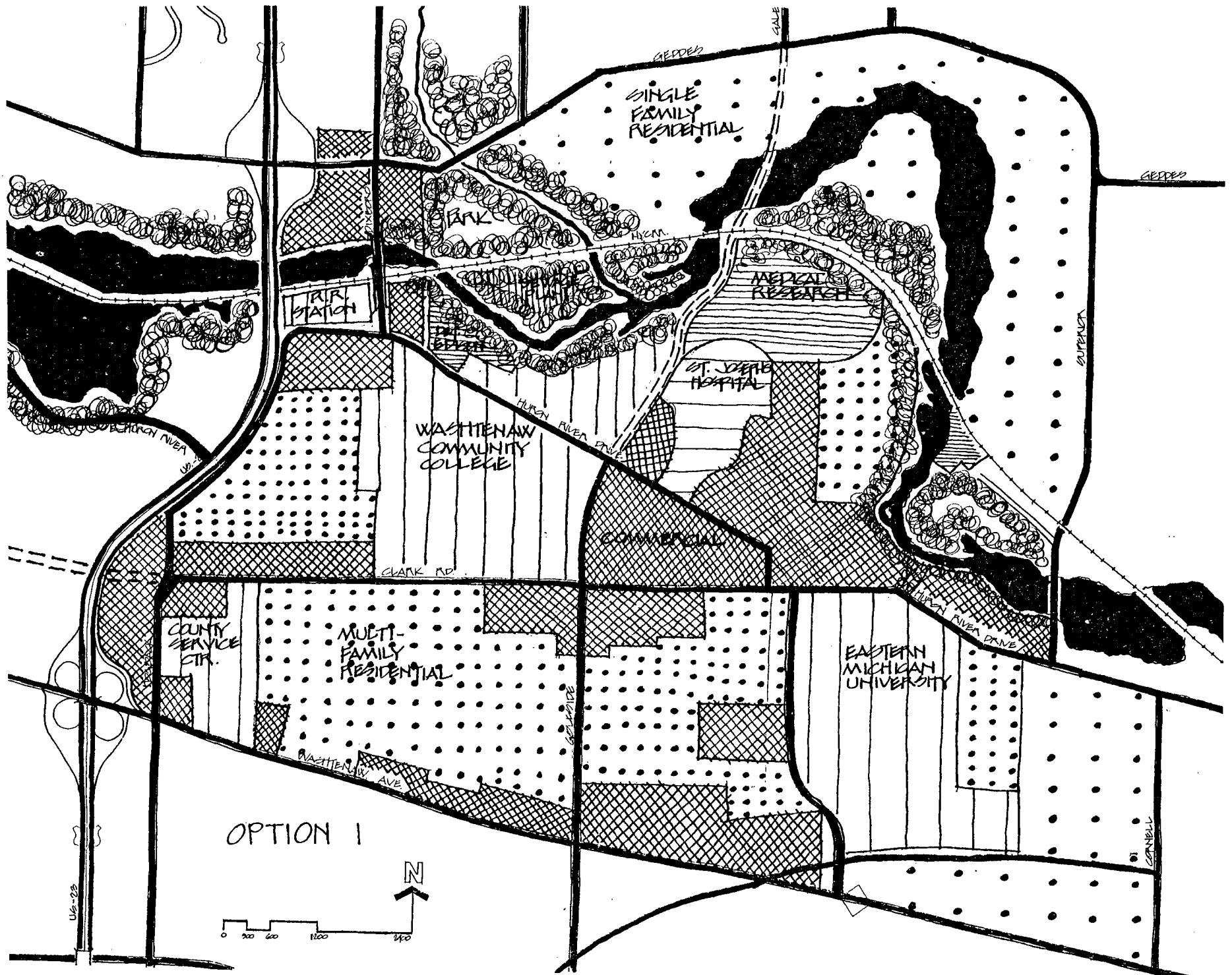
The extensions of Golfside and Hewitt Road are expected to be implemented. However, the extension of Golfside north to Gale Road has been assessed as doubtful, due to land acquisition and environmental problems. The westward extension of Clark Road has also been indicated as only a possibility.

A Dixboro Road bridge across the railroad and river north of Huron River drive is proposed as well as a mass-transit station immediately to the south of the river at this location. It should be noted that this is a small piece of property which may not allow sufficient parking.

### OPEN SPACE/GREENWAYS

This option assumes that the development of public space and improvement along the river corridor will be pursued and coordinated with the institutions. It is suggested that Mill property south of Geddes Road being considered for a park be obtained and expanded to include the remainder of the area along the creek. The perimeter of the sewage treatment facility land should be developed and the low lands immediately to the east obtained. In addition, the area south of the power substation off Superior Road could provide a desirable recreation space.

The present policies do not indicate that any Greenbelts are being proposed or encouraged. Their inclusion could help ameliorate some of the visual and environmental problems that the continued expansion of linear commercial development will undoubtedly create.





B12

#### OPTION 2 - LIMITED GROWTH

This option presumes that physical growth and development within the project area is limited to the minimum practical amount and the acquisition of public open and recreational space along the river corridor is maximized.

#### LAND USE

This option assumes that no further expansion of the three institutions occurs and that the undeveloped land held by St. Josephs, Eastern Michigan University and the 28 acre privately held tract north of Huron River Drive are acquired to form the major open space of the park. Certain other privately owned parcels adjoining the river and the railroad would also have to be acquired.

The only major commercial tract to be developed would be the 60 acre, Thall property between Huron River Drive and Clark Road. Remaining development would be limited to extensions of the single and multiple-family residential areas.

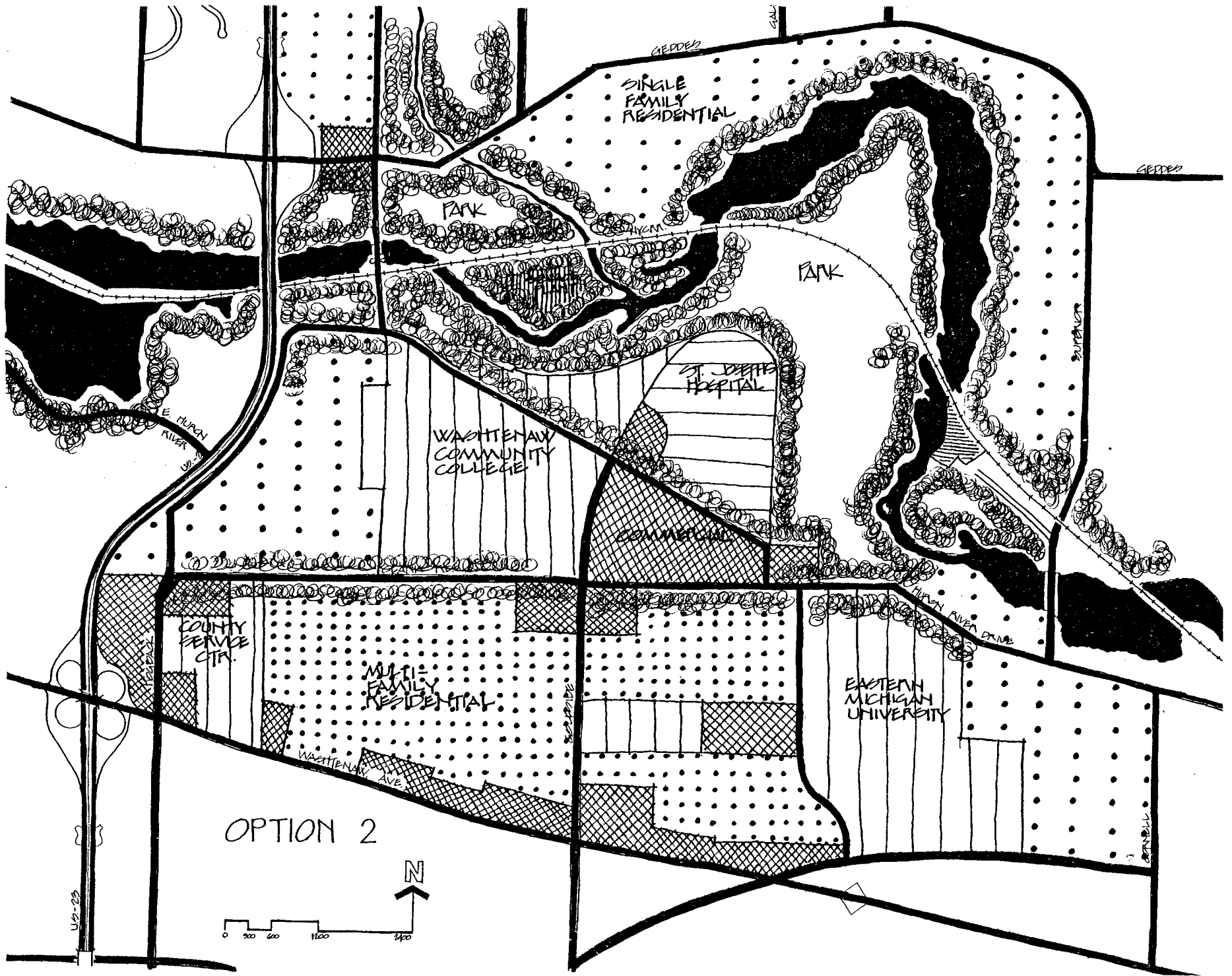
#### ROADS/TRANSPORTATION

Street extension would be limited to the Hewitt Road extension west of the Eastern Michigan University campus and Golfside Road between Clark and Huron River Drive. The extensions of Golfside to Gale and Clark Road to the west would be dropped. Dixboro Road would have a new bridge built over the railroad and the river between Huron and Geddes. No railroad station or mass transit stop would be recommended in the project area.

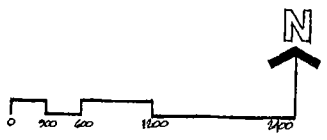
#### OPEN SPACE/GREENBELTS

The major concept of Option 2 is the creation of a major public park along the river within the project area. All the concepts discussed in the River corridor section would be applicable.

In addition, both Huron River Drive, Clark Road and the extension of Golfside would be designated as Greenways - requiring a substantial building-line set back and planting of a double row of trees along both sides.



OPTION 2



U2-23

37  
BENTLEY

## OPTION 3 - INTENSIVE DEVELOPMENT

The concepts of Option 3 are aimed at maximizing the development of high-quality housing and supporting commercial space within the project area, improving the street network, locating a pedestrian-accessible mass-transit station at the railroad crossing, providing the opportunity for a highly efficient joint energy system for the institutions, and developing the river corridor as a linear public park.

### LAND USE

The overall organization assumes the land immediately adjacent to the river is developed as a linear park with high density, multiple-family housing generally adjacent to this park on the south bank of the river and in the immediate vicinity of the mass-transit station.

It presumes that the long range development plans of the hospital for commercial, hotel and research park activities can be accommodated within a more compact configuration which includes the 28 acre undeveloped parcel.

The Thall and the Bank properties would be combined into a contiguous commercial parcel. The option presumes that the Eastern Michigan University land north of Huron River Drive would be developed as multiple-family housing as would the area east of US-23 and north of Clark Road with increasing densities in the vicinity of the railroad station at the present Dixboro Road crossing.

### ROADS/TRANSPORTATION

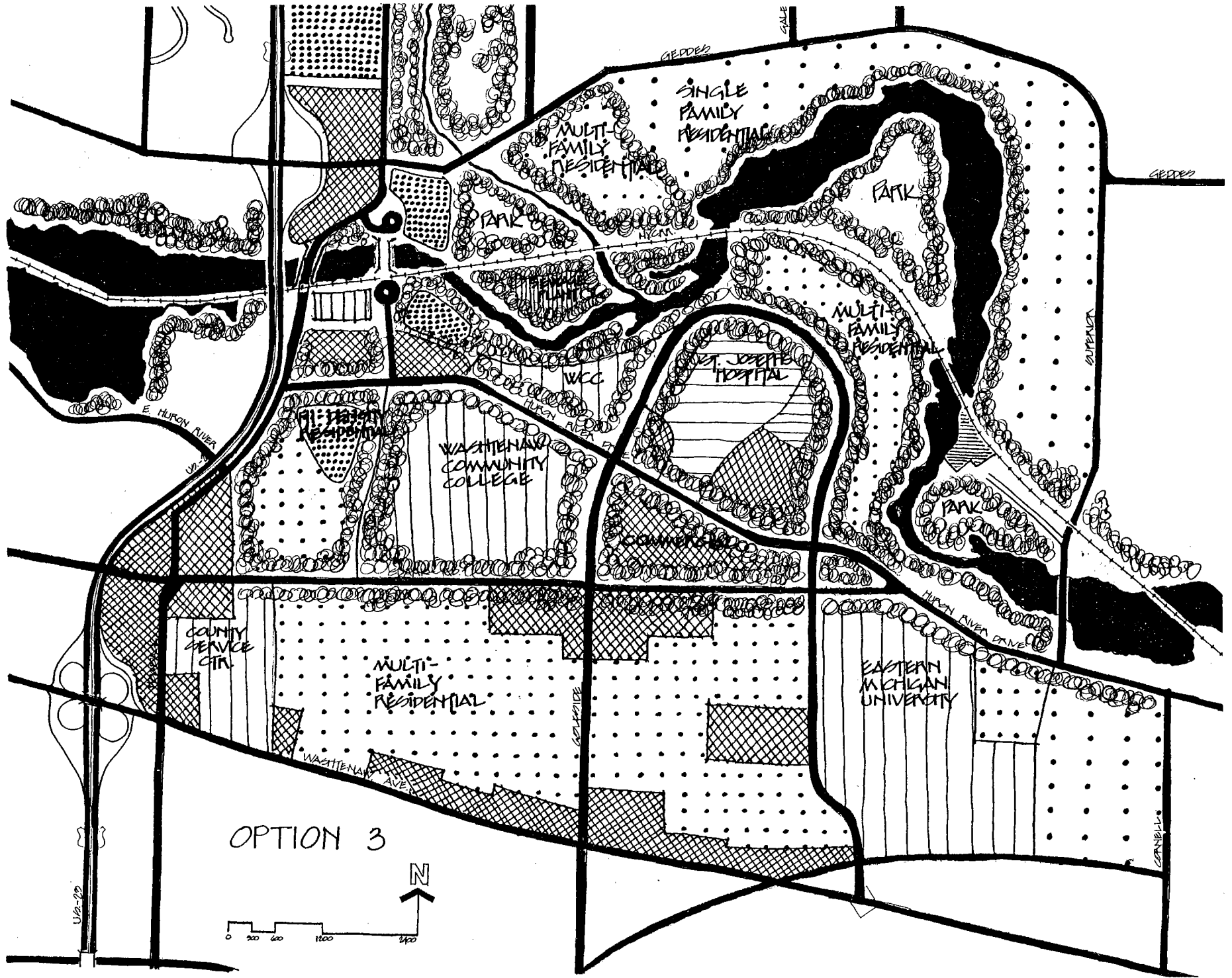
The plan proposes the extension of Golfside and Hewitt Road to form a loop around St. Josephs Hospital and the adjacent commercial development to serve them and the multi-family housing along the river park. This implies a new intersection of Huron River Drive and Clark Road. Another suggestion is the re-alignment of Huron River Drive to the south at Dixboro Road with the intention of providing a larger commercial/retail area and parking lot at the new railroad station. It also proposes a new bridge connecting Dixboro Road and Huron River Drive be located adjacent to

US-23. The present Dixboro Road crossing would be replaced with a pedestrian bridge across the railroad tracks and river.

