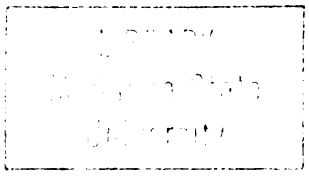

TOWARD THE UNDERSTANDING OF MARKETING A WATER QUALITY MANAGEMENT PROGRAM

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Plan B
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PREFACE

All too often, the fate of a well-conceived planning program is a dusty shelf in some hard-to-get-to back closet. How effective can a planner expect to be in serving his client or constituency if his plans and programs for effectuating change are never implemented? It is the thesis of this author that such planning programs must, in fact, be literally "sold" to the client, constituency or administrative decision-making body prior to that element's acceptance of the "product." The analogy, of course, is that of marketing a given commodity through either a retail or wholesale outlet, or throughout an entire marketing distribution chain -- for example, the manufacturer to the wholesale unit to the retail outlet to the customer/consumer.

Without question, there has been considerable criticism of the marketing profession in regards to the use of "hard-sell" techniques by marketing distribution outlets to first promote and then to eventually sell the customer a product that he/she neither wants nor needs. Certainly, one cannot condone such activities as they must ultimately lead to an ineffective and inefficient use of resources. And yet, one cannot blame or discredit the manufacturer for marketing a good or service which is intended to satisfy the wants and needs of a given market segment. Afterall, the manufacturer is in business to make a profit. The marketplace is, of course, the forum for the exchange of goods and services and forms the basis for the Western world's free enterprise economy.

In contrast to the operating mechanisms and objectives of the private sector of our domestic economic system, the public sector's several agencies, bureaus, departments and offices are charged with the responsibility of ensuring the health, safety and general welfate of the community at large. In addition, social reformers, in recent times, have fought with relative success for the recognition of social problems and for the design and implementation of programs intended

to mitigate and perhaps even reverse the effects of the decay of our domestic social order. The marketplace of the private sector is replaced by the extremely complex, multi-dimensioned bureaucracy of the governmental bodies in the public sector. The bureaucracy can and does work effectively and efficiently; witness the checks-and-balance system of our federal government. But the bureaucracy can also become a political marionette, being manipulated by those in power or by those individuals or corporate conglomerates who can exert their influence by virute of their ownership and/or control of our nations's resources. In addition, the vast and oftentimes nebulous network of linkages -- both formal and informal -- which help to coordinate and integrate the activities of the bureaucracy's several agencies, bureaus, departments and offices can be so exploited that the flow of information can be effectively turned-off, just as the flow of blood to and from the human heart can be controlled by the application of pressure upon one of several propitious points of the human anatomy. Such was the case of the Watergate conspiracy when the President's advisors were able to control the flow of information and use their political appointments to literally control the Office of the Presidency, and thus the affairs of the entire country.

Certainly, most every planning activity or decision has its political ramifications. Undoubtedly, there is some degree of corruption, favoritism or whatever else one may wish to label it occurring in nearly every administrative unit. It happens in the U.S. Congress just as it happens in the administration of our own department. The bottom line is that the planner and the planning discipline are not beyond reproach. We must "clean-up" our own profession before we can begin to judge another.

I believe that the planning profession can learn a great deal from the marketing discipline in terms of designing and implementing programs and policies based upon the identified, real needs of each and every "market segment" which comprises the community profile. With the passage of the Federal Water Pollution Control Act (FWPCA), PL 92-500, in October of 1972, planners were given a new tool for

the planning, management and coordination of programs designed to abate water pollution problems at a level transcending local boundaries. Section 208 of the Act specified that regional agencies could be designated to prepare areawide wastewater treatment management plans. Several such regional agencies across the country have had a great deal of success with their 208 programs, while many others have had significant difficulites with theirs. I believe that the use of marketing principles applied to the planning process could possibly improve the potential for implementation of such planning programs.

The following text represents the culmination of a course of study leading to the fulfillment of the requirements of the Plan B option. Prior to the submission of this 2-credit hour effort, I have successfully completed the following sequence of courses as previously approved:

(1) RD 824 -- Watershed Management; 5 credit hours; completed, Spring quarter, 1977.

(2) MTA 804 -- Marketing Concepts and Processes; 4 credit hours; completed, Fall quarter, 1978.

(3) MTA 805 -- Marketing: Models, Theories and Strategies; 4 credit hours; completed, Winter quarter, 1978.

INTRODUCTION

TOWARD THE UNDERSTANDING OF MARKETING A WATER QUALITY MANAGEMENT PROGRAM is intended to provide the professional planner and the municipal planning official with a different perspective in regards to the design and ultimate implementation of the water quality management program. To this end, a case study approach will be employed utilizing the Tri-County Regional Planning Commission's (TCRPC) Tri-County Region 208 Water Quality Management Plan, dated August 1977 (and heretofore referred to as the TCRPC plan). The primary data source, therefore, will be the several volumes of documentation issued by the TCRPC.

Even though a case study approach will be employed in developing the arguments in support of my primary thesis, it is the intent of this paper to neither describe the TCRPC plan nor to critically evaluate its substance. The former has already been completed by the agency with its several volumes of documentation. The latter would necessitate the development of either a marketing model or a set of marketing guidelines against which the TCRPC plan could be compared and critically evaluated. Such an effort, however, would prove to be of little value in that the TCRPC program was not designed in accordance with, or based upon such guidelines during its development. Of what value then, will this report be to the planning practitioner?

The answer to this very important question is that by utilizing the marketing principles that will be discussed throughout this paper, the planning practitioner will hopefully be able to communicate better with the community, and therefore more effectively serve the community and its needs. It is the contention of this author that the lack of communication between the planner and his/her constituency is the primary reason for the failure of their planning programs. One is given the impression that in general, it is only after the planner has completed the design of the program does he/she seek public comment concerning it. The public must begin to play a larger

part in the process. The planner cannot plan effectively for the public, unless he/she can communicate and plan with the public.

This is the very essence, though, of the marketing discipline. The marketing profession differentiates between the concepts of mass marketing and target marketing, the latter being generally accepted as the more desirable and socially-acceptable approach. Mass marketing typifies a production-oriented approach, which is predominantly organized around the development of a product concept. This approach assumes that all people are similar and will desire to purchase the product being offered. Thus, every man, woman and child is considered to be a potential customer, regardless of the product being marketed.

In contrast, target marketing is typical of the market-oriented approach to micro-marketing -- micro-marketing being concerned with the performance of individual business activities which direct the flow of goods and services form the producer to the consumer in order to satisfy the customer's wants and needs, while concomitantly realizing the corporate objectives. The market-oriented firm recognizes that all people are different and attempts to develop a product concept that will meet the needs and/or desires of specific, relatively homogeneous segments of the total population. In developing such a product -- a product evolving from identified real needs -- the market-oriented firm develops the product's marketing mix -- a series of controllable variables including the Product itself, the Place where it is offered for exchange and how it arrives there, how the product is Promoted and the Price for which it is exchanged -- such that it provides the firm with a differential advantage over its competitors.

The product's marketing mix is one of the two components which form the framework with which the marketing manager deals. The second component is known as the uncontrollable variables. Included among these variables are the cultural, social and economic environments, the political and legal environments, the existing competitive business situation and the resources and objectives of the firm.

It is these several environments and other uncontrollable vari-

ables which will provide the basic framework for this paper. Each of these elements will be examined in greater detail in a chapter devoted exclusively to the examination of the relationship between the variable in question and the several components of the marketing mix, as they relate to the TCRPC 208 Water Quality Management Plan, as a product of that agency.

Chapter 1 will act as an introduction to the Tri-County region for the reader who is unfamiliar with the area. The chapter features a brief description of the regional setting, a more in-depth discussion of the region's physical features -- particularly in regards to how these features either limit or facilitate future urban development, a description of the nature of the current development within the region and closes with some broad generalizations concerning the possible patterns of future development within the region, as well as some personal views concerning the respective roles of both the planner and the community in assuring that the development patterns that are realized will, in fact, be desirable.

Chapter 2 -- The Cultural, Social and Economic Environments -- presents a discussion of the TCRPC plan in terms of the four elements of the marketing mix -- Product, Place, Promotion and Price -- in relation to the delimiting effects of the cultural, social and economic environments in which the plan is operational. The discussion opens with a section addressing the relevance of cultural attitudes in the design of the TCRPC plan and includes some comments concerning the changing nature of those attitudes. The discussion then proceeds to examine the context of the social environment in which the TCRPC plan must operate relative to certain features of that plan. An examination of the economic environment in which the plan is to be instituted then precedes an examination of the impacts of these several environments upon the TCRPC plan in terms of the four elements of the marketing mix.

The resources and objectives of the firm are the subject of Chapter 3. The chapter begins with a discussion of the objectives of the firm, agency and/or management unit and of the importance of a sympathetic attitude by top management towards a project, both

in relation to the TCRPC 208 plan. The larger portion of the chapter is then devoted to a discussion of the resources of the firm, agency and/or management unit and their effect upon the final recommended TCRPC plan. In addition, a list of studies conducted and a cursory examination of their contribution to the ultimate management plan is presented. Finally, a brief summary of water quality conditions in the region is presented, together with the technical solutions recommended for the abatement of water quality problems in the region.

The final chapter, Chapter 4, addresses the nature of the political and legal environments as they impact the TCRPC plan. The chapter opens with a brief commentary on the political ramifications of the TCRPC plan. The remainder of the chapter is then directed toward the examination of the federal water quality legislation and the state's enabling legislation.

A discussion of the competitive business situation as it impacts the TCRPC plan has been omitted due to its lack of applicability. The paper then concludes with a brief summary statement concerning the overall content and objectives of the work.

CHAPTER 1

THE TRI-COUNTY REGION

The intent of this chapter is to provide the reader, who is unfamiliar with the Tri-County Region, with a brief description of the region's attributes. In general, these attributes will be considered in terms of their contribution or potential contribution to the future development of the region. The attributes to be described include the regional setting, the physical features -- topography, climate, soils, groundwater and surface waters -- and the nature of the present development within the region. The chapter will conclude with some summary remarks regarding the regions's attributes and their effect upon the future nature of the three-county area.