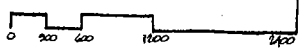
### OPEN SPACE/GREENWAYS

This option suggests a more linear, intensive development of open space along the river corridor with particular emphasis on providing pedestrian linkages leading to the river between developments and the acquisition of the low lands along the portion of the river valley for use of a public recreation space.

The concept of Clark Road and Huron River Drive as Greenbelt's with building set back lines and double rows of trees is also proposed. In addition, the extensions of Hewitt Road, Golfside and the loop around St. Josephs should be similarly treated with a single row of trees required.

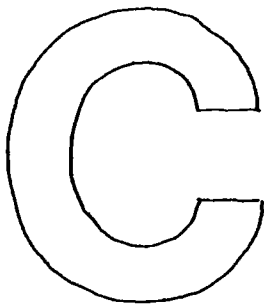


OPTION 3



U2-22

CONNELLS



RIVER CORRIDOR

The Huron River Corridor has long been recognized as a prime recreational area and a critical visual resource in southeastern Michigan.

While this current R/UDAT study has focused upon the Ann Arbor-Ypsilanti area, and that portion of the Huron, the full importance of the river's regional significance must be realized.

This chapter will develop a stance concerning the river's future and advocate certain policies concerning its relationship to its context and its role as a prime focus in the study area.

Early in the study, the elements of the river's identity and special character were identified. This analysis focused upon the river's identity as a product of natural, cultural and visual amenities.

Drawing from the Washtenaw County Land Use Policies Report, the natural element identified significant wood lots, wetlands, slopes over 10%, water elements and added orchards as a special resource to the area's character. These elements are displayed on map 1, page 3 and indicate a system of prime natural areas along the river and within the major study area.

Cultural elements inventories focused upon land in public and semi-public areas which through their limited development and general permanency add to the area's image. This analysis also included special aspects such as small villages and a designated scenic road.

The final area included an inventory of visual affects within the immediate study focus area.

the river corridor

# C2

These elements appear on map , page c.3 and include indications of views, special places of unified character, activities, and areas of visual disorder. These initial studies revealed the need for much more detailed visual inventory and assessment. As a result of this brief overview a basic stance was developed for the river and a basic concept for its use was developed.

Basic to the future use and enjoyment of this corridor are certain key policies. The following list reflects the stance phase:

RIVER SHOULD BE MAJOR FOCAL POINT AND PUBLIC RESOURCE

WATER QUALITY SHOULD BE RAISED

A BIAS TOWARD NATURAL CONDITIONS SHOULD GUIDE ALL RIVER RELATED DEVELOPMENT

RECREATIONAL DIVERSITY SHOULD BE ENCOURAGED

RIVER RELATED INGREDIENTS i.e. TOPO, VEGETATION, WETLANDS, & FLOODPLAINS, SHOULD BE PART OF THE RIVER ZONE

THE RIVER ZONE SHOULD REMAIN NATURAL

FREE & SPONTANEOUS ACCESS SHOULD BE PROVIDED TO THE RIVERS EDGE

VIEWS TO THE RIVER SHOULD BE PROTECTED OR DEVELOPED i.e. CREATING SELECTED VISTAS

ITEMS OF HIGH VISUAL IMPACT SHOULD BE MINIMIZED; i.e., POWER LINES, UTILITY EASEMENT CLEARING, HIGH CONSTRUCTION

FLOOD PLAIN SHOULD REMAIN FREE OF PERMANENT DEVELOPMENT

THE RIVER SHOULD SERVE AS A CONTRAST TO THE URBAN AREAS

CONTINUOUS PEDESTRIAN & BIKE MOVEMENT SHOULD OCCUR ALONG THE RIVER

NATURAL MATERIALS SHOULD BE USED FOR THE CONSTRUCTION OF ELEMENTS IN THE RIVER ZONE



## NATURAL AMENITIES LEGEND

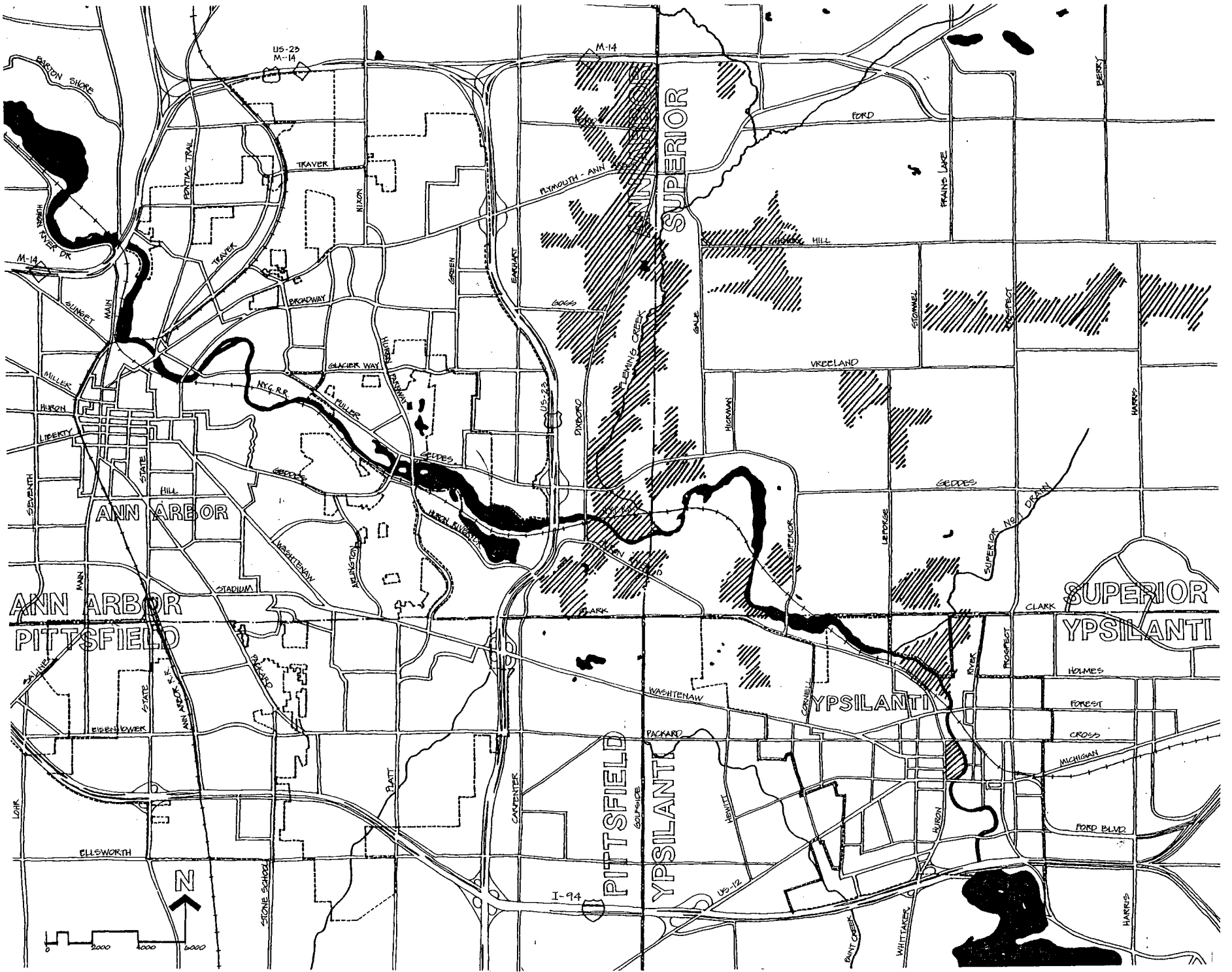


NATURAL RESOURCES:

- WOODLOTS
- WETLANDS
- STEEP SLOPES (+10%)
- ORCHARDS



WATER

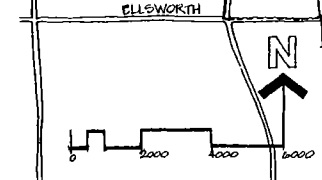


ANN ARBOR  
PITTSFIELD

ANN ARBOR  
PITTSFIELD

PITTSFIELD  
YPSILANTI

SUPERIOR  
YPSILANTI



C4



## CULTURAL AMENITIES

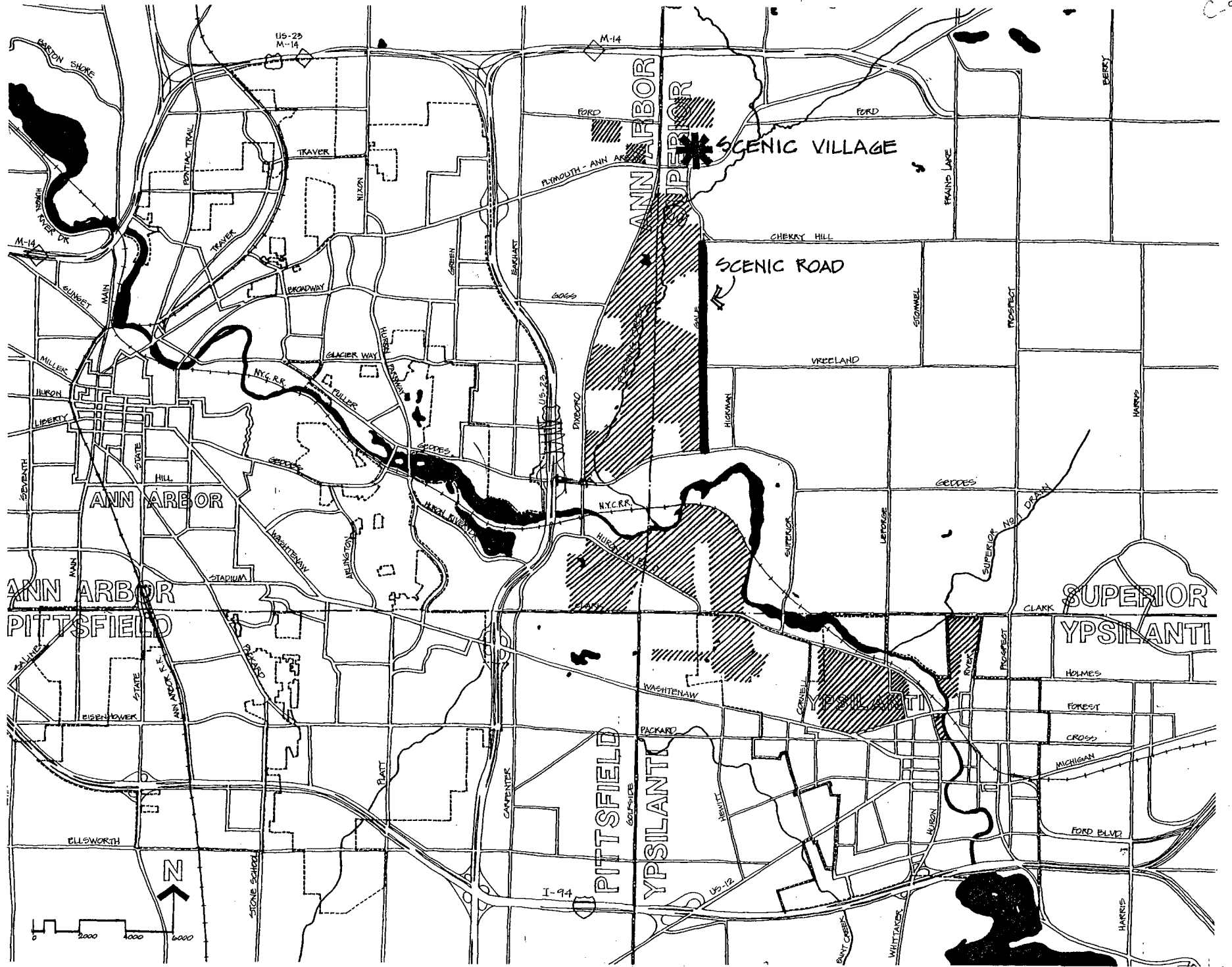
### LEGEND

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GENERALIZED PUBLIC/  
QUASI PUBLIC





# C6

A GOOD MIXTURE OF OPEN FIELDS & WOODLOTS SHOULD BE PART OF ANY DEVELOPMENT PLAN

ENCOURAGE THE MAINTENANCE OF ENVIRONMENTAL EDUCATION FACILITIES ALONG RIVER

INCREASE PUBLIC AWARENESS OF RIVER ACCESS POINTS. MAKE RIVER MORE VISABLE IN SELECTED LOCATIONS.