I. Regional Setting

The Tri-County Region is composed of Clinton, Eaton and Ingham Counties and is located in the south central portion of Michigan's lower peninsula. The entire three-county area has been designated by the Governor's office as one of the thirteen State Planning & Development Regions within the state -- Region VI. The region is bounded by ten other southern Michigan counties, which are in turn, parts of six other gubernatorially-designated State Planning & Development Regions (see Figure #1). The region's largest urban area, the Lansing-East Lansing metropolitan area, had a 1974 population of 183,395. The 1974 population for the surrounding (and encompassing) nine-township urbanized area was 288,683 (which includes the Village of Dimondale and the Cities of DeWitt, East Lansing and Lansing).[2] As previously mentioned, planning activities of regional concern

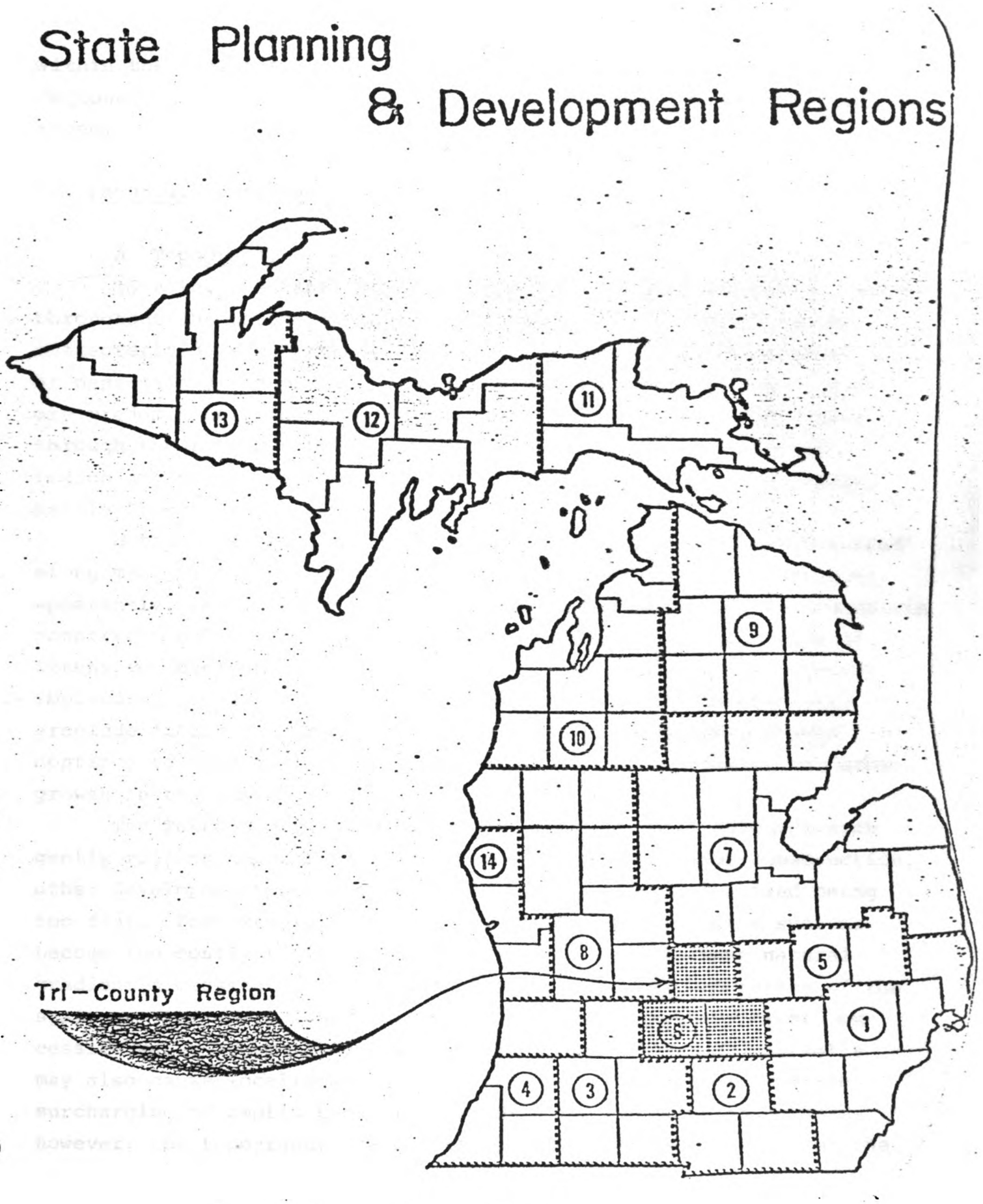
State Planning
& Development Regions
13
12
11
9
10
14
7
8
5
1
4
3
2
Tri-County Region

Figure #1 [1]

within the region are under the jurisdiction of the Tri-County Regional Planning Commission, the region's designated A-95 review agency.

II. Physical Features

A. Topography

To a large extent, there is very little topographical variation throughout the three-county area. In general, the relief can be characterized as moderately undulating with periodic occurrences of depressions and plains. Steep contour gradients do exist, but are predominantly found adjacent to the several rivers which flow through the region. Among the rivers that are found within the region are the Maple, Looking Glass, Red Cedar, Grand, Thornapple, Battle Creek, Portage and Huron.

Within the past 15 years, residential development has occurred along many of these rivers and within their respective floodplains. Apparently, the physical limitations and hazards imposed by floodplain construction have not been severe enough to preclude this type of intensive development. The remainder of the region, as previously implied, possesses little topography too severe to theoretically preclude future development. Thus, topographic features should continue to represent a relatively minor factor in shaping the urban growth in the region.

The TCRPC publications remind us, however, that although such gently rolling topography is most conducive to building construction, other development problems may arise as a result of the land being too flat. For example, sanitary sewer and storm drainage systems become too costly to install and operate if insufficient natural gradient necessitates mechanical pumping for proper operation of the systems. And where insufficient runoff control systems exist, excessive water accumulation during spring thaws or heavy rainfalls may also cause localized flodding, flooding of basements and the surcharging of septic tank tile fields. To reiterate once again, however, the topography characteristic of the major portions of the

Tri-County region affords potential urban development.

B. Climate[3]

The region's climate differs little from that which may be characterized as typical for central portions of the state. Due to the influence of the Great Lakes, the climatic characteristics of the area alternate between continental and semi-marine. The mean annual temperature for the entire region is 47.6 degrees Farenheit. Precipitation is fairly evenly distributed throughout the year with a mean annual rainfall of 30.7 inches and a mean annual snowfall of 45.8 inches. Approximately 44% of the year or an average of 161 days, appreciable precipitation in the region is detected and recorded. Evaporation occurs in the area at a rate of 0.4 million gallons per acre of water per year.

The prevailing winds are generally from the south-southwest in the summer and from the west-southwest in the winter. The average wind velocity is approximately 10.7 mph. Tornadoes are a possible threat to the area, but destructive thunder and severe wind storms are a more common problem.

C. Soils[4]

The region's soils have their origin in the glacial movements of the Paleozoic era of the earth's geological history. Like most Michigan soils, these soils have been formed as a result of a number of factors. The last glacial movement -- the Wisconsin advance/retreat, the amount and quality of precipitation on its surface, erosion, vegetation cover and land forms continually contribute to influence the evolving nature of the soils within the area.

As a result, these soils differ considerably in texture, color, natural fertility and chemical and physical composition. Intermediate and heavy-textured soils are dominant within the region with loams occupying roughly three-fifths of the total land area, soils heavier than loam about one-fifth of the total land area and sandy loams and sands collectively occupying a little better than one-tenth of the total land area. Heavy clays and loose incoherent

sands are of small areal extent. Organic soils (muck/peat) occupy nearly one-twelfth of the region's land area and the remainder of the area, less than 1%, is occupied by waterbodies (see Figure #'s 2-5).

Physical properties of a soil group are determined largely by the texture, structure and composition of the soil material. A given soil group's water-holding capacity (capillarity), porosity and permeability also contribute to determine its drainage capacity. Poorly drained soils, for example, allow an accumulation of organic materials in the surface horizons. If these soils are also of an intermediate to heavy texture, they will have most likely maintained a very large supply of plant nutrients. These soils are thus notably the most productive for general agriculture and are found on level plains or topographic depressions. When an excessive accumulation of organic materials over the mineral soil materials exists, the soil is known as muck or peat.

The well-drained soils possess a surface horizon which has a relatively low content of organic materials and which is also acidic in nature. Its lower horizons contain increasing amounts of clay with a plentiful supply of lime occurring at depths of 3 to 4 feet. Below this depth are found unconsolidated materials ranging from coarse sand and gravel to heavy clay loam.

The soils in this region are generally of medium to high fertility and common agricultural crops are grown here with good to excellent results. Winter wheat and field beans are the primary cash crops, with some corn, hay crops, oats and barley also being grown. A number of small farms also produce a variety of specialty crops, particularly in the areas where organic soils are found.

Despite the abundance of prime agricultural land throughout the region, many fields remain in fallow or are being converted to urban uses. There are few limitations, from a soils standpoint, for restricting urban development in these areas; even septic tanks and their tile fields would be generally acceptable in non-intensively developed areas. The areas closer to the several rivers flowing through the region, however, do present severe limitations to inten-

Figure #2[5] Soil Associations and Respective Erosion Rates Found in the Region

Soil Association Number	Name of Soil Association	Erosion Rate Tons/Acre/Year
INGHAM CO.		
1	Marlette - Capac - Owosso	4.36
2	Houghton - Palms - Edwards	0.72
3	Oshtemo - Houghton - Riddles	2.11
4	Capac - Brookstow - Marlette	4.62
5	Marlette - Oshtemo - Capac	2.81
6	Riddles - Hillsdale - Aubbeenaubbee	3.76
CLINTON CO.		
1	Marlette - Capac - Parkhill	4.70
2	Capac - Parkhill - Marlette	4.42
3	Blount - Sims - Morley	3.19
4	Boyer - Marlette - Houghton	1.22
5	Boyer - Wasepi - Spinks	2.05
6	Sebewa - Matherton - Boyer	2.29
7	Sloan - Houghton - Cohoctah	1.28
8	Houghton - Gilford - Adrian	1.70
EATON CO.		
1	Boyer - Bixby - Oshtemo	1.37
2	Houghton - Gilford - Adrian	1.09
3	Boyer - Cohoctah - Houghton	2.98
4	Marlette - Capac	4.39
5	Capac - Parkhill	4.59
6	Marlette - Capac - Owosso	4.46

CLINTON COUNTY
SOIL ASSOCIATION MAP

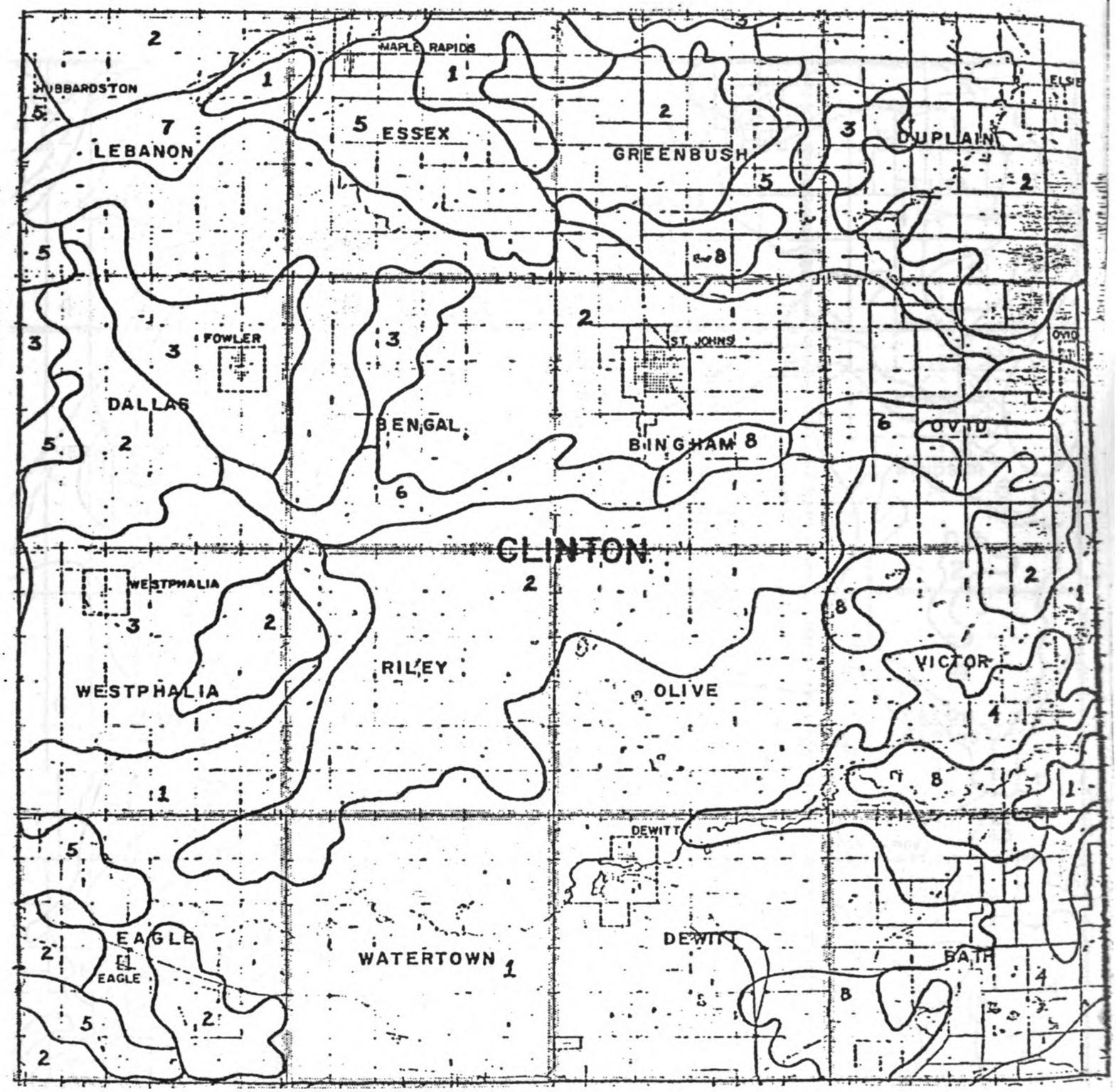

Figure #3[6]

EATON COUNTY
SOIL ASSOCIATION MAP

Figure #4[7]

INGHAM COUNTY
SOIL ASSOCIATION MAP

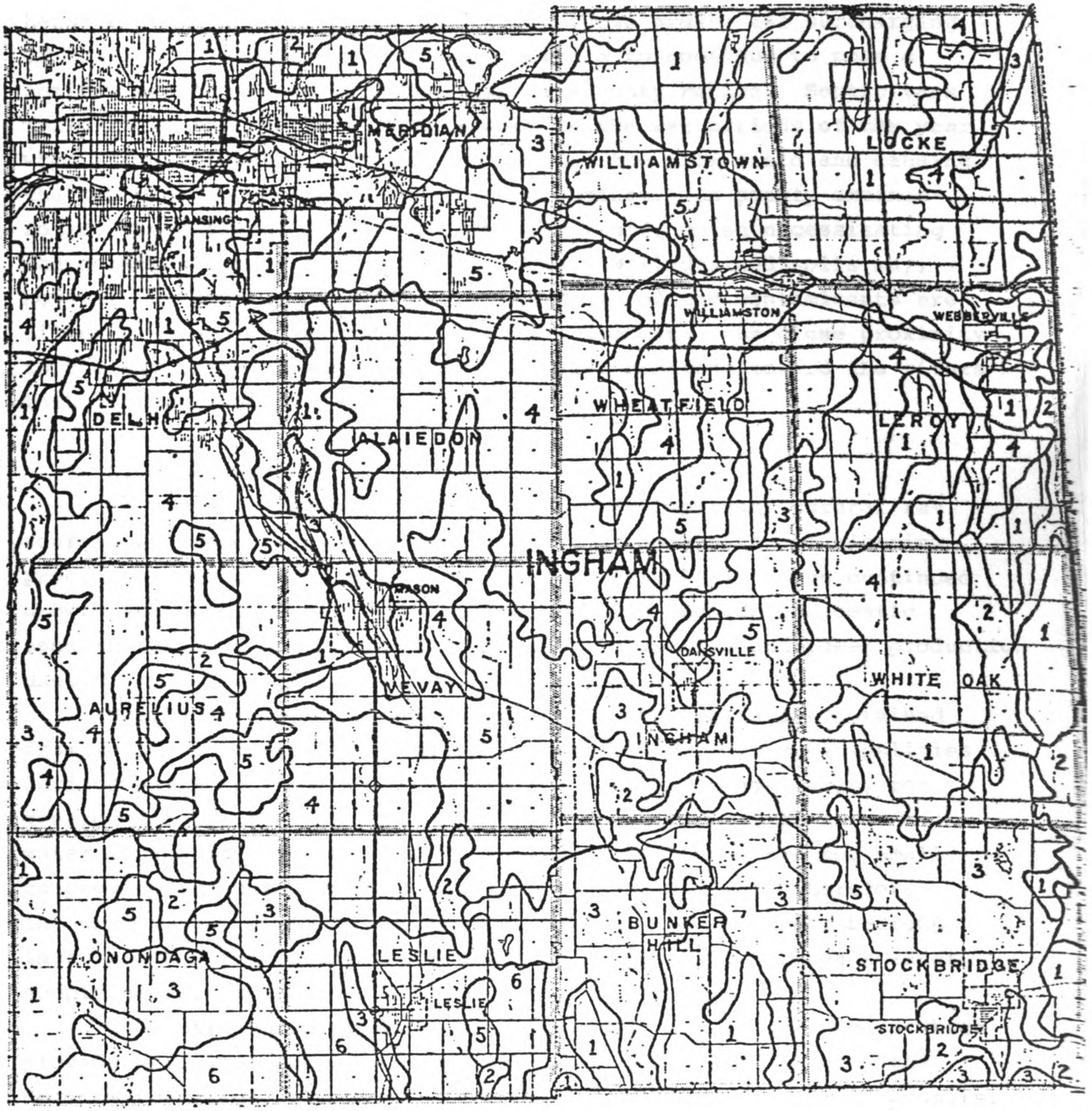

Figure #5[8]

sive development based upon the underlying soils. Unless a comprehensive sewer system is constructed in these areas, the surcharging of the septic tank tile fields are certain to continue to pose a serious health hazard to the entire Tri-County region. Septic tank failures in the past have been common in the wet periods of the year when the water table is high, surcharging the tile field and causing the raw effluent contained therein to surface. In poorly drained soils, the effluent remains in the tile field, often necessitating the construction of a second tile field. Well-drained soils may, however, be equally hazardous. Though some of the contaminants are filtered naturally by the sand/gravel components, the close proximity to the rivers and the natural ground water gradient toward the rivers insure contamination of those waters.

D. Groundwater[9]

Groundwater represents one of the most important natural resources when one is studying water quality management and planning programs. An adequate supply of water is essential to the continued growth and development of the region, both in regard to domestic uses in the home and other agricultural, industrial and power production uses.

Nearly all potable water supplies in the region are obtained from wells within the corporate limits of the various municipalities, Surface water in the form of rivers and streams is available, but due to seasonal fluctuations in stream flow, its usefulness as a water source is limited. Other areawide waterbodies are too small to provide adequate supplies of water for these uses. Therefore the groundwater found in the glacial deposits in the upper bedrock layer plays a critically important role in meeting the area's water supply needs.

There are three primary geologic formations in the region which provide water for domestic, industrial and commercial usage: the Saginaw Formation, the Grand River Formation and the glacial deposits. Of these, the Saginaw Formation is the major source of groundwater for the region. It is composed primarily of beds of sandstone and

some shale. This 100-800 foot thick formation normally yields substantial quantities of water which are generally of fairly high quality. Occasional high iron and hardness levels have been associated with water obtained from this formation, however.

It is imperative that the planning process recognize the importance of comprehensive water management programs. Acquifers, such as the Saginaw Formation, require periodic replenishment, either naturally or artificially. If these sources are to be used for future water supplies, careful planning must be done to insure that future urban development does not encroach upon recharge zones. Adequate planning now can help to avoid serious problems in the future.

E. Surface Waters[10]

Surface waters in the region refer to rivers, streams, natural lakes and artificial impoundments. There are ten major river basins located in the Tri-County region; these are the Maple, Stony Creek, Looking Glass, Lower Grand, Thornapple, Battle Creek, Upper Grand, Sycamore Creek, Red Cedar and Huron (see Figure #6). There are also more than 50 named lakes in the region, the highest concentrations of which occur in southeastern Ingham and northwestern Eaton counties where the glacial deposition was most favorable for lake formation.[12] "Lakes Geneva, Ovid and Victoria are the major impoundments of the region, exclusive of the Grand River and its major tributaries. On the Grand River, the Moores Park impoundment and the backwaters of the North Lansing dam are major recreational impoundments."[13] Not to be overlooked is Lake Lansing in northern Ingham County, a site which not too long ago served as one of the major recreational areas in the region.

Most of the rivers and lakes in the region have shallow bottoms that prevent thermal stratification. As such, the TCRPC officials report that up to 99% of the region's lake bottoms, in particular, may be capable of growing aquatic plants in the littoral zone.[14] The natural eutrophication, or aging, of a waterbody is oftentimes accelerated by the catalytic effect of man's degrading influence. "Nutrients from lawn runoff, road drainage, and failing septic sys-

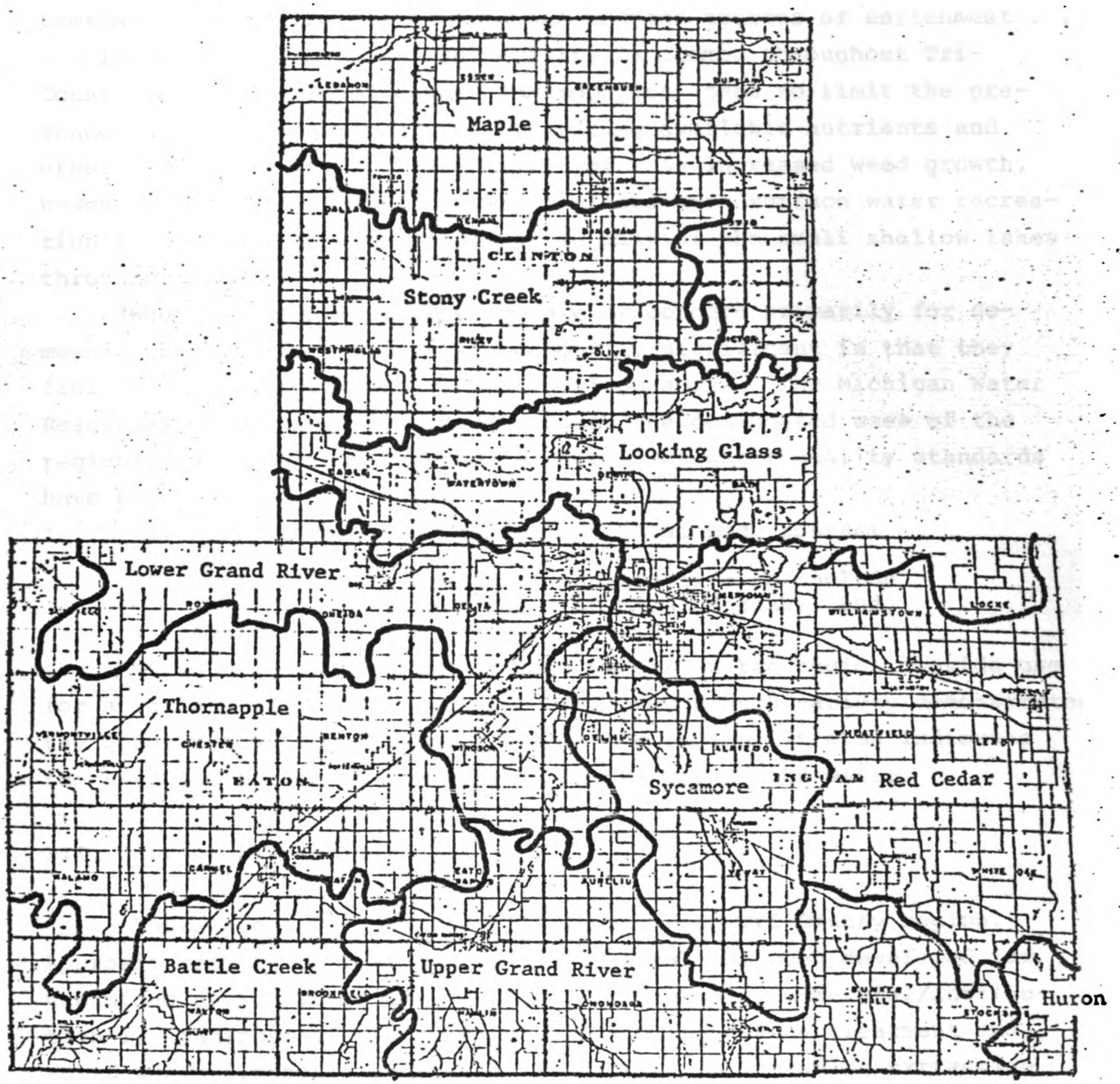

Figure #6[11]