ENCOURAGE INSTITUTIONAL CO-OPERATION IN ALLOWING PUBLIC USE OF THE RIVER

TIE THE RIVER INTO TOWN-WIDE PUBLIC SPACE PLAN/STREET TREE PLAN

AUTO ACCESS SHOULD BE LIMITED TO SELECTED SPOTS

HANDICAPPED ACCESS SHOULD BE PROVIDED AT KEY RIVER POINTS

THE RIVER ZONE & CORRIDOR SHOULD BE VIEWED AS A 12 MONTH USE FACILITY

TREES OVER 4" CALIPER SHOULD NEVER BE REMOVED

NATIVE PLANTS SHOULD BE USED FOR NEW PLANTING IN MOST CASES

SPECIAL PLANTINGS OF FLOWERING TREES & ORCHARDS SHOULD OCCUR IN SELECTED AREAS

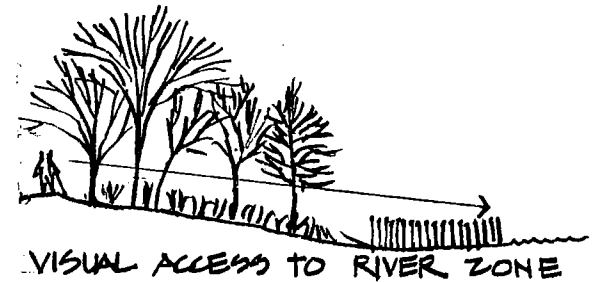
WILDLIFE HABITAT SHOULD BE ENCOURAGED IN RELATION TO THE RIVER

ONLY "WATER BASED" RECREATION SHOULD OCCUR IN THE PRIME RIVER ZONE









FISHING SHOULD BE IMPROVED

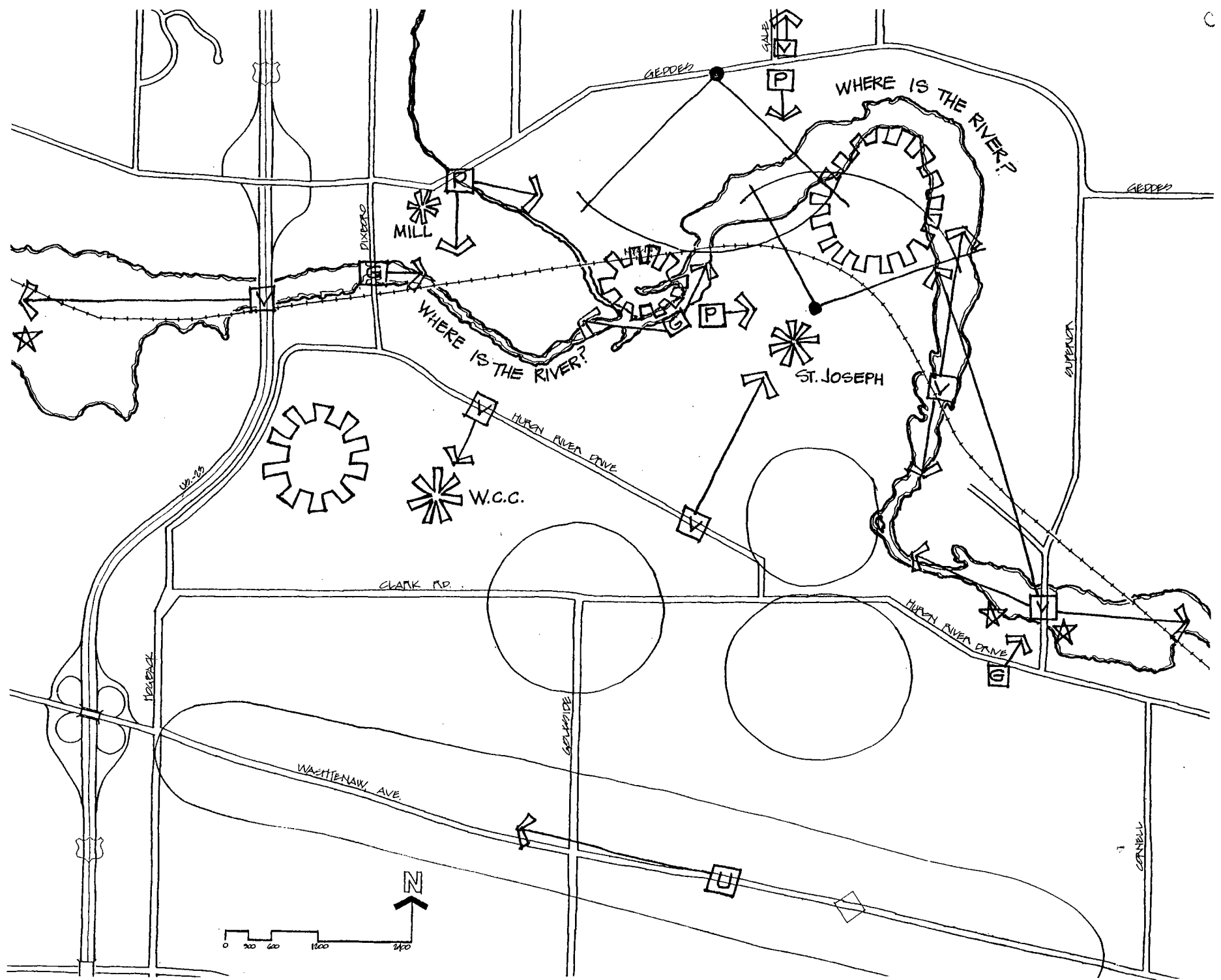
MANY ALTERNATIVE ATMOSPHERES SHOULD BE CREATED OR MAINTAINED FOR A DIVERSITY OF RIVER USERS

ALL RIVER CROSSINGS SHOULD BE WELL DESIGNED AND KEPT TO A MINIMUM



## VISUAL AMENITIES LEGEND

-  MAJOR VIEW
-  GLIMPSE
-  VISUAL LANDMARK
-  ZONE OF UNIFIED VISUAL CHARACTER
-  ZONE OF VISUAL DISORDER
-  UNPLEASANT VIEW
-  POTENTIAL VIEW
-  PANORAMA

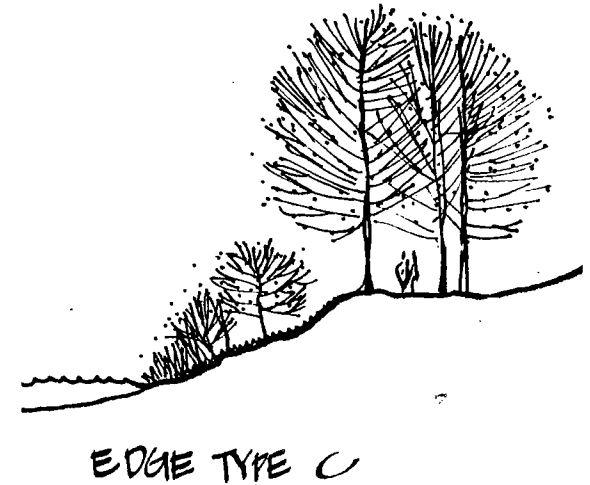
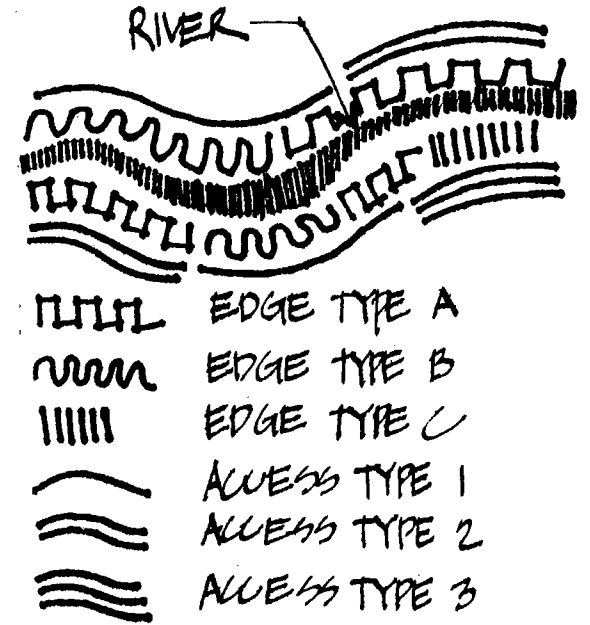
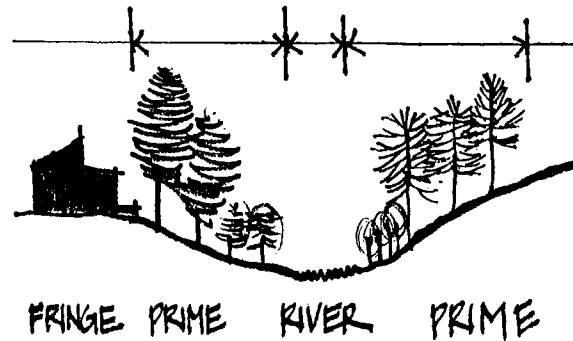
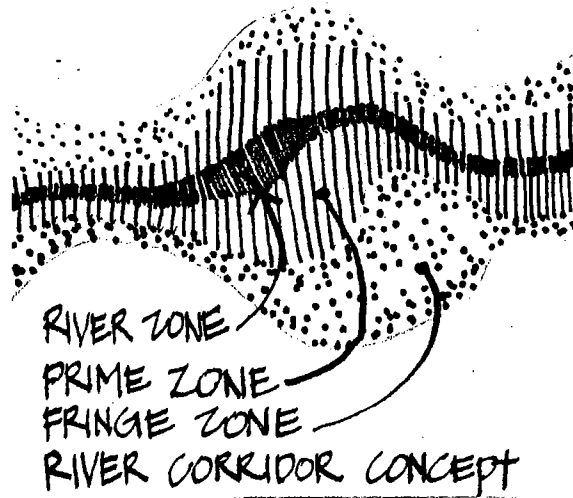


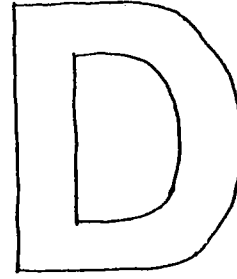
This list is not meant to be all inclusive, but reflects the types of concerns and policies suggested by the inventory phase.

A second part of the effort decided to strengthen the policy that the river should be a major focal point and public resource.

This concept centers upon a river corridor consisting of three major zones: The river zone, limited to the water and flood plain; the prime zone, consisting of sensitive natural conditions unsuitable for extensive change or development; and the fringe area which is area which is related to the river but is suitable for recreational, residential and commercial development. Much more extensive analysis is required to locate these concept zones; however, it is the suggested management structure for the river's protection and enhancement.

One additional item of special need is an analysis of river access potential and edge conditions. This data should be indicated in some manner which clearly indicates the access situation and the edge type. The diagrams and plans illustrating this idea appear on page c8.





# growth management

## CONCEPT OF GROWTH MANAGEMENT

Growth management is a concept applicable to the study area for the following goals: Coordinating the timing, staging, location, and rate of private and public development as a system of public policy and program decisions, which include a wide variety of planning concepts, administrative devices, legal tools, and fiscal techniques. However tightly or loosely the development management process may be, three important aspects of a growth management strategy should be considered:

1. Relationship between areas in different stages of development, i.e., urban v. rural, downtown v. suburban shopping center.
2. Relationship between different implementation techniques, i.e., zoning and sub-division review, park land dedication and floodplane protection.
3. Relationship between different governmental units having an interest in or affecting the area directly, i.e., county and township, city and state.

Objectives of a growth management planning strategy can cover a wide array of concerns:

- control escalating public service costs
- maintain an existing community lifestyle
- preserve valuable public amenities
- protect important environmental and esthetic resources
- ensure the provision of adequate public services

## STUDY AREA ISSUES & PROBLEMS

1. Multi-government jurisdiction: more than a dozen public and quasi-public agencies and institutions share overlapping planning and programming authority over the study area, with resulting conflict of development planning and policy-making.

2. Inadequate comprehensive planning framework; limited functional planning responsibility of the hospital, community college, university, and utility authority make inter-government coordination more difficult.

3. Limited area jurisdiction: Most planning does not examine its impact upon other governmental units or agencies. For example:

| Unit     | Area               |
|----------|--------------------|
| Township | Township area only |
| City     | City area only     |
| Hospital | Hospital site only |
| College  | Campus site only   |

4. Offsite development impact: There is no planning that ensures that off site development impacts is consistent with institutional development plans.

| Institutions      | Off Site Impact  |
|-------------------|--|
| Hospital          | Commercial development                                   |
| Community College | Multiple and single-family housing                       |
| University        | Sewer and water extension<br>Recreational facility needs |

5. Fiscal competition: The competition for new tax base between local government units increases the likelihood of independent planning and undermines a coordinated, cooperative planning process between county, city, and town governments.

6. Absence of staged growth planning: The absence of timing, staging, and location policies in local plans makes it difficult for private landowners to know when development of their property will be appropriate.