Major River Basins in the Tri-County Region

tems are some of the most common man-induced sources of enrichment . . . . In general, increased productivity is common throughout Tri-County lakes but rooted plants (macrophytes) tend to limit the presence of nuisance algae blooms by storing available nutrients and other raw materials."[15] As a result of this increased weed growth, however, some limitations have been placed upon surface water recreation in the region -- particularly on many of the small shallow lakes throughout the area.

Whereas groundwater sources are of concern primarily for domestic uses, surface waters are primarily significant in that they facilitate commercial and recreational pursuits. The Michigan Water Resources Commission has thus indicated the designated uses of the region's major surface waterbodies for which water quality standards have been adopted:

(1) Recreational uses to include total body contact sports;
(2) Fish, wildlife and other aquatic life to include all intolerant warm water species of fish; and,
(3) Agricultural and commercial uses.

It is evident that the surface waters in the region provide use for a variety of activities. But even though such variety demonstrates the general adequacy of water within the region, it also indicates the need for increased supervision in the use of the water.

III. Current Development[16]

There are 1,097,345 acres of land in the Tri-County region. Approximately 6% of that land (62,687 acres) has been developed for urbanized uses. These uses include Residential, Commercial/Institutional, Transportation/Utilities -- including sewage treatment and solid waste disposal facilities, Industrial -- including extractive activities and and inclusive category, Other Urban, which includes such activities as public parks, golf courses and cemeteries. Of these uses, residential activities consume by-far-and-away the largest percentage of land -- 62% or 38,940 acreas (see Table #1).

Active agricultural pursuits occupy the largest amount of land in the region consuming 835,681 acres or 76% of the total land area.

Table #1 [17]

Category	Land Use	Acreage		Category %		Total %	
Developed	Residential		38940		62		4
	Commercial -- Institutional		6744		11		1
	Transportation -- Utilities	3786		6		0	
	Sewage Treatment	766		1		0	
	Solid Waste Disposal	122		0		0	
	sub-total		4674		7		0
	Industrial	2771		4		0	
	Extractive	4475		8		0	
	sub-total		7246		12		0
	Other Urban		5083		8		1
Category sub-total			62687		100		6
Active Agriculture	Cultivated Cropland		635390		76		58
	Tree Fruits		1933		0		0
	Bush Fruits		5704		1		1
	Confined Feeding		202		0		0
	Permanent Pasture		192452		23		17
Category sub-total			835681		100		76
Undeveloped	Brushlands		58670		29		5
	Broadleaved Forest		92216		46		9
	Coniferous Forest		1529		1		0
	Mixed Forest		1291		1		0
	Open Water		6083		3		1
	Forested Wetlands		23128		12		2
	Shrub Swamp		14087		7		1
	Marsh		1963		1		0
Category sub-total			198967		100		18
Total			1097345		100		100

Cultivated croplands utilize 76% of the active agricultural lands (635,390 acres). The only other significant use in this category is permanent pasture lands which occupy 23% (192,452 acres) of the total land area devoted to active agricultural pursuits. The remaining uses in this category include bush and tree fruits and confined feeding operations.

The remaining 18% of the region's land area -- 198,977 acres -- is undeveloped. Most of the uses identified are either forested areas or wetlands. The specific land cover/uses identified are brushlands, broadleaved forests, coniferous forests, mixed forests, open water, forested wetlands, shrub swamps and marshes.

(The reader is referred to the 1972 Land Cover/Use Inventory of Clinton, Eaton and Ingham Counties prepared by the MSU/NASA Remote Sensing Project for detailed descriptions of each of the land cover/use categories identified, as well as for the methodologies employed in obtaining the above data.)

IV. Summary

Many growth-stimulating forces exist within the Tri-County region. The region's physical features, most notably, are generally conducive to development. In fact, since the land is developable, good agricultural land is being taxed according to the "highest and best" economic use. This often results in the land becoming too expensive to cultivate. In turn, this increases the pressure upon the landowner to either subdivide or to sell his/her property to a real estate developer. Oftentimes, unfortunately, this results in unbridled urban development.

Such growth could possibly occur within the Tri-County region. Accessibility to the region is presently very good and with the completion of the proposed interstate freeway system, which will totally encircle the Lansing-East Lansing metropolitan area, the accessibility to the region should improve further. Also, Capital City Airport intends to expand its facilities, thus improving its services to the region. In addition, several railroad franchises presently service

the Tri-County region, including the Amtrak commuter passenger train which operates daily between Chicago and Port Huron. The combination of available, developable land and good accessibility thereto, provides an attraction to several kinds of light industrial development. In addition, an adequate labor force does exist that would satisfy the requirements of such industries. In contrast, further heavy industrial development is unlikely due to the lack of availability and access to sufficiently sized water courses, the inability of such industries to meet Environmental Protection Agency (EPA) pollution standards and an insufficiently large labor force.

To a great extent, such heavy industrial development is neither desirable nor likely. Urban residential growth and perhaps some light industrial development, however, will occur within the next twenty years. These kinds of development may or may not be desirable. It is often the planner's responsibility for making the final judgement concerning the desirability of such developments. The planner generally does have adequate data to make an objective decision, but he/she must also be cognizant of public sentiment.

My perception of the planner's task then, is to monitor the public sentiment and then turn that sentiment into concrete goals and objectives relating to the most desirable, and realistically attainable future social and/or physical configuration for the community or region in question. Policies must then be formulated relating to how these objectives are to be attained; specific programs are then designed to achieve the stated goals; and perhaps most importantly, these programs must then be implemented.

But these are merely words -- and perhaps lofty ideals. There needs to be a commitment -- a commitment to succeed at the desired goal. It is really no different in life. It has been said that losers make promises, but winners make commitments. There needs to be a commitment by public officials to develop the sort of environment in which it is desirable to live, work and play, and which can also be enjoyed equally by all segments of our society. Furthermore, there needs to be a commitment by the public to become involved in the local planning process because communication and

and continuous feedback are essential components of that process. In many cases though, the public must be educated as to both the merits and de-merits of a given project. In my opinion, it is the planner's responsibility to provide such information. Oftentimes, however, the planner must transcend that effort to literally "sell" the need for his/her project to the public.

In order to effectively "sell" this project, the planner must be familiar with the nature of the product even before that product is developed. This requires total familiarity with the enabling legislation. Ideally then, the development of the product will be a joint effort of the planner and his/her constituency (in reality, as previously discussed, public involvement rarely occurs during the project design phase). The planner's responsibility, as I view it, is to lend technical expertise to this process, while the public is responsible for ensuring that the public sentiment is aired and accounted for. In order for the planner to effectively communicate with the public, he/she must become totally familiar with their social and economic characteristics and the nature of the culture which shapes their lives. The cultural, social and economic environments in which the TCRPC plan evolved is addressed in Chapter 2.

CHAPTER 2

THE CULTURAL, SOCIAL AND ECONOMIC ENVIRONMENTS

The cultural, social and economic environments are concerned with how and why people live and behave as they do. The marketing manager is concerned with these environments for they largely account for the differences in the consumption behavior of the targeted market segment. The planner should also be concerned with these environments because an individual's cultural, social and economic heritage largely account for his/her attitudes toward life and work, and are a reflection of his/her religious, ethical and moral values. Furthermore, it is evident that such attitudes have an effect upon an area's (local, regional, state or national) rate of growth and the direction of its development.

I. The Cultural Environment

The American culture, since the beginning of our country, has placed considerable value in the "Protestant Work Ethic." Indeed, our domestic economic system, the free-enterprise system, encourages and rewards hard work and achievement. "Americans are willing to work, but they also expect material rewards."[18] Our cultural heritage has also traditionally placed high value upon personal freedom, individualism and pluralism. In fact, the Revolutionary War, which won America its independence, was fought because the colonies disputed the Crown's right of, and imposition of government upon them without any representation for them in the process. Certainly, the concepts of personal freedom and individualism are not only integral to an individual's motivation for personal growth, but as previously implied, they are also the cornerstones of our capitalistic economic system. And the concept of pluralism forms the basis for not only

our political system, but for the recent (and continuing) social revolution, as well.

The combination of these particular elements gives rise to the issue of growth management, a particularly important issue to planners throughout the country. The point of contention, as brought to litigation in the Petaluma, California case, was whether or not a municipality could legally restrict an individual's freedom of travel. Petaluma, as the reader may recall, used its zoning ordinance (which took the form of a moratorium on municipal annexation) as a tool to enforce its policy of growth management. To the best of my knowledge, the court's decision was in favor of the plaintiff declaring the ordinance to be unconstitutional. This ruling naturally had an effect upon similar zoning ordinances throughout the country and in general, caused considerable concern over the future of land use policy nationwide.

Land use policy and the land use configuration resulting therefrom have a considerable effect upon water quality within any given region. Table #1 presents the major types of land uses occurring in the region and their frequency of occurrence. Some of these uses can have major adverse impacts upon the quality of the region's water. The tremendous amount of concrete that goes into the construction of residential, commercial and transportation facilities considerably increases the amount of urban runoff which reaches a region's watercourses. The quality of this runoff is almost always very poor. The seepage or leaching from inadequately sealed solid waste disposal facilities can also pollute the region's rivers and streams. This is a particularly common problem since many such facilities are located near such watercourses. Industrial and extractive activities often dump their wastes and by-products into local watercourses thereby causing the pollution of those watercourses. Utilities often use local watercourses in their cooling processes. The return of the slightly warmed water to those watercourses destroys the local aquatic environment. And the extensive use of fertilizers in agricultural activities often results in runoff which adds nutrients to the local watercourses and which in turn produces nuisance

algae blooms.

These impacts are but a few of the potential adverse effects that could result from poor land use planning. Even though these impacts are largely attributable to cultural attitudes, there is no reason why such attitudes cannot be altered. There is evidence, in fact, that our domestic cultural values are changing. There has been considerable interest in recent years in the pursuit of leisure activities and in the enjoyment of life. Indeed, the increasing interest . . . "in the 'quality of life' suggests a desire for less materialistic solutions and, in time, we may learn to satisfy our needs in different ways."[19] Certainly, the four-day work week and the concept of "flex-time" are examples of our changing cultural attitudes.