7. Inadequate institutional Coordination: There is insufficient coordination between the hospital, community college, and university to provide continuous information on their respective development plans.

8. Township zoning and subdivision control: Township use controls lack provisions for ensuring adequacy of basic public facilities as a precondition of development approval.

9. Limited County Development Review: The county can only act in an advisory capacity on zoning and subdivision review, although development proposals may have serious county road, drainage, and septic tank consequences.

10. Capital Programming: There is no coordinated capital programming process which identifies the various governmental service scheduled for the study area.

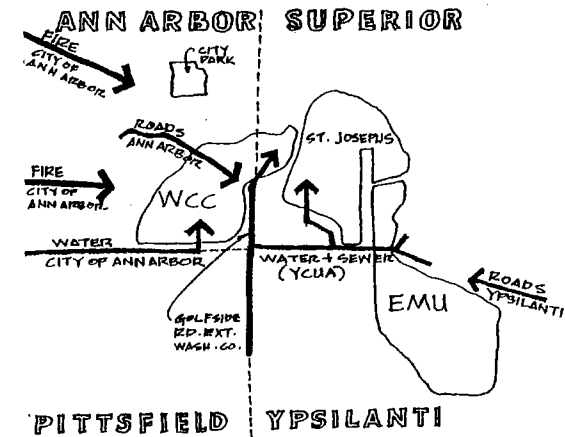
11. Utility Extension: There is no requirement that sewer and water extensions of the YCUA be consistent with township zoning and county land use planning.

12. Hospital Land Development: There is no assurance that township zoning and subdivision regulation will promote the hospital development plan and related uses.

13. Inter-governmental Coordination: There is no strong administrative mechanism in use that maintains formal or informal contact between the institutions, local government units, and private land owners.

14. Lack of Citizen access: There is inadequate access of the public at large to the development review and approval process in the study area; information on development plans is difficult to obtain in advance and in sufficient detail for public appraisal.

15. Development Costs: There is no on-going monitoring system that accurately describes how much development of the study area is costing the general public, directly or indirectly, or how much a decision of one governmental unit imposes a cost upon another government unit.



## GOVERNMENTAL ALTERNATIVES

The three alternative development patterns the above study area issues and problems different mix of governmental regulation, institutional management, and private development initiative.

Organizational alternatives can be characterized according to the following models.

1. Institutional Planning Consortium: This model places major responsibility for planning and implementing a land use plan for the study area on the shoulders of the hospital, community college, and university. Because development of adjacent land will respond to campus and hospital site development plans, the three institutions would play the major role in establishing and promoting an overall development pattern.

The three institutions would establish a joint coordinating and planning mechanism to plan an overall development pattern compatible with institutional facility and service needs. Adjacent land would be acquired and then released by the consortium as appropriate, subject to development in conformance with the consortium master plan.

Township zoning would be by planned development designation, permitting only large parcel rezoning and prohibiting piece-meal subdivision. Site plan review would occur in conformance with the consortium master plan. County planning would coordinate the study area plan with county-wide development policy and regional development patterns.

2. County Development Coordination: A second model requires the county to assume a strong coordinating role between the land use zoning and subdivision decisions of town and city governments and the site development plans of the hospital, college, and university. The county would prepare a master development plan for the study area, showing the staging and sequencing of major public improvements; sewer, water, highway, fire, park, school, and other public services as a precondition to private land development approval. A long-range capital program would provide a more detailed timetable and cost estimate for specific improvement projects. Rezoning and subdivision approval by townships and municipalities would be granted only after conformance with the master development plan time-table had been determined. Institutional land development activity would be conditioned upon compliance with the county development schedule.

### 3. Individual Local Government Regulation

Individual township and city subdivision and zoning authority would continue as at present, with the county and institutions having only an advisory review role. The county would continue its planning role, and review subdivision proposals for adequacy of drainage, highways, and septic tank systems. There would be no overall development plan nor capital improvement program. Development would be administered according to the present ad hoc, piece-meal development process.

## DEVELOPMENT OPTIONS AND MANAGEMENT STRATEGY

### OPTION 1 CURRENT TRENDS

The "continuing trends" development pattern assumes no significant change in the existing distribution of planning, programming, and public service authority of township and city, and county units of government. The principal land development and service techniques will likely consist of the following:

- |          |   |
|----------|---|
| County   | -county plan preparation<br>-advisory zoning review<br>-advisory subdivision review; subdivision approval as to roads and drainage.<br>-septic tank regulation<br>-capital programming<br>-bond issuance for townships<br>-comprehensive plan preparation   |
| City     | -zoning approval<br>-subdivision approval<br>-extraterritorial sewer and water extension<br>-capital programming  |
| Township | -comprehensive plan preparation<br>-conventional zoning<br>-rural estate zoning<br>-planned development district<br>-subdivision approval: on-site criteria<br>-volunteer fire protection<br>-inter-governmental agreement for sewer and water service  |
| Hospital | -Piecemeal commercial development as noted earlier, this management strategy hampers the establishment of a coordinated, staged growth management strategy. No single governmental agency assumes an acknowledged coordinating role. Independent governmental and institutional planning is encouraged. Duplication and piece-meal decision making are more likely. An incremental lot-by-lot development pattern will most likely result in the continuation of existing development patterns in the study area. |

### OPTION 2 LIMITED GROWTH

The "limited growth" development option will require a slightly different governmental structure and management techniques. Parkland preservation techniques will be necessary, and management and financing would be administered by county-wide rather than township authority. Additional sewer and water extensions proposed for the hospital vicinity would be unnecessary, although Ann Arbor and YCUA sewer and water service to the southern portion of the study area would be needed. EMU would relinquish its site for commercial development. The principal institutional role would consist of landbanking by the hospital; acquisition and permanent ownership by the hospital of open, undeveloped plan. Principal county roles would include coordinating park land acquisition and development, solid waste and energy management, and provision of road and drainage facilities.

- |          |  |
|----------|--|
| County   | -county open space plan preparation<br>-open space acquisition<br>-advisory zoning review<br>-limited access to existing facilities<br>-subdivision review, and approval as to adequacy of roads and drainage off-site<br>-septic tank regulation<br>-capital programming<br>-solid waste and energy development |
| City     | -comprehensive plan preparation<br>-zoning and subdivision approval<br>-limited extraterritorial sewer and water extension<br>-extraterritorial fire protection<br>-capital programming  |
| Township | -comprehensive plan preparation<br>-conventional zoning<br>-planned development<br>-mandatory dedication of land or other subdivision exaction<br>-conventional subdivision review<br>-inter-governmental agreements for sewer and water service<br>-volunteer fire protection                                   |
| Hospital | -land acquisition and retention of ownership   |
| EMU      | -sale of land for private development  |

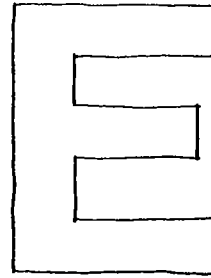
# D4

## OPTION 3 HIGH INTENSITY DEVELOPMENT

High intensity development is a development pattern that could be accomplished by governmental or institutional means. Either alternative requires a highly coordinated, carefully managed land planning, financing, and development management process. The substantial financial investment and interdependent land use pattern - particularly as to energy and transportation proposals would be difficult to accomplish through a fragmented and uncoordinated local government service structure. Township zoning, for example, would have to compliment hospital commercial development to ensure the latter's success and to protect public investment. An institutional consortium, composed of the hospital, college, and university, could assume overall master planning activity and then implement the plan through a continuous program of land acquisition and then development in accordance with the master plan. Alternatively, the county as a public agency could assume a stronger planning and coordination role, relying upon county financing authority, road and drainage approval powers, additional solid waste and energy management authority, etc., to establish an overall development program for the area.

- County
  - development plan preparation
  - subdivision review, and approval as to adequacy of off-site road and drainage facilities
  - advisory zoning review
  - capital programming
  - solid waste and energy development
- City
  - comprehensive plan preparation
  - zoning and subdivision approval
  - extraterritorial sewer and water service
  - extraterritorial sewer and water
  - capital programming
  - park acquisition
- Township
  - comprehensive plan preparation
  - conventional zoning approval
  - planned development, cluster, bonus, and incentive zoning
  - conventional subdivision approval
  - inter-governmental agreements for sewer and water service
  - fire protection
- Consortium
  - developer-owner
  - developer-seller
  - joint venture
  - land sale promoter





# economics

The study area's local economy is primarily defined by the Ann Arbor (Washtenaw County) SMSA. The SMSA labor force was approximately 136,000 in early 1978 or 52% of the population. The unemployment rate was low at this time compared to the nation and the state (5.1% vs. 7.2% statewide). Employment in the Ann Arbor SMSA is estimated to be equally divided among manufacturing, non-manufacturing, and government jobs. In comparison with the state, there are approximately the same proportion of jobs in manufacturing; relatively less in non-manufacturing (34% vs. 49%); and relatively more in government (33% vs. 18%). The larger proportion of government employment arises from the significant amount of state employment of the University of Michigan and at Eastern Michigan University. Government related employment offers this community a more stable employment base which most manufacturing and non-manufacturing jobs alone cannot guarantee.

Median income in the area is higher than the state average. According to data collected from 1970 U.S. Census and recent economic statistics, incomes for Washtenaw County, and the state are \$21,692, and \$20,455 respectively. These figures include the student population with low reported incomes.

Agriculture within Washtenaw County accounts for 59% of the land area yet only produces some \$28 million in income. In recent years, the overall number of farms has decreased and the value and size has increased somewhat. This implies that farming is of minor significance to the county economically. However, agriculture should not be measured in strictly economic terms. Other considerations are necessary to determine its true value within a community.

Support for local governments throughout the state comes primarily from the property tax base. A substantial portion of the tax base is commercial and industrial. Residential valuation is generally less than one-half the tax base throughout Washtenaw County. For example, the percent residential valuation for Washtenaw

# E2

County, Ann Arbor City, and Ypsilanti Township is, 47.8%, 51%, and 36.5% respectively.

In general, the local economy which surrounds the study area is diverse, strong, and provides a satisfactory tax base for the local governments and the state. The fact that local funding for local government depends heavily on the property tax is mitigated by the strong commercial/industrial components of the tax base. Economic factors suggest the SMSA can afford a relatively high standard in governmental services and programs.

The system of local public finance in the Ann Arbor-Ypsilanti area is marked by a diversity of general and special purpose taxing agencies with broad powers to incur debt and execute contractual capital finances. There is generally heavy reliance on the property tax base for local sources of revenue. Also important are the non-taxing, governmentally-supported educational and health institutions, such as, the universities, the community colleges, and the health services institutions.

Table E-1 illustrates several financial characteristics of recent budgets of the area's general purpose local governments. Each has the power to levy property taxes, and although some degree of statutory limit exists in each case, additional levies are obtainable to support debt or other contractual obligations without a vote, or for various specific purposes with approval of the electorate. Statutory property tax limits have not been an important constraint to local government operation. Data contained in the table supports the conclusion that both cities and townships (see Ypsilanti and Pittsfield Townships) are funding "urban levies" of public services.

Various special purpose authorities and commissions are also operating with revenue support independent from the annual appropriations processes of the area's general purpose governments. This results in a lack of incentive for annual review of programs from a broad perspective, and in general, contributes to a lack of program coordination. The Ypsilanti Community

Utilities Authority (YCUA), the Ann Arbor Transportation Authority (AATA), The Joint Ypsilanti Recreation Organization (JYRO), the County Parks and Recreation Commission, The Universities, Community College, St. Joseph's Hospital, and others, all possess financial authorities, powers and resources that are exercised outside the control of the uncoordinated with the activities of the county, cities, and townships.

Property taxes are the primary source of the local tax effort. Other large amounts of funds are derived from state and federal (intergovernmental) sources. Sales taxes, local income taxes and gasoline measures are all proprietary state revenue sources.

Local public finance in Michigan may be reformed by constitutional amendment later this year. Current proposals would limit future property tax increases, and possibly mandate immediate reductions. In the short run, new tax-supported programs could be curtailed, and a much greater need would arise for even greater efficiency in urban design and financial planning/coordination to enhance governmental efficiency on the whole. Under these conditions, well-planned, coordinated, energy efficient developments are to be strongly favored.

Because of the broad extent of financial powers of the variety of general and special purpose agencies, many governmental bodies have important roles in the study area. In particular, this has allowed special purpose authorities (AATA, YCUA, County Board of Public Works, etc.) to shape the area's development and confined the county role to specific programs, advisory and debt financing for the local units. Lack of coordination across functional and jurisdictional lines is generally the result.

If special purpose regional Ad Hoc units continue to be used and/or play a role in the plan for this study area, the overall coordinating role of the county must be enhanced. The county should accept this responsibility and should seek both coordination of local powers and consider a stronger regional role in planning for the county either within or outside the SEMCOG.

Three alternative development options are proposed for consideration in this R/UDAT study area (chapter B). In addition, measures are proposed for upgrading the Huron River Corridor (chapter C) and recycling solid waste for fuel (chapter G). The recycling program is identical in broad economic terms, regardless of which development scenario is followed.

The primary economic impact of the Huron River program will be its public cost. This will differ among the three development options. Although some benefits to landholders in the area can be anticipated, precise effects cannot be accurately predicted. Cost of the proposed improvements is based on land acquisition costs ranging from \$20,000 to 25,000 per acre and site development costs of \$10,000 to \$15,000 per acre. The first option propose an 80 acre development with total cost of \$2.8 million. The limited development option proposes 440 acres with total costs of \$15 million. The compact, third option proposes 290 acres at a cost of \$10.0 million. Approximately half these costs can be assumed to be paid from various federal programs and sources.

Financing of the Huron River Corridor improvements is not an appropriate responsibility of the cities or townships. It will confer regional benefits which indicates the need for financing by a regional agency. Among the possibilities are the Washtenaw County Parks Commission, The Huron-Clinton Metropolitan Authority and a newly created Special Purpose Authority formed by the affected local interests. Because the County Parks Commission both eliminates the need for a new layer of government and keeps control close to the affected electorate, possesses some degree of funding capability at present, and includes some improvements in the proposed area in its master development plan, this seems the most logical agency choice for implementation of the proposed Huron River open space program. For development options 2 and 3, program funds of \$1/2 to \$1 million annually should be available.

The economic effect of the proposed recycling

SELECTED FINANCIAL CHARACTERISTICS OF LOCAL GOVERNMENTS<sup>1</sup>  
TABLE 1

|                                     | Washtenaw<br>County | Ann Arbor<br>City | Ypsilanti City | Ann Arbor<br>Township | Pittsfield<br>Township   | Superior<br>Township | Ypsilanti<br>Township    |
|-------------------------------------|---------------------|-------------------|----------------|-----------------------|--------------------------|----------------------|--------------------------|
| S.E.V. 1977<br>(Property Tax Base)  | \$1,990 mil.        | \$718 mil.        | \$115 mil.     | \$50 mil.             | \$102 mil.               | \$59 mil.            | \$309 mil.               |
| % of Washtenaw County<br>S.E.V.     | 100%                | 36.79%            | 5.89%          | 2.56%                 | 5.21%                    | 2.85%                | 15.85%                   |
| Local Tax Rate <sup>2</sup>         | 6.74 mills          | 18.50 mills       | 23.02 mills    | 1.47 mills            | 3.11 mills               | 3.58 mills           | 8.88 mills               |
| Total Mills <sup>3</sup>            | (varies)            | 70.93 mills       | 72.34 mills    | 53.42 mills           | 56.11 mills <sup>4</sup> | 55.42 mills          | 52.90 mills <sup>5</sup> |
| General Fund Budget                 | \$21.6 mil.         | \$23 mil.         | \$5.5 mil.     | \$0.14 mil.           | \$0.75 mil.              | \$0.36 mil.          | \$ 1.8 mil.              |
| Property Taxes                      | \$12.1 mil.         | \$11.5 mil.       | \$2.5 mil.     | 0                     | \$ 0.3 mil.              | \$0.07 mil.          | \$ 0.4 mil.              |
| Intergovernmental<br>Revenues       | \$4.1 mil.          | \$5.3 mil.        | \$1.7 mil.     | \$0.086 mil.          | \$0.18 mil.              | \$0.15 mil.          | \$ 0.8 mil.              |
| Police/Fire                         | \$2.84 mil.         | \$6.7 mil.        | \$2.75 mil.    | \$ .07 mil.           | \$ .25 mil.              | \$ .12 mil.          | \$1.26 mil.              |
| Authority Financing<br>for Building | Yes                 | Yes               | Yes            | No                    | No                       | No                   | No                       |

1. Information derived from recent agency budgets and audit reports.

2. Tax rate of the agency shown.

3. Sum of all agencies levying taxes within the boundary of the agency shown.

4. Part in Ann Arbor School District.

5. Part in Ypsilanti School District.

program is a projected lowering of the areas' total fuel costs in the long run. This is based on projections that alternative fuel costs will continue recent inflation trends (see chapter G). As the Physical Plant for this system is expected to operate no sooner than 1983, projections are for a "break even" operation at that time. No continuing public support would be anticipated.

The study area is presently largely undeveloped, but is beginning to experience development pressures as a result of the recent opening of St. Joseph's Hospital, growth in Washtenaw Community College, and various public transportation improvements just having recently occurred and others planned for in the near future. Within this context, there are opportunities for a variety of new land uses including Health-Related, general commercial and residential. Those persons drawn to the area for reasons associated with the existing institutions will have sufficient incomes, and spending desires to create these various demands for goods, services, and housing. For this reason, several development options appear feasible, and to depend primarily on the land use, and other, policies of the several governmental and public agencies involved.

It is unlikely that these alternative development options will create measurable differences in the performance of the local economy as a whole. This is because the area is so small in relative terms, and because it is not known how much activities that may not occur in the study area will occur in other areas within the county instead.

Even though the study area is small in terms of the overall local economy, known efficiencies and/or other beneficial programs should nevertheless be pursued. This includes the River corridor and Energy Recycling programs.

The most significant measurable differences in the three development options will occur in segments of the economy and in certain geographical areas. In particular, there may be impor-

tant effects on certain local governments, especially in terms of service costs and local property tax income to support such cost.

The major impacts will be felt by the four townships in the area. Increased development will mean more demands for a variety of urban services. Also there will be an expanded tax base, and if it is insufficient to fund the higher service costs, there will be increased millages.

The first option considered is a continuation of present development trends. The anticipated pattern of land use is shown on Option I. This uncontrolled approach to development, focusing on low density mixed uses is well known to be the most costly in terms of urban services per capita and/or per acre of development. Urban capital and operating costs (pipes, roads, bus routes and patrols) are importantly influenced by spatial relationships. Low density, uncoordinated uses typically means higher costs, and usually as a result, lower service levels.

Development will affect the property tax bases of the four townships. The Table below shows development by township and valuation increases that would result over the period 1978-2000.

#### DEVELOPMENT ACREAGE

##### OPTION I

| Township   | Commercial | High Density Residential | Property Tax Valuation Increase |
|------------|------------|--------------------------|---------------------------------|
| Ann Arbor  | 135        | 85                       | \$35.5 Mil.                     |
| Superior   | 300        | 75                       | \$67.5 Mil.                     |
| Pittsfield | 15         | 80                       | \$11 Mil.                       |
| Ypsilanti  | 15         | 45                       | \$ 7.5 Mil.                     |
| Total      |            |                          | \$121.5 Mil.                    |

The second option is characterized by limited development in the study area. This is shown on Option 2. This would result in the least

change in the four township budgets. There would be no drastic change in demands for urban services from the present. Nor would there likely be great pressures to increase mill levies so long as the townships' existing residents are basically satisfied with present services and service levels.

Valuation increases for the four township is shown below:

#### DEVELOPMENT ACREAGE

##### OPTION II

| Township   | Commercial | High Density Residential | Property Tax Valuation Increase |
|------------|------------|--------------------------|---------------------------------|
| Ann Arbor  | 40         | --                       | \$ 8.0 Mil.                     |
| Superior   | 95         | --                       | \$19.0 Mil.                     |
| Pittsfield | 5          | 80                       | \$ 9.0 Mil.                     |
| Ypsilanti  | 40         | 20                       | \$10.0 Mil.                     |
| Total      |            |                          | \$46.0 Mil.                     |

The third development option is that of compact set of mixed uses in the study area. Anticipated land use is shown on Option 3. This model represents what is typically the most efficient in terms of providing urban services, and therefore can result in a higher service and amenity level for the same tax dollar.

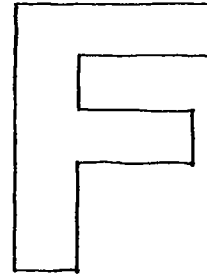
It is clear that this development approach will require expansion of the four township budgets. Without a detailed fiscal impact study, the likely increases cannot be estimated. However, if urbanization is to occur at all, compact, planned development is clearly most likely to minimize unit costs. Note for example that road improvements are estimated as 7 miles under the trend option and 7.8 miles under this option 3. However many more trips will be conducted in the compact development option (3).

Valuation increases due to 1978-2000 development is estimated as:

## DEVELOPMENT ACREAGE

## OPTION III

| <u>Township</u> | <u>Commercial</u> | <u>High Density Residential</u> | <u>Property Tax Valuation Increase</u> |
|-----------------|-------------------|---------------------------------|--|
| Ann Arbor       | 135               | 85                              | \$42.0 Mil.                            |
| Superior        | 290               | 75                              | \$80.0 Mil.                            |
| Pittsfield      | 15                | 80                              | \$11.8 Mil.                            |
| Ypsilanti       | 23                | 45                              | \$10.3 Mil.                            |
| Total           |                   |                                 | \$144.1 Mil.                           |



# transportation

## INTRODUCTION

Transportation facilities and services are one of the major public investments that governments make to promote an increase in quality of life for its citizens. Because the factors affecting our lives constantly change, a transportation system is never completed. Like all of the services that governments provide, an existing transportation system is never completed. Like all of the services that governments provide, an existing transportation system should be continually reappraised and improvements, either major or minor, should be continually programmed to improve that system. Since any action, either public or private, has both advantages and disadvantages; criteria need to be established to judge the consequences of an action.

## GOALS AND OBJECTIVES

The study area is fortunate to have county and urban area studies recently completed that define general goals and objectives to further the quality of life for its citizens. The following are a partial listing of those which are relevant to the study area's transportation issues and which were drawn from the Land Use Policies, Washtenaw County and A Plan for the Ann Arbor-Ypsilanti Urbanized Area documents.

- Provide for safe and efficient systems
- Maximize use of existing capital systems
- Provide for ease of understanding of systems
- Provide access between major activity centers
- Promote higher density developments along established transportation corridors and within walking distance of central business districts or intensified development areas.
- Encourage multiple modal use of transportation corridors
- Increase flexibility in choice of travel mode
- Emphasize public transit use as an alternative to the private automobile, particularly single occupancy trips

# F2

## EXISTING AND COMMITTED HIGHWAY SYSTEM

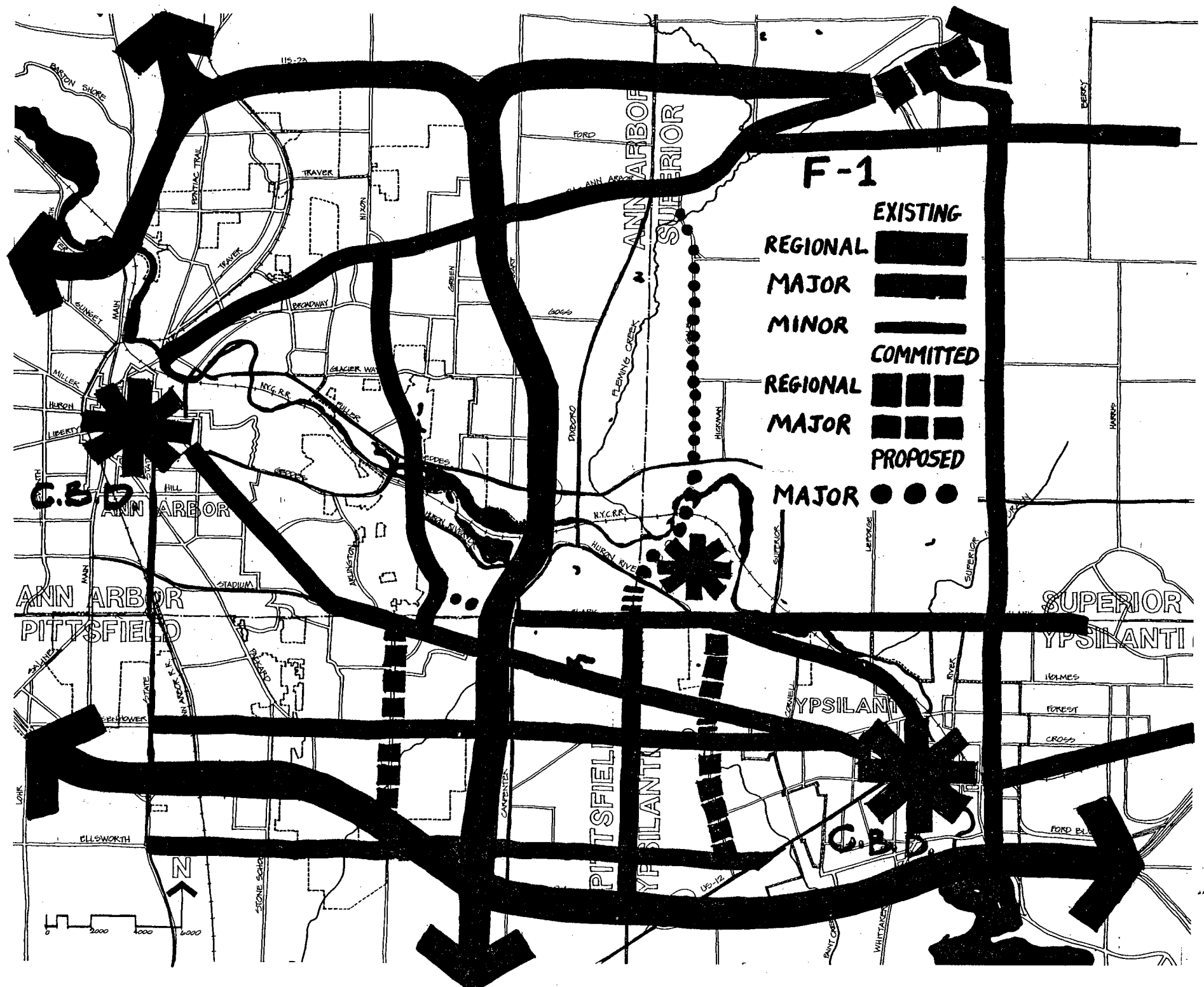
The Ann Arbor-Ypsilanti urbanized area is the dominant portion of Washtenaw County as evident by the series of major highway facilities serving the area. Such facilities as I-94, US-12, M-14 and a reasonably good grid of arterial streets provide good north-south, east-west and circumferential movement.