The value placed upon recreation and water-related recreational activities, in particular, are further examples of such changing cultural attitudes. The concern for both the quality of life in our ecosystems - both aquatic and terrestrial -- and the health and safety of our population, in terms of high standards for water quality for activities such as total body contact aquatic sports, has been the major impetus behind the enactment of the 208 water quality legislation.

II. The Social Environment

The interaction which occurs between an individual and his/her fellow man is largely governed by the social environment to which he/she belongs. The entire issue of moral behavior and an individual's professional ethics fall within the purview of the social environment. Of particular importance to both the planner and the marketing manager is the dichotomous relationship between "right" and "wrong". One's social experience -- both past and present -- govern his/her social behavior. Thus, in preparing either a planning or marketing program, the individual responsible must thoroughly acquaint himself/herself with the social characteristics of the groups of people which the program will directly impact prior to the

development of that program. The resulting sensitivity to the needs and global desires of these groups will thus aid the individual in developing a program (together, ideally, with representatives of these groups) that will most effectively realize the common objectives of both the agency and the public.

Table #2 presents selected population and general social and economic characteristics for the Tri-County region. Similarly, Table #3 presents selected educational attainment and general labor force characteristics by race for the state. In terms of population distribution, the region accounts for only 4.3% of the state's population. Within the region, however, we see that Ingham County accounts for nearly 70% of the region's population. As expected, the nine-township Lansing - East Lansing metropolitan area captured approximately 60% of the region's 1970 population distribution. If we can assume that the region's racial composition is roughly equal to that of the state, we can use Table #3 to tell us that nearly 90% of the region's population is while, while the remainder is black or of other ethnic origin. This is a dubious assumption to make, at best, however. Perhaps a better indication of the racial distribution of the Tri-County region could be realized by comparing a composite of the racial distributions for urbanized areas across the state against the total state figures. This, of course, also assumes that (1) the composite figures are representative of the Tri-County region, and (2) the composite figures are obtainable; obviously, the racial distribution figures for the Tri-County region are not available on a county-wide basis.

III. The Economic Environment

The economic environment is also very important to the planner and the marketing manager for it affects expenditures, and thereby alters an individual's or family's patterns of expenditure during times of both relative prosperity and adversity. The limits of expenditure for an individual spending unit is primarily a micro-economic concern.[22] In general, an individual will spend a given

Table #2

TRI-COUNTY REGION: SELECTED POPULATION AND GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS

Characteristic	State of Michigan	Tri-County Region									
		Total	%[1]	Clinton County	%[2]	Eaton County	%[2]	Ingham County	%[2]	Lansing Metro	%[2]
POPULATION											
1970	8875068	378423	4.3	48492	12.8	68892	18.2	261039	69.0	229605	60.1
Estimated July 1, 1975 [4]	9111000	398500	4.4	52500	13.2	77600	19.5	268400	67.3	--	--
EMPLOYMENT											
Non-worker to worker ratio	1.52	1.45[3]		1.58		1.48		1.30		1.27	
Civilian labor frce % unemployment	5.9	4.5[3]		4.2		3.9		5.5		5.3	
% industrial occupations	35.9	29.0[3]		31.4		34.3		21.4		20.9	
% white collar occupations	44.9	46.5[3]		39.4		45.1		55.0		57.0	
% government occupations	13.7	21.2[3]		15.9		17.2		30.6		13.7	
FAMILIES											
Median income	11032	11210[3]		11014		11423		11193		10878	
% with income less than poverty level	7.3	5.6[3]		5.2		5.4		6.5		8.3	
% with income of $15000 or more	26.7	26.1[3]		23.0		27.9		27.5		25.0	

1. percent of state total
2. percent of region total
3. three county average
4. Bureau of the Census, "Estimates of the Population of Michigan Counties and Metropolitan Areas: July 1, 1975 (revised) and 1976 (provisional)," p.3.

Table #3

TRI-COUNTY REGION: SELECTED EDUCATIONAL ATTAINMENT AND GENERAL LABOR FORCE CHARACTERISTICS BY RACE

Characteristic	State of Michigan	Race			
		White	%[1]	Black and other	%[1]
Total Population	8875068	7843805	88	1031263	12
Total Population Age 25 or Older	4594461	4115203	90	479258	10
Median School Years Completed	12.1	12.1	--	10.6	--
Males -- 14 yrs. and older	3066064	2733854	89	332210	11
Civilian labor force	2238732	2014561	90	224171	10
Unemployment	123544	101661	82	21883	18
Females -- 14 yrs and older	3293524	2926163	89	367361	11
Civilian labor force	1260468	1101883	87	158585	13
Unemployment	84400	66671	79	17729	21

1. percent of state total

percentage of his/her income based upon his/her respective social and cultural heritages. Naturally, the ultimate micro-economic limiting factor is an individual's income, the amount of which is determined roughly according to that individual's contribution to the productive effort of the firm for whom he/she is employed.

In turn, the firm is rewarded for the contributions that is makes to the national economic environment. The macro-economic environment is less sensitive to minor fluctuations in its various sectors than is the micro-economic environment. There are, however, a number of factors which significantly impact the "health" of our nation's gross national product: the nation's domestic and foreign policies, the balance of trade, inflation, unemployment, federal reserve policy, taxation and the underlying technological base, which affects the manner in which resources of the economy are converted to output.

The data in Tables #'ed 2 & 3 provide an indication of the nature of the region's economic environment. We see that both the region's non-worker to worker ratio and the percent of unemployment in the region's civilian labor force are less than the state-wide average. Correspondingly, the region compares favorably to the state-wide averages in terms of median family income and the percent of familys living in the region yet earning less than the poverty level income.

IV. Impact upon the TCRPC 208 Water Quality Management Plan

The cultural, social and economic environments have been discussed is terms of their potential impacts upon the activities of the planner and the marketing manager, but how do they relate to water quality and the TCRPC plan, and what do they have to do with the 4 P's: Product, Place, Promotion and Price?

The various environments described above combine together to impact an individual's or family's experience with water-related activities. Water sports and the aesthetic appreciation derived from scenic aquatic environments are, unfortunately, somewhat elit-

est in the sense that they are related to a unit's financial ability to purchase user privileges. The well-to-do professional/white collar wage earner perhaps owns a cabin cruiser, a ski-boat or maybe even a cabin in Michigan's beautiful north counry. Oftentimes, this individual's family belongs to a private country club where the lake or pool is kept very clean and where the children are taught to swim by a professional instructor on a relatively private basis. The semi-skilled, blue-collar wage earner, in contrast, may occasionally rent a canoe or row-boat at a metropolitan park where the beach and grounds are littered with empty beer cans and waste paper. The individual's children, if they are fortunate, learn to swim at the local community pool or "Y" where the masses gather more as a means of escaping the heat than for any other reason. Obviously, the quality of the water under such crowded conditions leaves a great deal to be desired. And in the more natural settings along Michigan's many rivers and streams, an individual's appreciation for nature's beauty is oftentimes hindered by the nuisance algae blooms or phosphate pools floating by, not to mention the malodorous smells emanating therefrom.

The TCRPC plan implicitly assumes that poor water quality is undesirable. This is a value judgement based upon the social and cultural environments. The 208 program, of course, is not limited to the Tri-County region. The legislation was enacted by the U.S. Congress and is administered through the EPA. The legislation provides for local and regional participation since water quality problems are site specific and measures designed to abate them must also be site specific.

The "Product" is, of course, the TCRPC plan. Its basic purpose is to first devise "the most cost-effective/institutionally feasible means for controlling water pollution in the region . . . ."[23] and then to implement the plan in order to achieve the EPA designated water quality standards.

> The plan was to be comprehensive in nature taking into account pollution from municipal and industrial wastewater, residual wastes, storm and combined sewer runoff and agricultural runoff. Particular emphasis was to be placed upon nonstructural alternatives and approaches to pollution control (fiscal policy, land management, non-point source

> preventive measures) rather than traditional measures which entail large expenditures in waste treatment plants . . . . The work program was broken into three major components which were integrated throughout the two year planning process: (1) project administration, (2) public participation and (3) data collection and analysis. 24

The first two of these, project administration and public participation, will be discussed in greater detail in this chapter, while the third component, data collection and analysis, will be discussed in Chapter 4, as previously outlined.

The project administration, or management process, is indeed a very important element in the plan because the plan is so complex and far-reaching that it could easily become entangled in its own organization. A strong administrative structure is a necessary requirement for such a plan as it will help to ensure continuity throughout the duration of the program. Additionally, a well-planned administrative structure will include ample opportunity for citizen participation in terms of program development, continuing administration and non-structural comment -- that is, comment by individuals not involved in the development and administration of the program.

The dominant feature of the TCRPC plan is, in fact, the "introduction of coordinative and management mechanisms within the existing governmental structure to achieve areawide water quality goals."[25] These measures could be immediately implemented in that the statutory authority presently exists by which this could be done. The proposed water quality management system is depicted in Figure #7. As shown, the legislative and regulatory responsibilities, both state and federal, are the purview of the EPA and the Water Resources Commission of the Michigan Department of Natural Resources. General oversight and planning, the designated roles of the regional agency, are the responsibility of the Tri-County Regional Planning Commission. The TCRPC has representatives from each of the member counties in addition to representatives from the cities of Lansing and East Lansing and another from Meridian Township. Its five primary areas of responsibility include: (1) review and updating of the plan, (2) sampling and monitoring of the improvement of water quality

PROPOSED WATER QUALITY MANAGEMENT SYSTEM

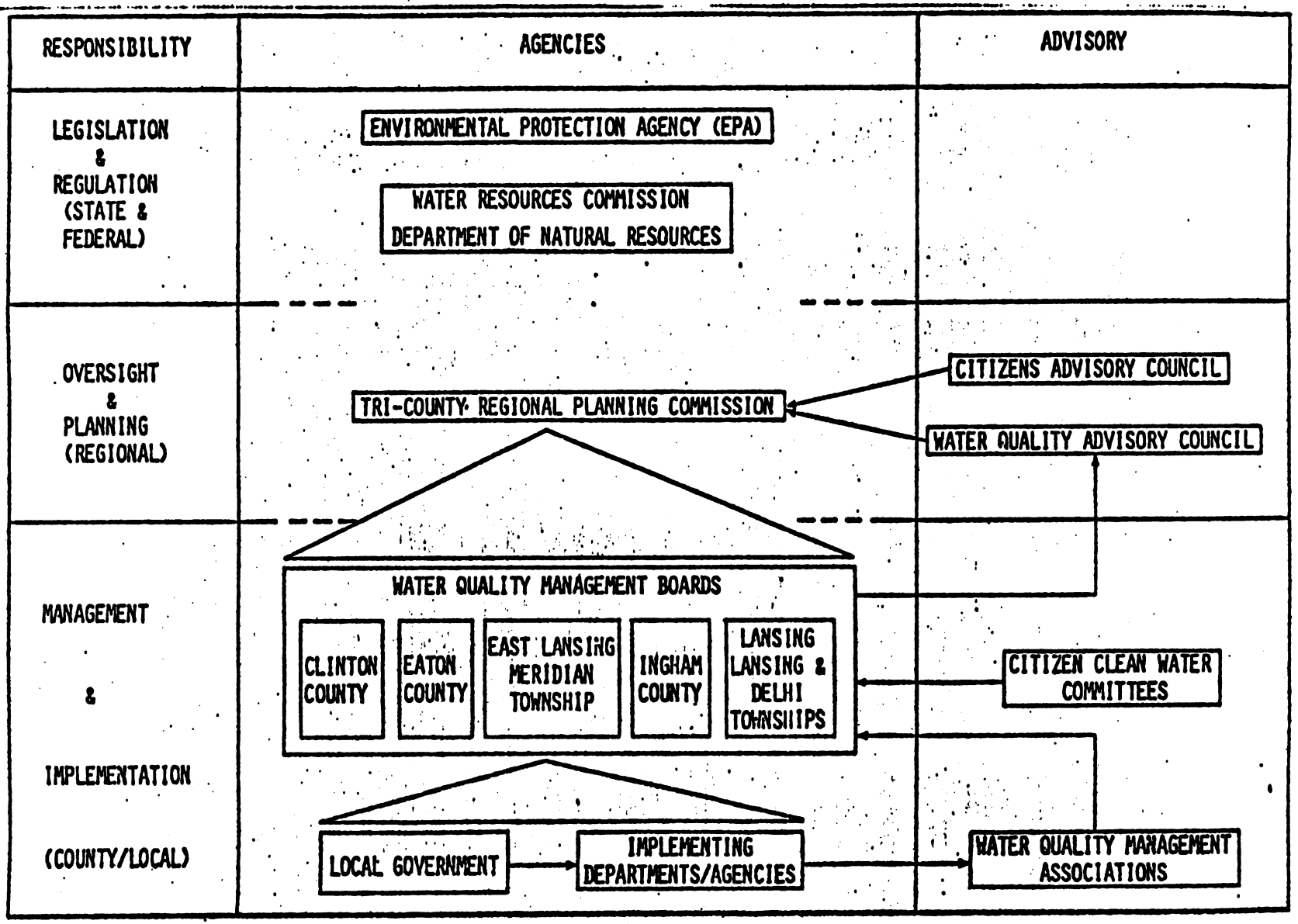

Figure #7

conditions within the region, (3) mediation of regional differences, (4) the reporting of water quality violations and (5) the establishing of area-wide priorities and standards. There are two advisory councils to the TCRPC: the Citizens Advisory Council (CAC) and the Water Quality Advisory Council (WQAC). The CAC is composed of any interested citizens and one member each of the Citizen Clean Water Committees (CCWC), yet another body with advisory responsibilities. The CAC's sole responsibility is to advise the TCRPC on regional water quality issues.

Management and implementation are the designated functions of the county/local agencies. The recommended management structure assigns these responsibilities to the Water Quality Management Boards (WQMB). It is recommended that each of the following governmental units, by resolution, constitute themselves as the WQMB for their respective counties, cities/townships: the Clinton County Board of Commissioners; the Eaton County Board of Commissioners; the Ingham County Board of Commissioners; the Lansing City Council, Delhi Township Board and Lansing Township Board; and the East Lansing City Council and Meridian Township Board. The WQMB, as the designated management agency, is empowered to receive grants, allocate funds, set local priorities and ensure implementation. Local governmental bodies and implementing departments and agencies share the management and implementation responsibilities with the WQMB's. There are also two advisory bodies which report to the management/implementation units: the Water Quality Management Associations (WQMA) and the Citizens Clean Water Committees (CCWC). The WQMA is composed of technicians and representatives from units of government and management agencies signing the "Resolution of Support." These units are charged with the provision of technical assistance and advice to the WQMBs and with the discussion of mutual problems. The CWCC is composed of any interested citizen living in the jurisdiction that the CCWC advises.

It is relatively obvious from the above discussion that public participation has been incorporated within the structure of the program. The TCRPC should be commended for its recognition of the importance of public participation in the planning process and for

its actions concerning it. Public participation is really a key element is the marketing of a water quality program for not only does it affect the Product, but it impacts upon Place and in a sense, Promotion as well. Public Participation, carried to its extreme involvement, can be viewed as the epitome of decentralized goverment. Public participation is most effective usually at the local level of government and as we see from Figure #7, the primary thrust of citizen participation occurs at the management/implementation level of the TCRPC plan. Another important element of Place occurs at the general oversight and planning level of the program. Water quality issues, by nature, transcend local boundaries. It is thus appropriate that such responsibilities be assigned to a regional agency whose authority corresponds more closely to the far-reaching effects of the issues than does that of any local agency.

Perhaps the public participation element is also the key component in the Promotion of the TCRPC plan. While certain kinds of advertising techniques, such as information pamphlets and general media coverage are important to the dissenmination of information concerning the plan and the 208 Water Quality program in general, there is no substitution for the promotional effects resulting from the tete-a-tete interaction of both the planning agency/private citizen and the involved citizen/uninvolved citizen scenarios of confrontation.

The final element of the marketing mix which needs to be discussed in terms of the TCRPC plan and the cultural, social and economic environments is Price. From a purely economic argument, the total cost to implement the TCRPC plan over the next twenty years was estimated to be approximately $89,574,000.[27]

> Added to this figure is $190,730,100 which will be needed to implement the 201 facilities plans now proposed for the various local units of government. This sums up to a Grand Total of $280,304,100. These costs are in terms of present worth dollars and include consideration of capitol investment costs, annual operation and maintenance expenditures, and initial sampling and monitoring needs. Of course, the 201 implementation can be supplemented by as much as 80% federal and state contributions while the 208 plan may be entirely local expenditure. 28

It is unfortunate that as the plan was written, the local governments and citizens within the region will be asked to pay the price of the pollution abatement effort. These units, however, do not have the ability to bear this enormous burden alone. "Additionally, since water quality improvements introduced in this region will provide benefits to many downstream Michigan counties and several Great Lakes border states, it is only fair that state and federal governments continue to assist funding water pollution projects but also make eligible additional items for this assistance."[29] Local government and individual citizen costs will be considerable.

> With the exception of Eagle and Dansville which must put in entirely new sewer systems, depending on the improvements needed in each community, sewer rates in the region will increase from $0.10 to $0.60/ thousand gallons with the implementation of the recommended draft plan. An increase from 0.5 to 9 mills in tax rates can be expected. Per capita debt will increase from $2.00 to $194.00 for the 20 year planning period. The increase in per capita debt must be analyzed in conjunction with the existing per capita debt and increases in per capita debt due to the 201 plans. 30

Without question, the economic burden of the local governments and the citizens which reside within their jurisdictions will be considerable. There is, however, one very important question which still needs to be answered: "can we afford <u>not</u> to take the necessary steps to clean up the water?"[31] The answer, according to this author, must be an unequivocal NO. The approval of the plan, its implementation and the ultimate achievement of the EPA established water quality standards will prove to be very beneficial to the region and its residents in the future.

> First of all, upon approval and certification, it will satisfy requirements of PL 92-500 and the grant agreement with the Environmental Protection Agency that an areawide waste treatment management plan be prepared for the Tri-County area. This will assure local governments that the Regional Administrator for EPA Region V will not hold up issuance of construction grants or new NPDES permits for discharges in this region. This will allow continued growth to occur in the area.
>
> Secondly, the plan provides local governments with another tool to use in their own efforts to pro-

mote sound land use growth in that water quality considerations must be part of land use and zoning control efforts.

Third, by successfully completing the plan and getting it approved, local governments can be assured that the State of Michigan will not prepare the plan for this region.

(And finally) . . . . and very importantly in this mid-Michigan area, the plan outlines a method by which the region's waters can be made safe for fishing and swimming thus bringing tremendous additional local recreational potential to the area. It would be impossible to measure in dollars the energy savings, commercial benefits and aesthetic improvements the region will derive from these efforts. 32

CHAPTER 3

THE RESOURCES AND OBJECTIVES OF THE FIRM

The resources and objectives of the firm/agency are also very important considerations for the planner and/or marketing manager. The effective management unit must recognize which of its many resources can most effectively be utilized when it is developing a program of action. Given the unit's own history, experiences and personnel, it should have strengths and weaknesses which distinguish it from other units. A good marketing strategy for such a unit would seek a differential advantage, making extensive use of the unit's strong points, while avoiding direct competition with units having similar strengths. Among the resources available to such a unit are its financial strength, raw material reserves, physical plant, patents, public acceptance, personnel and management attitudes. These resources can only be brought-to-bear upon a given issue, however, if the resolution of that issue is consistent with the objectives of the unit. The establishment of objectives that can effectively guide the present and future development of the unit is a difficult, but extremely important "procedure that forces top management to look at the entire business, relate its present needs and resources to the external environment, and then plot the broad outlines of the . . . (unit's) . . . future course."[33] There are three primary objectives for any management unit that will provide it with the guidelines for successfully conducting its business.

1. Engage in some specific business activity that will perform a socially and economically useful function.

2. Develop an organization to perpetuate the enterprise and implement its strategies.

3. Achieve sufficient profitability (how ever that is defined) to survive.

I. The Objectives of the Firm

The Tri-County Regional Planning Commission was instituted several years ago to provide local planning assistance to sub-regional governmental units throughout the region, to coordinate planning activities of regional concern within the region and to act as the designated areawide A-95 review clearinghouse. To these ends, the TCRPC has prepared several reports, conducted numerous studies and developed the methodologies to project socio-economic and land use patterns for the future in order to demonstrate how much growth may occur and its likely location if current development trends continue. These projections will be used to determine the future facility and service requirements of land use patterns which may occur given existing local governmental attitudes and powers and trends in the private sector.

Within the purview of the TCRPC is the abatement of water pollution problems within the region. The TCRPC has accepted the responsibility, in undertaking the 208 program, of fulfilling the water quality standards set for the region by the EPA and the DNR. As previously noted, the designated uses of the region's major surface water bodies for which water quality standards have been adopted include:

1. Recreational uses to include total body contact sports;

2. Fish, wildlife and other aquatic life to include all intolerant warm water species of fish; and,

3. Agricultural and commercial uses.

To achieve the water quality standards set for the above uses, the TCRPC, based upon its selection as the region's designated 208 agency

by Governor Milliken in July of 1975, and according to the contract agreement with the EPA, prepared an area-wide waste treatment management plan.

> The purpose of this plan is to develop management and technical alternatives which can be implemented to achieve improvements in the region's surface water quality consistent with Section 101(a)(2) of PL 92-500 which states that "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983." 34

II. The Resources of the Firm

Without question, the TCRPS's most valuable resources are its own personnel and the attitude of the management toward the abatement of water quality problems in the region. The agency also has relatively good public acceptance throughout its jurisdiction, though member minor civil divisions have been known to squabble considerably over financial arrangements and the structure of the agency. This combination of elements has helped to facilitate the development of the area-wide wastewater treatment plan. Certainly in the preparation of the TCRPC plan, the TCRPC staff was constrained both by the nature of the physical environment and the technical environment applicable in the Tri-County region.

Perhaps one of the strongest points in the development of the TCRPC plan was the agency's marshalling of its resources to first collect the appropriate data, then to analyze it and then to finally integrate the results into a comprehensive plan. Due to the mammoth volume of data that was required to complete the plan, this effort proved to be considerable. TCRPC officials reported that a . . .