The urban area transportation study concludes that, with the exception of the completion of M-14, no new major regional facilities are required for the foreseeable future. The major plan improvements then emphasize maximizing the efficiency and performance of the existing systems, the reconstruction and widening of some selected streets and the construction of some "missing links" to make for a more complete grid system.

The improvements that impinge directly on the study area and are committed to implementation irrespective of any study area proposals are:

- Construction of a new section of Golfside Road from Clark Road to Huron River Drive
- Construction of a new section of Hewitt Road from Clark Road to Washtenaw Avenue and the widening of Hewitt Road from Packard Road to Michigan Avenue

These two proposals will provide for additional north-south capability and will increase the flexibility for travel desires in the study area. Other committed proposals which will promote general travel benefits but are not particularly critical to the study area are also shown on map F-1.



# F-1

## EXISTING

REGIONAL [Thick solid black line]

MAJOR [Thick solid black line]

MINOR [Thin solid black line]

## COMMITTED

REGIONAL [Thick line with rectangular blocks]

MAJOR [Thick line with rectangular blocks]

## PROPOSED

MAJOR [Thick line with circular dots]

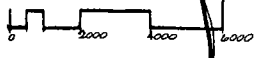
ANN ARBOR  
PITTSFIELD

SUPERIOR  
YPSILANTI

PITTSFIELD  
YPSILANTI

YPSILANTI

C.B.D.





# F4

## EXISTING AND COMMITTED TRANSIT SYSTEMS (map F-2)

The major feature of the existing transit system is that it exists at all. In the early 1970's, the Ann Arbor Transportation Authority (AATA) began a major effort to increase line-haul bus service and to institute a demand-responsive or dial-a-ride (DAR) service which now covers the City of Ann Arbor.

The system operates five line-haul, fixed routes that serve general patronage. The Huron River Route runs directly through the northern portion of the study area while the Packard Route loops in the study area at the Washtenaw Community College. The Washtenaw Route passes through the southern boundary of the study area. Both the Huron and Washtenaw routes operate between the CBD's of Ann Arbor City and Ypsilanti City and have the potential to service the development spine of which the study area is a part.

Ypsilanti City service consists of three line-haul, fixed routes, none of which impinge on the study area. The basic system fare is 35 cents per trip, with a \$10.00 individual or a \$15.00 household monthly pass program available.

The 1990 AATA Annual Report lists the following summary statistics for the system:

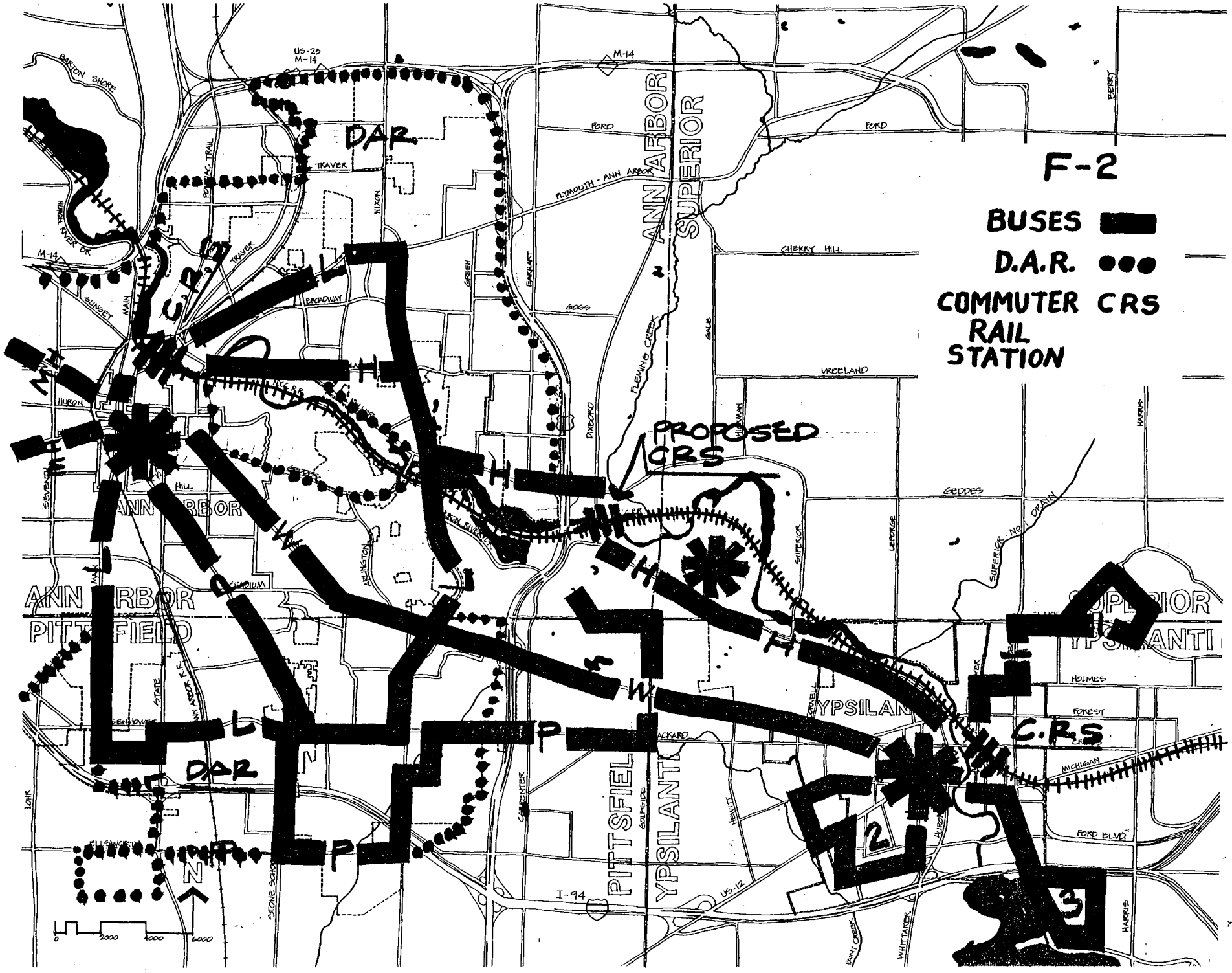
|  |                          |
|--|--------------------------|
| Fiscal year 1977 Annual Budget:        | \$4,609,463              |
| Dial-A-Ride Area: Ann Arbor            | 21.8 sq. mi.             |
|  | Out county 576.0 sq. mi. |
| Annual Passenger One-way trips         | \$2,155,155              |
| Total Annual Miles operated            | 3,010,603                |
| Total Annual Hours operated            | 215,601                  |
| Productivity (Passengers/vehicle hour) | 10.0                     |
| Active Employees                       | 232                      |
| Vehicles                               | 101                      |
| Fare box revenue                       | \$477,314                |
| Cost per Passenger Trip                | \$2.14                   |

Fare box and other revenues accounted for approximately 12% of the total system income, requiring the balance to be funded by a total of federal, state, and local grants or taxes. It is estimated that the transit system ridership is about 3-7% of total person trips. Compared to a future system goal of 20%, the current ridership is comparatively small. Considering the current and future national and global energy situations, the system would most likely begin to gain ridership as the cost of providing energy increases.




DAR service serves patrons generally from point of origin to point of destination with zonal trip transfers to line-haul routes in peak periods. The Out county DAR service is available to the study area with first priority given to elderly and handicapped persons.

Intercity bus service to Detroit and other major cities is provided by three private bus companies. Taxicab service is provided by two Ann Arbor and two Ypsilanti companies.

Commuter railroad service to Detroit and Amtrak intercity service to Detroit and Chicago is provided on the Penn Central Railroad line that runs east-west through the study area. There are existing commuter stations in Ann Arbor City and Ypsilanti City with serious planning underway for an additional station in the study area, most likely at Dixboro Road.



F-2

- BUSES 
- D.A.R. 
- COMMUTER CRS 
- RAIL STATION

PROPOSED CRS

C.R.S.

2

3

# F6

## EXISTING AND COMMITTED BIKEWAYS

The 1976 UATS Plan proposes an ambitious network of new bike routes to be added to an already extensive existing system. The current Plan displays approximately 50 miles of existing bike routes which is proposed to be increased 200 percent to about 150 miles.

As the Plan states, the use of bicycles is greatest in and around the central campus of The University of Michigan. The bicycle is also used to travel to other colleges and high schools in the area. Cyclists also commute to work and shopping, but not to a significant degree.

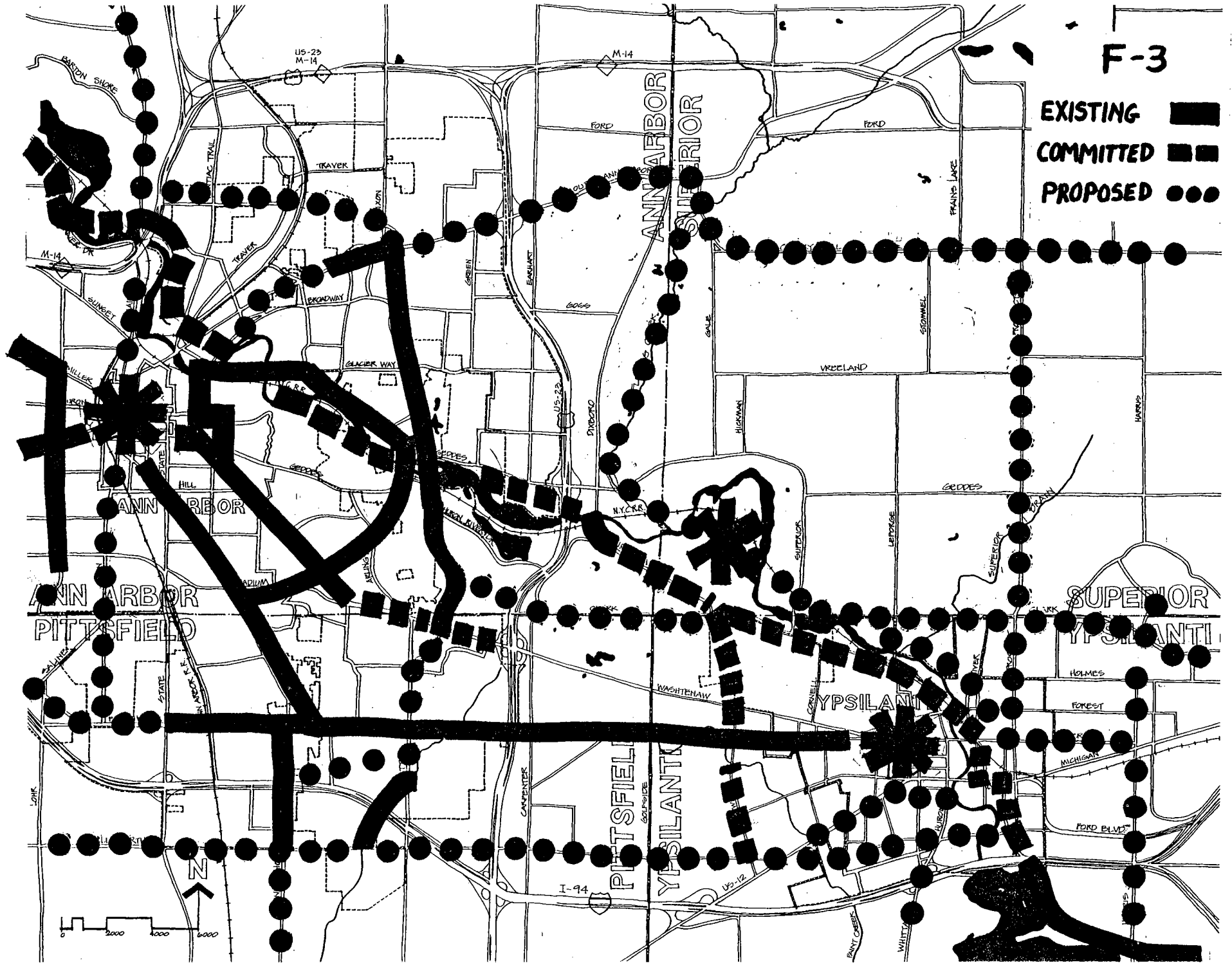
While the Ann Arbor area is subject to winter weather conditions, bicycling is an alternative mode of travel in certain circumstances. When these circumstances permit, bicycle travel can reduce the need for automobile travel and thus, promote the conservation of energy.

In addition to the Plan, a Bikeway Staging Program was adopted on May 18, 1977. It proposed the implementation of several bike routes of which two; the Huron River Route and the Hewitt Road Route, directly increase travel capability in the study. The location and character of these routes should be beneficial to the community as a whole and would benefit the study area according to the ultimate type of development that occurs.

The UATS committee has established a set percentage (4%) of FAUS (Federal Aid Urban System) funds to be allocated each year to the bikeway program. This insures that the region will be able to continue its program expansion.

F-3

EXISTING ■■■■  
 COMMITTED ■■■■  
 PROPOSED ●●●●



# F8

## TRANSPORTATION IMPROVEMENTS IMPACT ANALYSIS

The UATS planning process has generated a series of proposed transportation improvements over the years. The R/UDAT study has generated several additional potential improvements during its analyses. Time limitations do not allow for an independent, detailed technical evaluation of each proposal. Recognition of such evaluations has been taken where such have been made in prior studies.

This impact analysis is rather shown in a more qualitative manner. Each of the potential improvements that could affect the study area has been graded as to its positive, neutral or negative impact on the proposed development options. The improvements are coded on map F-4. The impact gradings are as follows:

- ++ Major Positive
- + Minor Positive
- N Neutral
- Minor Negative
- Major Negative

## PROPOSED OR POTENTIAL IMPROVEMENTS

### Highway

- H- 1 Golfside Extension
- H- 2 Hewitt Road Extension & Widening
- H- 3 Clark Road Extension
- H- 4 Gale-Golfside Bridge
- H- 5 Gale Road Upgrading
- H- 6 Dixboro Road Upgrading
- H- 7 Huron River Drive Upgrading
- H- 8 Huron River Drive Relocation
- H- 9 Dixboro Road Bridge Reconstruction
- H-10 Dixboro Road Bridge Relocation
- H-11 Clark-Superior Intersection Improvements
- H-12 Superior-Geddes Upgrading

### Transit

- T- 1 Line-haul bus service
- T- 2 Dial-A-Ride bus service
- T- 3 Commuter Railroad Station

### Bikeways

- B- 1 Huron River Drive Route

## Potential Improvement

## Development Options

| Trend | Limited | High Density |
|-------|---------|--------------|
|-------|---------|--------------|

### Highways

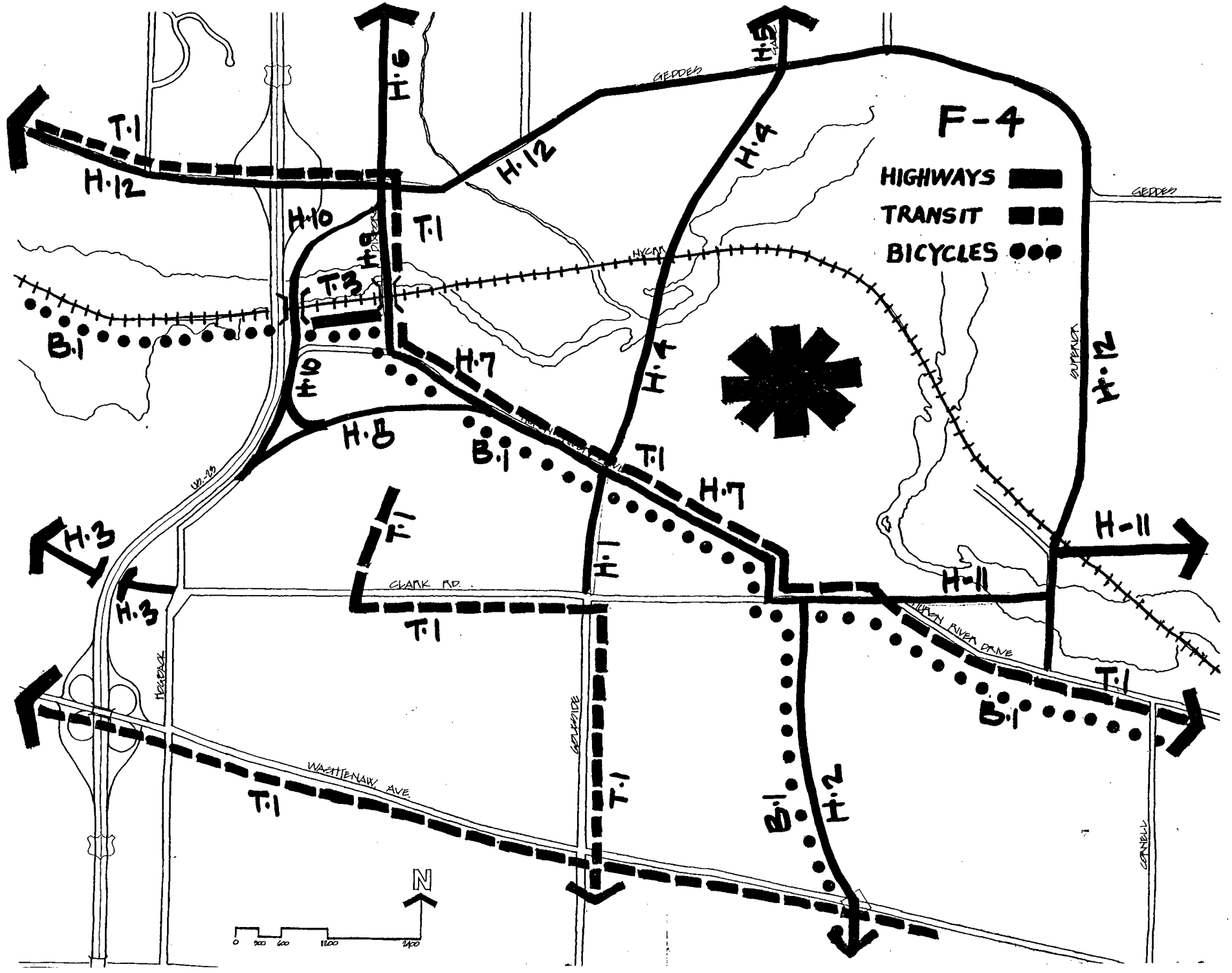
|      |    |    |    |
|------|----|----|----|
| H- 1 | +  | +  | ++ |
| H- 2 | +  | +  | ++ |
| H- 3 | ++ | N  | ++ |
| H- 4 | -  | -- | N  |
| H- 5 | +  | N  | +  |
| H- 6 | +  | +  | ++ |
| H- 7 | +  | -  | ++ |
| H- 8 | +  | -  | ++ |
| H- 9 | +  | +  | +  |
| H-10 | +  | +  | ++ |
| H-11 | +  | N  | +  |
| H-12 | +  | N  | +  |

### Transit

|      |   |   |    |
|------|---|---|----|
| T- 1 | + | + | ++ |
| T- 2 | N | N | +  |
| T- 3 | N | N | ++ |

### Bikeways

|      |   |    |    |
|------|---|----|----|
| B- 1 | + | ++ | ++ |
|------|---|----|----|



# F10

## DISCUSSION OF SELECTED HIGHWAY IMPROVEMENTS

### Gale-Golfside Bridge, Gale Road Upgrading

The Gale-Golfside bridge (H-4) is a proposed extension of Golfside Road from Huron River Drive to Gale Road at Geddes Road. The extension is one of the proposals in the UATS Transportation Plan document but is not programmed in the foreseeable future. Together with the upgrading of Gale Road (H-5) to M-14, this proposed total route would generally assist in the development of southwestern Superior Township. It is not clear that potential development in the study area would be assisted by the proposed bridge and the environmental consequences of the crossing of the Huron River have not yet been addressed.

### Dixboro Road Bridge, Huron River Drive Relocation

It is desirable to program a grade separation of the Dixboro Road Bridge over the Penn Central Railroad. Some of the major reasons are the anticipation of a new commuter railroad station, emergency access to St. Joseph's Hospital and better north-south access if the proposed Gale-Golfside Bridge is determined to be unfeasible. The bridge could be constructed in its current location (H-9) with a redesign of its intersection with Huron River Drive to orient traffic southeasterly. Alternatively, the bridge could be reconstructed to the west (H-10) making a more direct connection to Hogback Road and a relocated portion of Huron River Drive (H-8). This alternative would create larger, more desirable parcels along the river frontage.

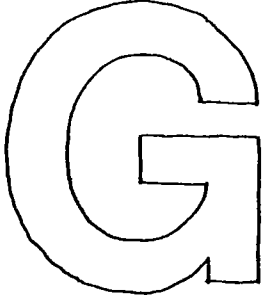
## DISCUSSION OF SELECTED TRANSIT IMPROVEMENTS

### LINE HAUL BUS SERVICE

The existing bus service routes (Washtenaw, Packard and Huron River Drive) are well suited to the current development. Depending on the ultimate development pattern, adjustments in stops and schedules should be reviewed. In addition, if further growth occurs to the south of the project area in the northern portions of Pittsfield and Ypsilanti Townships, the need for additional north-south bus service may become evident.

### COMMUTER RAILROAD STATION

A proposed railroad station is under consideration near the Dixboro Road Bridge. If the station occurs, the Huron River Drive bus route should be coordinated with train arrivals. SEMTA anticipates an increase in daily train trips from 6-7 to about 11 per day. A high density development and increased train service should complement each other very well. The proposed train station should also promote additional commuting trips easterly to Detroit and perhaps encourage westbound trips in the case of a high density development of the study area.



ENERGY

The energy crisis, the growing shortage of natural resources and the impact on our economy mandate a re-evaluation of the way we use our dwindling fuel supplies. In 1970 the total uses of energy in the United States was divided as follows:

|  |            |
|--|------------|
| Transportation                         | 25%        |
| Buildings                              | 25%        |
| Industrial                             | 32%        |
| Loss in Generation<br>and Transmission | <u>18%</u> |
|  | 100        |

energy

TRANSPORTATION

This study recommends reducing transportation energy useage by:

1. More frequent service and extension of the public transit system. The community has already shown imagination in this area as indicated by the Dial-A-Ride (bus) system, an extensive university transit system, and an alert Ann Arbor Transportation Authority.
2. Extending the bike trail system for both recreational and functional purposes. This is particularly relevant to Washtenaw County in view of the large student population, the proximity of housing to places of employment (largely institutional) and the clear committment of the community to ecological and health issues.
3. Channeling population growth to smaller high density nodes to preserve open space while simultaneously reducing the need for transportation in providing services (trash removal,



delivery of material) and minimizing energy transmission losses.

## BUILDINGS

Building design should comply with current consensus standards authored by the American Society of Heating, Air Conditioning and Refrigeration Engineers (ASHRAE 90-75). Plans for new structures should show compliance with this standard by listing the design energy budget prior to issuance of a building permit. At the completion of construction an inspection should be made to assure that construction actually complied with these standards prior to issuance of a certificate of occupancy and the performance of the building should be monitored a calendar year thereafter -- allowing however an appropriate period for debugging the various building systems. The owner of the building should be encouraged to instruct the building designers to utilize the latest state of the art techniques to minimize energy consumption. These techniques include:

- a) Lower heat transfer coefficients, carefully regulated ventilation quantities and a design energy budget in accordance with ASHRAE 90-75.
- b) Design to include passive Solar energy systems.
- c) Appropriate attention to building orientation, and configuration. Attention shall be given to the legal concept of "Solar Rights".
- d) A careful engineering review of the economic feasibility of using heat pumps, heat wheels and other mechanical devices utilizing as a heat source:
  - internally generated heat
  - outside air

- the new sewage treatment plant (now under construction)

## ORGANIZATIONAL STRUCTURE TO ACHIEVE ENERGY GOALS

1. Act 185 permits creation of a County Solid Waste Division (CSWD). It is proposed that the Department of Public Works should be expanded to incorporate such a function. The principal responsibility of this division of the department would be to produce fuel out of solid waste and to landfill or reclaim the remaining solid waste. The Washtenaw County Department of Public Works has already suggested this direction as indicated by their initiation of the publication:

### A WASHTENAW COUNTY PLAN FOR THE MANAGEMENT OF SOLID WASTE (March 1974 and a revised plan--February, 1975)

The CSW Division would negotiate with the various organizations--both private and public involved in the collection of solid waste to accept their waste and would contract to own that source of energy. The time span of the agreement, should at least equal the length of time necessary to pay off the bonds necessary to construct facilities (i.e. shredder plant) to process the solid waste into fuel.

2. The County Department of Public Works should also create an Energy Division. The principal responsibility of the Energy Division would be to act as an energy utility (i.e., create heat in the most useful form--whether high or medium pressure steam or high temperature water) and to distribute energy to the existing large institutions in the county and new future use or population nodes. This can only be done where there is economic

justification. Economic justification will only come when gas costs dramatically increase--a probable occurrence within five years--and where high utilization is required in small areas in order to minimize distribution costs and heat loss.

The reason these functions should fall under the Public Works Department is that in this manner they can help to carry out other land use related planning objectives. By providing very competitively priced heat energy they can help to encourage development consistent with the land use plan. This is the carrot--rather than the stick approach. Also, a public agency has the right of condemnation in order to create a right of way in which to run heating utility lines.

## ECONOMICS OF ENERGY RECOVERY

Resource recovery economics of refuse derived fuel (RDF) depend on the processing facility's capability of producing competitively priced fuel in which the revenue produced by Refuse Derived Fuel (RDF) sales will result in a lower net cost of disposal under resource recovery than using sanitary landfilling. As a fuel, RDF will be evaluated by a potential energy customer on a basis of its supply and demand, production costs, extra costs necessary to use the fuel, energy value comparison with other fuels, and escalation in costs compared to other fuels. Any economic benefit resulting from the resource recovery system should mean, in effect, that RDF is an economically viable fuel substitute. As a disposal system, any economic benefit should mean that the resource recovery system is an economically viable alternative to sanitary landfill disposal of solid waste.

## RDF PRODUCTION COSTS

RDF production costs are related to the technology and equipment required both to produce RDF for supply and demand variations and to meet firing specification. A resource

recovery system should incorporate technology and equipment sufficient to produce RDF suitable for firing in modified boilers or new boilers specifically designed for RDF. The actual technology utilized in the processing facility should be determined only after careful study of competitive alternative systems. RDF production costs must be included in the determination of the economic benefit that will result from the resource recovery system.

#### ENERGY VALUE COMPARISON OF RDF TO ALTERNATE FUELS

During negotiations, the producer and the customer must compare RDF with the energy value of alternative fuels. Table G-1 lists the output energy costs based on purchase price, the average burning efficiency, and the input energy value of the present and potential future fuels.

TABLE G-1

#### ENERGY VALUE COMPARISON OF FUELS<sup>1</sup>

| Type of Fuel | Heating Value    | Unit Output Energy Cost (\$/million BTU) |
|--------------|------------------|--|
| Natural Gas  | 1050 BTU/CF      | 1.73                                     |
| Fuel Oil     | 150,000 BTU/GAL. | 3.33                                     |
| RDF          | 5000 BTU/LB.     | 2.14                                     |
| Coal         | 12,500 BTU/LB.   | 2.40                                     |

1. This table was made using reasonable assumed values of current fuel costs and boiler efficiency. Careful re-evaluation of this data is required.