> major portion of the two year program was spent collecting and analyzing data for the development of alternative technical and management plans. Existing resources were utilized where possible for all types of collected data. An extensive sampling program involving over 5,000 separate analyses was conducted during the summers of 1976 and 1977 to augment water quality data. As part of the data collection for potential management

agencies, elected and appointed officials were interviewed extensively.

Data collection for the 208 plan was carefully coordinated with the wastewater treatment plant facility plans being prepared by individual communities under Section 201 of PL 92-500. Information obtained from the 201 plans, as reviewed by the 208 staff, served as an important data base for 208 planning. 35

In addition, where the appropriate data did not exist, the TCRPC either retained a consultant or did the work in-house to research the required element and report on its findings. Several such reports were compiled during the two year work program both by the TCRPC staff and the several consultants retained. Among the reports that aided in the analysis of the water pollution problems in the region are the following:

* 1972 Land Cover/Use Inventory of Clinton, Eaton and Ingham Counties, Michigan, April, 1976 -- prepared by the Michigan State University Remote Sensing Project;

* Interim Outputs, August, 1976 -- prepared by the TCRPC staff;

* Statewide Legal Analysis, October, 1976 -- prepared by the law offices of Miller, Canfield, Paddock and Stone;

* Point Source Discharges, January, 1977 -- prepared by the TCRPC staff in conjunction with the Snell Environmental Group;

* Urban Stormwater Pollution -- Control and Reduction Alternatives, February, 1977 -- prepared by the TCRPC staff;

* The Selection and Implementation of Best Management Practices for Agricultural Pollution Abatement, Feburary, 1977 -- prepared by the TCRPC staff;

* Institutional and Financial Framework, March, 1977 -- prepared by the TCRPC staff;

* Characterization of Stormwater Runoff, March, 1977 -- prepared by the TCRPC staff;

* Management Agency Evaluation and Selection, April, 1977 -- prepared by Wilbur Smith and Associates;

* Overland and Subsurface Runoff from Solid Waste Disposal Sites, May, 1977 -- prepared by the TCRPC staff in conjunction with the Snell Environmental Group;

* A Limnological Study of Selected Lakes in the Tri-County Region, May, 1977 -- prepared by the firm of Johnson and Young;

* Groundwater Investigation, July, 1977 -- prepared by the Snell Environmental Group;

* Wastewater Sludge Disposal, July, 1977 -- prepared by the Snell Environmental Group; and the

* Environmental Baseline Study, July, 1977 -- prepared by the TCRPC staff. 36

Prior to the completion of most of these studies, the TCRPC staff began to formulate a range of alternative management systems based upon a series of scenarios which were developed to "depict a range of hypothetical management systems 'packages' formulated to accomplish those technical plans."[37] Based upon the evaluation of these alternative management systems -- according to a pre-determined evaluation process -- a hybrid alternative was developed. This alternative was composed of elements of three of the six original alternatives.

The organizational structure of the recommended management system was discussed in the previous chapter. A more detailed description of the functions and of the agencies responsible for their performance is now offered in Figure #8. There are four primary components of the recommended management system:

1. Management -- policy decisions, regulatory programs, contract administration, etc.;

2. Planning -- preparation, monitoring, upgrading, etc.;

3. Operations -- staffing, training, operations and maintenance, etc.; and,

4. Finance -- funding, financial planning, expenditure and revenue analysis.

Each of these components, and the several functions relating thereto, are represented in the recommended management system.

Though the development of such a management system was a

Figure #7 [38]

PREFERRED MANAGEMENT SYSTEM

Functions	Agency(ies)	Option
PLANNING		
Continuing Areawide Planning	TCRPC	County Planning/ City Planning
Facilities Planning	BPW/PSD	
Construction Priorities (20-year)	DNR	BPW/PSD
Regional Planning	TCRPC	County Planning/ City Planning
Fiscal Planning	BPW/PSD	TCRPC or DNR
A-95 Review	TCRPC	
AREAWIDE OVERSIGHT AND COORDINATION		
Monitor Plan Progress	TCRPC	DNR
Resolution of Conflict	TCRPC/WQAC	TCRPC/WQMB
Policy Guidance/Plan interpretation	TCRPC	DNR
Plan Enforcement	DNR	
Sampling and Monitoring	TCRPC	TCRPC/BPH
TREATMENT WORKS PROVISION		
Construct/Operate Treatment Plants	BPW/PSD/DPW	DC
Construct/Operate Collection Systems	BPW/PSD/DPW	DC
Construct/Operate Stormwater System	BPW/PSD/DC	BPW/PSD/Drain District
Construct/Operate Solid Waste System	BPW/DPW	
REGULATORY ADMINISTRATION		
Land Use/Development Controls (Ref: Water Quality)	TCRPC	County Planning/ City Planning
Zoning/Subdivision Approval	Board of County Commissioners/ City Council	
Construction Practices	BPW/PSD/DPW/DC	
Agricultural Practices	SCD/CES	
Solid Waste Disposal Practices	DNR	BPW/PSD/DPW
Soil Erosion/Sedimentation Control	PSD/SEO/DC	DNR
Point Source Permits	DNR	
Septic Tank Permits	BPH	
Promulgate Water Quality Standards	WRC	Governing Bodies
FINANCIAL ADMINISTRATION		
Accept/Disburse Grants	WQMB	DNR
Policies/Cost Allocation	WQMB	DNR/BPW/PSD/DPW
Debt Incurrence	County/City/Township	
Revenue Levy and Collection	BPW/PSD/DPW/DC	
PERSONNEL ADMINISTRATION		
Staffing	BPW/PSD/DPW/SCD/BPH	
Training	DNR/PSD/DPW/BPW/SCD/BPH	TCRPC
Supervision	WQMB	DNR

Note: BPH - Board of Public Health
BPW - Board of Public Works
CES - Cooperative Extension Service
DNR - Department of Natural Resources
WRC - Water Resources Commission
WQAC - Water Quality Advisory Council
DC - Drain Commissioner
PSD - Public Service Department
SCD - Soil Conservation District
TCRPC - Tri-County Regional Planning Commission
WQMB - Water Quality Management Board
DPW - Department of Public Works
SEO - Soil Erosion Officer

major objective of the many studies undertaken, an equally important objective was the documentation of water quality conditions in the region and the development of a recommended package of technical alternatives. Due to the nature of this essay, a detailed documentation of the water quality conditions in the region will not be presented. However, a summary of those conditions will now be given as background information. The substance of the findings suggests that the Tri-County region has "significant water quality problems which, at times, grossly violate state water quality standards and regional water quality planning guidelines."[39] Table #4 presents a comparison of pollutants and sources which were found to exist in the Tri-County region. The reader will note that the primary water quality problems cited relate to levels of dissolved oxygen, phosphorus, nitrogen and ammonia, suspended solids, fecal coliform bacteria and chloramines. Furthermore we can see that no less than 52% of any of the four major pollutants are generated from drainage sources. This fact implies that the emphasis for future water pollution control activities should be directed toward these runoff related sources -- that is, combined sewer overflows and non-point sources.

Based upon these findings, several technical solutions were recommended that would help to abate the water quality problems cited; these are detailed below:

* Improved street sweeping programs utilizing vacuum street sweepers and improved catch basin cleaning and litter control programs;

* Additional controls on the combined sewer overflow (CSO) plans envisioned by the cities of East Lansing and Lansing consisting of aeration and chemical addition equipment;

* Prior to full scale construction of the Lansing CSO control project, a detailed computer model and sampling program should be prepared to analyze impacts of all runoff sources on the rivers . . . . if conditions prove to be as bad as projected, then the following additional stormwater treatment facilities will also be required:

    1. Storm sewer runoff control using swirl concentrators on the portion of the Grand

Table #4 [40]

COMPARISON OF POLLUTANTS AND SOURCES

Source	Biochemical Oxygen Demand	Total Kjeldahl Nitrogen	Suspended Solids	Total Phosphorus
Municipal Point Sources	17	32	9	38
Industrial & Private Point Sources	1	1	3	10
Combined Sewer Overflows	34	31	25	34
Non-Point Sources	47	37	63	18

River located in northwest Lansing;

2. Storm sewer runoff control using flotation treatment on the portion of the Grand River located in central Lansing and on the portion of the Red Cedar River located in the eastern portion of Lansing; and,

3. Storm sewer runoff control by retention basins and treatment on the portion of the Grand River located in southwestern Lansing;

* Strict land use control on new development to adhere to sound water quality management principles;

* Implementation of best management practices for agriculture;

* Control of livestock feeding operations to include the removal of livestock feeding in rivers, streams and county drains;

* Implementation of a private sewage disposal maintenance system to reduce failures and to develop on-site alternatives to long extensions of sanitary sewer systems;

* Development of programs to reduce runoff of fertilizers from urban areas;

* A substantial ongoing sampling, monitoring and water quality modelling program for the region to further verify certain conclusions, investigate additional problems and most importantly to guage improvements in the streams from the implementation of the plan;

* Preparation of a detailed plan for urban area wastewater sludge disposal to further verify the conclusion that the existing method is the most expensive and to explore specific alternatives . . . . construction of new incinerator facilities should be postponed until the investigation is complete;

* Improved enforcement of the Soil Erosion and Sedimentation Control Act 347 at all levels of government;

* The cleaning of refuse dumped along rivers and creeks;

* Implementation of local 201 facilities plans;

* Compliance by all municipal, industrial and private

sources with federal discharge permit final limitations;

* Implementation of proposed retention basins on the Remey Chandler Drain improvements and Pawlowski Creek;

* Hydraulic modifications of the gravel pit at the lower end of the Remey Chandler Drain if a detailed sampling program verifies the need;

* Construction of sediment basins on Mud Lake Outlet Drain and an unnamed drain in south Lansing tributary to Sycamore Creek; and lastly,

* Proper cover and disposal practices should be implemented at all landfills in the region . . . . Borings should be made of the Aurelius Road landfill to determine its impact on groundwater quality under the Mason Esker. 41

Close examination of these technical alternatives reveals several interesting facts about the recommended 208 water quality management plan for the Tri-County region. Most notably, the Product, that is the plan itself, is based upon the demonstrated wants and needs of the public. The Price of the product has been kept at a minimum by the use of non-structural solutions. This is also consistent with the community's ability to assume the costs of the project. By imposing management and implementation responsibilities upon the local governmental units within the region, both the Place and Promotion components of the marketing mix are accounted for. The Place component naturally refers to the several levels of governmental involvement and responsibility comprising the management structure. Local involvement, in particular, is also helpful in the Promotion of the plan to the local communities. It is apparent that several considerations have been accounted for in the development of the TCRPC plan. Thus, the cultural, social and economic environments and the resources and objectives of the firm have been discussed to this point. The final two environments which will be discussed are the political and legal environments; these two delimiting factors will be addressed in the next chapter.

CHAPTER 4

THE POLITICAL AND LEGAL ENVIRONMENTS

In today's fast-paced society, the attitudes and reactions of the people, social critics and governments have become increasingly important to both the marketing manager and the urban planner. The political environment changes as rapidly as society does and must reflect the values, wants and desires of the community or region being represented. Depending upon the disposition of the politician, the political environment can either be a positive or negative variable. With respect to the 208 water quality program, the political environment has been particularly favorable. The federal and state governments have enacted special legislation to provide financial assistance and technical guidelines for the abatement of water quality problems on a regional scale. The recommended management structure of the TCRPC plan has already been discussed. Thus, the primary thrust of this chapter will be a discussion of the legal environment in terms of the federal 208 water quality legislation.