#### FUEL COST ESCALATION

Escalation in fuel prices is a very important consideration in the selection of the primary fuel for a new boiler. Recent exorbitant increases in the price of fuel oil demonstrate that fuel costs escalation can be highly unpredictable and, indeed, can be unrelated to production cost increases. Dramatic price increases during the winter of 1973-74, for example, resulted from the Mid-East oil embargo. For most of the country coal presently represents the cheapest major fuel, based on current purchase prices. But as conversion to coal fired boilers increases, two factors will inflate the price of coal: stockpiles of cheap coal will dwindle and be replaced by more expensive coal; and coal producers will respond to the new demand for coal by raising prices. The coal strikes of 1977 also illustrate that there will be increasing upward pressures on prices based on increased labor costs and higher safety standards.

Gas prices in this area are unusually low, but national policies currently being developed (i.e., gas deregulation) in Washington will dramatically increase the price of gas. These increases will raise the cost of gas substantially above the cost of RDF within a short span of years. Considered as a valuable national resource, required by the manufacturing segment of our economy, natural gas is too valuable a fuel to serve as the primary energy service in major heating plants. RDF escalation costs, on the other hand, are more predictable because any increase will be related directly to production cost. The quantity of RDF will increase proportional to population growth and collection and production costs of RDF will decrease as the quantity of material increases and as population growth or nodes of high population develop.

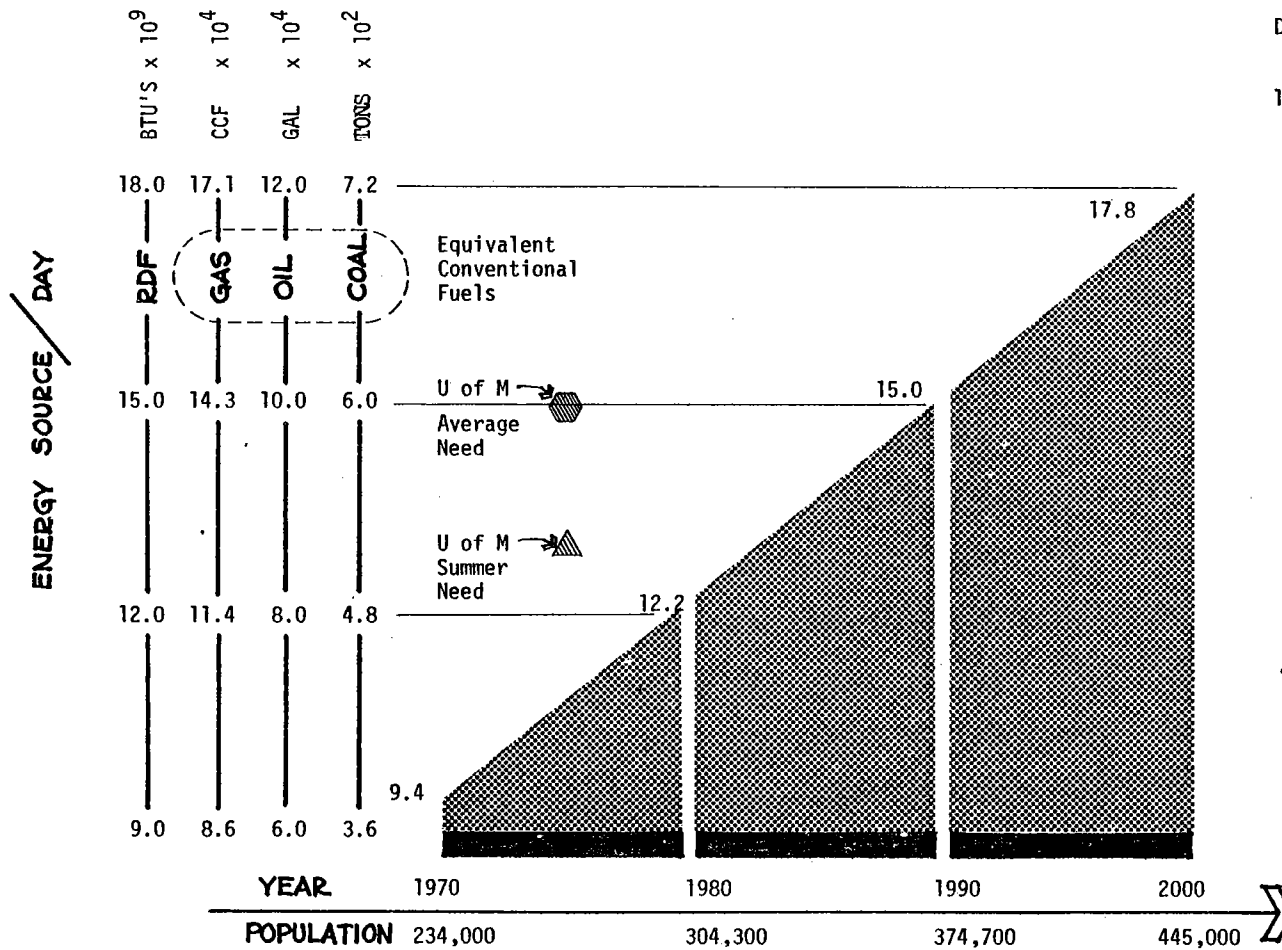
#### RDF - AN IMPORTANT ASSET

As indicated in Table G-1, RDF is presently slightly more expensive as a fuel than gas. The time span to construct a RDF plant is assumed to be four to five years. There are many political, legal, and technical issues that must be resolved before design of such an installation can be authorized. The design will probably take one year and construction about two years. It is conservative to postulate that escalation of conventional fuel costs will make RDF the most economical source of energy by the earliest date a RDF plant can be placed in operation.

#### MATCHING RDF LOADS WITH USER NEEDS

Before RDF has a proven value users must be found. The largest nearby consumer of energy is the University of Michigan. Graph G-1 relates energy consumption of the University of Michigan with the potential heat output of available RDF. As can be seen, the heat output could serve to base load the University of Michigan boiler plant. Other large scale users of energy should be studied to develop the most desirable mix of customers. Long range contracts should be written to reflect the bonding period of required capital improvement, and the ever-changing value of energy. These contracts should be written to give the user a highly desirable energy cost and the county a low cost for waste disposal. As in all agreements both buyer and seller should benefit.

# G4



### DATA BASE

#### 1. Combustion Efficiency

|      |     |
|------|-----|
| GAS  | 80% |
| OIL  | 80% |
| RDF  | 70% |
| COAL | 75% |

#### 2. Current Energy Costs

|      |           |
|------|-----------|
| GAS  | 14.6¢/CCF |
| OIL  | 40¢/GAL.  |
| RDF  | \$15/TON  |
| COAL | \$45/TON  |

#### 3. Population Data from Washtenaw County, Estimates of Population-- June 1970

#### 4. Solid Waste Production/Week in 1970

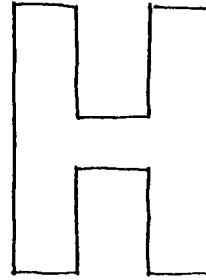
|             |                  |
|-------------|------------------|
| Residential | 1890             |
| Commercial  | 2660             |
| Industrial  | 3500             |
|             | <u>8050 tons</u> |

Assume 80% available for use.  
Assume solid waste production proportional to population.

#### 5. Energy requirement for U of M central steam plant as per telephone communication with Mr. Ken Beaudry.

## ENERGY AVAILABLE FROM RDF

GRAPH G-1  
BASED ON PROJECTED POPULATION GROWTH  
GRAPH SHOWS SAVINGS IN CONVENTIONAL FOSSIL FUEL



# recommendations

The following recommendations are made by the study team. These recommendations are based on the more detailed analysis contained in each section, and are presented here in summary form:

That the area undertake, as a conscious strategy, Option 3, Intensive Development. This is based on the following:

growth is inevitable

growth must occur to capitalize public and private investment

growth management controls can be formulated and implemented to ensure orderly growth of high quality

the probability of success is higher with Option 3 because, either the institutions through cooperative effort, or a government entity with strong leadership, has the capability to execute the strategy

That the area formulate and implement a river corridor policy recognizing three major zones:

the river zone

the prime zone

the fringe zone

That area governments recognize the need for strong and coordinated growth management policies and programs, and that the county assume the overall responsibility for guiding the area's development

That in view of property tax movements occurring nationwide, and in Michigan, the local governments (including utility and transportation authorities) of Washtenaw County should pursue management policies and encourage development decisions that promise long-term, efficient operations and maximum utilization of existing capital investments

That the Dixboro Road/railroad intersection be grade-separated and the adjacent roadway system be reorganized to provide improved safety and ease of access

That the County take the lead in responding to energy considerations through the creation of a County Solid Waste Division to produce fuel from solid waste and a County Energy Division to manage the conversion and distribution of energy.

# acknowledgements

# The Team...



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Architect/Urban Designer  
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Mr. Cunningham, R/UDAT team leader, an architect and urban planner, has just returned from serving as director of a growth center development strategy study for the Australian government. The study concerned itself with preservation and development of three existing cities as well as a new one with a combined population target of approximately 250,000.

His experience includes serving as Director of Operations in the Arabian Gulf for Llewelyn-Davies International. Mr. Cunningham has won several urban design awards and served as Chairman of the 1976 Reynolds International Community Development Awards Jury. He is a Past Chairman of the National American Institute of Architects Committee on Urban Design and Planning.



**IAN BALL**  
Political Scientist  
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Dr. Ball, an urban planner and political scientist, has served as an Associate Planner with the city of Fort Worth, Texas, as a regional planner with the Metropolitan Council of the Minneapolis, St. Paul Metropolitan area. He has just received his law degree from Indiana University School of Law and is currently completing a research grant from the National Science Foundation concerned with a detailed analysis and evaluation of local growth management systems. Dr. Ball has also taught graduate and undergraduate courses in public administration and urban policy and urban policy and is co-author of Urban Growth Management Systems.



**PAUL BUCKHURST, R.I.B.A., A.I.P.**  
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Mr. Buckhurst, a regional planner, is Director in charge of Llewelyn-Davies Associates' Planning Practice. He is also a member of the faculty at Pratt Institute, Department of City and Regional Planning, New York, and at the Department of Architecture, Columbia University. Prior to joining L.D.A., he worked as a planner with the London County Council, involved in redevelopment programs for a number of inner London boroughs. In the USA he has directed consultant teams in a variety of urban renewal and revitalization projects as well as undertaking urban studies in Columbia, South America and in the Caribbean. He is currently in charge of the site planning work for major new office and research center for a private corporation in Philadelphia. Mr. Buckhurst holds a Master of Architecture degree from Harvard University and a Planning degree from London University, England.



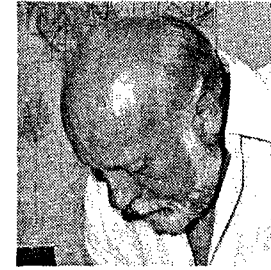
EDGAR GALSON, P.E.  
Mechanical Engineer and Energy Specialist  
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Mr. Galson is a partner of a multi-disciplinary consulting and design firm comprised of personnel skilled in various fields of engineering, pollution testing, and industrial hygiene. The organization contains a fully equipped analytical laboratory. Recent projects which he has personally directed include a Bio Chemistry Building for Harvard University, the Crouse-Irving Memorial Hospital in Syracuse, New York and numerous pharmaceutical facilities.



HARRY GARNHAM  
Landscape Architect  
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Mr. Garnham is Principal in the firm, New American Landscape, a lecture/consulting firm in landscape architecture, urban design, environmental planning and townscape preservation. Some of his projects include a townscape preservation & Enhancement Plan for Nava Sota, Texas; a town design and appearance Plan for Vinton, Virginia. In addition to serving on the faculty of the College of Architecture and Environmental Design at Texas A & M University and formerly at The University of Virginia, Mr. Garnham has received numerous special grants and awards, written several publications and has a new work on Townscape Preservation & Enhancement in progress.



NORMAN HOOVER, A.I.A.  
Architect/Urban Designer  
Caudill Rowlett Scott  
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Mr. Hoover, an architect/urban designer and Senior Vice President of CRS, is Director of the Commercial/Civic/Governmental Building Group and is responsible for all design and planning assigned to this group. His work includes designs of Manhattan Community College, New York City; the Gulf Air Headquarters Building, Bahrain; the Four College Science Building, Claremont, California; and the Norwalk Hospital, Norwalk, Connecticut. In addition, Mr. Hoover has been involved in master planning for the University of the District of Columbia, Washington D.C.; Catholic University, Lima, Peru; and Trumbull Civic Center, Hartford, Connecticut.



JIM MURRAY  
Economist  
Briscoe, Maphis, Murray and Lamont  
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Dr. Murray, is a principal and vice president of a governmental consulting firm. Among his recent projects are analysis of budget and capital improvements programming systems in Aurora, Colorado, and Tucson, Arizona; an Action Handbook for energy-impacted communities for EPA; and various consulting activities relating to innovative bond financing for Boettcher & Company, Denver, Colorado. Dr. Murray is an Associate Professor in the Graduate School of Public Affairs at the University of Colorado.



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Mr. Di Sarcina is the Deputy Director of The Central Transportation Planning Staff of the Boston Metropolitan Area Planning Council. Some of his responsibilities include contract Administration, budgeting, Transportation Planning Documents, personnel and office management. Prior to this position Mr. Di Sarcina was Chief Transportation Planning Officer for the Boston Redevelopment Authority.



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