I. Federal Water Pollution Control Act (PL 92-500)[42]

In 1972 Congress enacted PL 92-500, the Federal Water Pollution Control Act. The purpose of the legislation is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (PL 92-500, Title I, Section 101(a)). Several goals and policies were specified:

1. It is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

2. It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

3. It is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;

4. It is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;

5. It is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State; and,

6. It is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans.

Thus, Congress set specific goals to be met by 1983 and 1985 and supported these goals with appropriate national policies and funding. In addition, Congress recognized the primary role of the states in pollution control and the importance of international cooperation in maintaining the quality of international waters. Public participation was required as detailed under Title I, Section 101(e). Congress also suggested that paperwork be minimized and that intergovernmental cooperation be maximized "so as to prevent needless duplication and unnecessary delays at all levels of government"(Title I, Section 101(f)). Congress further provided that the Administrator of the Environmental Protection Agency administer the law. The Administrator was charged with development of "comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters" (Title I, Section 201(a)).

The rules and regulations for funding of any water quality pollution control projects are contained in Title II, "Grants for Construction of Treatment Works." These provisions are of particular interest to local communities because they translate national goals and policies into activities for their achievement, including federal funding procedures.

Section 201 details the purposes of Title II. This section states that "it is the purpose of this title to require and to assist the development and implementation of waste treatment management

plans and practices which will achieve the goals of this Act" (Title II, Section 201(a)). To do this, "the best practicable waste treatment technology . . ." (Title II, Section 201(b)) should be applied prior to any discharge of materials into receiving waters. Section 201 also requires that "to the extent practicable, waste treatment management shall be on an areawide basis and provide control or treatment of all point and nonpoint sources of pollution". (Title II, Section 201(c)). Facilities built under this section should serve four functions:

1. The recycling of potential sewage pollutants through the production of agriculture, silviculture, or aquaculture products, or any combination thereof;

2. The confined and contained disposal of pollutants not recycled;

3. The reclamation of wastewater; and,

4. The ultimate disposal of sludge in a manner that will not result in environmental hazards.

(Title II, Section 101(d))

These facilities should be integrated to dispose of all types of wastes, including sewage and municipal and industrial wastes, and should produce sufficient revenues to cover the original capital and to pay for operating and maintenance costs. Congress also provided for aesthetic considerations in Section 101(f) of Title II. Section 201 also authorized the Administrator "to make grants to any State, municipality or intermunicipal or interstate agency for the construction of publicly-owned treatment works" (Title II, Section 201 (g)(1)) and set criteria for funding. These criteria include evaluation of "alternative waste management techniques . . . (to) . . . provide for the application of the best practicable waste treatment technology . . ." (Title II, Section 201(a)) necessary to achieve the objectives of the law.

Section 202 sets the federal share of funding. The federal portion is set at 75% of construction costs. Sections 203, 204, 205, 206 and 207 further detail conditions for funding, payments and the determination of individual state participation in the total federal program.

Section 208 is concerned with "Areawide Waste Treatment Management." This section details the procedures that must be carried out. Section 208 is reproduced in its entirety in Appendix A.

The following is a summary of the steps involved in the 208 Areawide Waste Treatment Management Process:

1. Publication of guidelines by the Administrator;
2. Identification of areas with water quality control problems by state governors;
3. Creation and implementation of continuing areawide waste treatment mangement planning processes;
4. Preparation of a plan;
5. Designation of waste treatment management agencies by the state governors;
6. Acceptance or denial of the designated waste treatment agencies by the Administrator;
7. Granting of funds to designated agencies for payment of the reasonable costs of developing and operating a continuing areawide waste treatment planning process;
8. Submission of proposals to the Administrator for approval; and,
9. Provision of technical assistance by the Administrator upon the request of the state governor or designated agency.

(Title II, Section 208)

As such, Section 208 details the procedures involved in areawide management of waste treatment.

Section 209 authorizes the preparation of "a Level B plan under the Water Resources Planning Act for all basins in the United States." Priority is given to those areas having water quality control problems, as designated by state governors (Title II, Section 209).

The Administrator is required to make an annual "survey to determine the efficiency of the operation and maintenance of treatment works constructed with grants made uner this Act, as compared to the efficiency planned at the time the grant was made. The results of the survey are to be included in a yearly report (Title II, Section 210).

The act limits funding for sewage collection systems to two situations:

1. When the funding is for replacement or major rehabilitation of an existing collection system and is necessary to the total integrity and performance of the waste treatment works servicing such community, or

2. When the funding is for a new collection system in an existing community with sufficient existing or planned capacity adequately to treat such collected sewage and is consistent with Section 201 of the act.

(Title II, Section 211)

Title III lists standards and enforcement procedures. This title requires the application of the best practicable technology to achieve the national goals specified in Section 201 of Title I of the act. This title authorizes the Administrator to specify effluent limitations and requires the review of these limitations every five years. Title III also details enforcement procedures.

II. State Enabling Legislation[43]

Although federal law mandates action by state and local governments, local activities cannot occur without appropriate state enabling legislation. The Detroit law firm of Miller, Canfield, Paddock and Stone prepared an analysis of enabling legislation in Michigan to determine whether existing law is sufficient to implement a 208 water quality management plan. The report dealt with both constitutional and non-constitutional sources of enabling authority.

These consultants identified several constitutional provisions which would permit the establishment of areawide management systems. Constitutional provisions, however, generally require legislation before the authority granted can be exercised. Thus, the legislature must enact appropriate laws based upon constitutional grants of authority and subject to constitutional constraints. The Michigan Constitution permits areawide management systems within the following frameworks:

1. Single governmental units acting within their own boundaries;

2. Single governmental units acting within and without their own boundaries and owning facitities without reference to geographic locations;

3. Governmental units entering into joint operating arrangements with Michigan municipalities or with political subdivisions of other states or Canada;

4. The creation of port districts;

5. The creation of new forms of government; and

6. The contractural marriage of diverse governmental units for the shared administration of management or the transfer of responsibility to an agency or agencies acting in behalf of the other contracting parties.

(Michigan Constitution, 1963)

The lawyers concluded that "the Michigan Constitution provides sufficient authority for the establishment of . . ." an areawide waste treatment management program (Legal Analysis).

The Michigan Legislature has enacted "a wealth of statutory material" with regard to the establishment of a regulatory program and the control of specific pollution sources. Miller, Canfield, Paddock, and Stone have identified over seventy laws applicable to one or more sections of the Water Pollution Control Act of 1972 (see Figure #9). The legal consultant concluded "that by and large the existing legislative pattern is sufficient to provide for the achievement of 1977, 1983 and 1985 goals, and to fashion a plan of areawide management generally consistent with the requirements of the Act and guidelines of Environmental Protection Agency. Moreover, should the statutory framework prove insufficient respecting an activity which presently or may in the future impair the environment, recourse may be had to the Thomas J. Anderson, Gordon Rockwell Environmental Protection Act of 1970, 1970 PA 127 (Legal Analysis). The latter piece of legislation gives a plaintiff standing to sue in cases involving environmental quality violations.

The legal consultants made several recommendations for the improvement of the legislative bases for action in Michigan. The

legal analysis recommended codification of applicable law and repeal of duplicated provisions. The legal report further noted the importance of cooperation among regulatory agencies and their willingness to enforce applicable regulations. This may involve "rule changes relating to regulatory proceedings of the state which impact the Section 208 plan in such administrative activities as granting of funds, permit certification, the licensing of plats, etc." The firm recommended several changes in existing legislation to improve regional management by assuring:

1. Mandatory participation by all governmental units within the designated area;

2. Management authority to prioritize sewer construction;

3. Management authority to promulgate minimum guidelines relative to the local enforcement of nonpoint source pollution control and effluent standards;

4. Management authority to enforce mandatory cost participation by constituent units and/or independent taxing ability to be exercised by the area manager for purposes of its own operational support.

(Legal Analysis)

The report notes that current legislation is sufficient as a basis for areawide control, but that the proposed changes provide greater mechanical proficiency. The consultants also recommended the enactment of regional zoning legislation.

The firm further recommended two constitutional amendments. The report suggested deletion of Article IV, Section 25 which prohibits amendment of statutes by implication. The state must now re-enact altered or amended sections of statutes. The legal analysis also recommended that Article VII, Section II concerning debt limits be revised. They suggested the following wording: "No county shall incur any indebtedness which shall increase its total debt beyond 10% of its assessed valuation, except indebtedness incurred for water supply, sewage, drainage, or refuse disposal projects necessary to protect the health by abating and controlling pollution." (Legal Analysis)

In summary, there is sufficient constitutional and statutory enabling legislation in Michigan "to establish a regulatory program

and to control specific pollution sources." A few revisions ti existing law, however, would clarify legislative authority to act.

Figure #9 [44]

Applicable Michigan Statutory Authority

1882 PA 23
1895 PA 3
1895 PA 215
1909 PA 278
1909 PA 279
1913 PA 98
1917 PA 167
1917 PA 298
1921 PA 207
1923 PA 116
1923 PA 118
1925 PA 81
1925 PA 234
1927 PA 261
1927 PA 320
1929 PA 245
1929 PA 312
1931 PA 285
1931 PA 316
1933 PA 94
1937 PA 297
1939 PA 273
1939 PA 342
1943 PA 129
1943 PA 184
1945 PA 281
1945 PA 282
1946 RS Ch 16
1947 PA 179
1947 PA 320
1947 PA 359
1949 PA 222
1951 PA 35
1951 PA 243
1951 PA 266
1954 PA 185
1954 PA 188
1955 PA 233
1956 PA 40
1956 PA 211
1957 PA 185
1957 PA 200
1957 PA 217
1959 PA 168
1963 PA 62
1963 PA 147
1964 PA 20
1964 PA 253
1965 PA 76
1965 PA 37
1965 PA 294
1965 PA 342
1966 PA 329
1966 PA 345
1967 PA 7
1967 PA 8
1967 PA 205
1967 PA 288
1968 PA 76
1968 PA 314
1969 PA 136
1969 PA 144
1969 PA 159
1969 PA 315
1970 PA 92
1970 PA 127
1970 PA 231
1971 PA 226
1972 PA 230
1972 PA 288
1972 PA 346
1972 PA 347
1974 PA 116

SUMMARY

With the conclusion of the discussion on the political and legal environments, so too end my remarks on the subject of TOWARD THE UNDERSTANDING OF MARKETING A WATER QUALITY MANAGEMENT PROGRAM. The objective of this essay, once again, was to provide the professional planner and the planning practitioner (the municipal planning official) with a different perspective in regards to the design and ultimate implementation of not only the water quality management program, as detailed in this paper, but other types of planning programs as well. A basic framework was presented for the development of such a program. This framework consisted of two components: the first, the controllable variables, which are also known as the marketing mix or the 4 P's -- Product, Place, Promotion and Price; and the second, the uncontrollable variables -- the cultural, social and economic environments, the resources and objectives of the firm, the political and legal environments and the existing competitive business situation. All of these variables were discussed in terms of their relationship with the TCRPC 208 Water Quality Management Program, except for the existing competitive business situation, which was not applicable in this case. Some of these discussions were very thorough in their examination of the subject matter, while others, primarily due to their technical nature, were not, regretably, examined as thoroughly.

The most important contribution of this marketing framework, however, is that the primary concern of any marketing or planning program must be the fulfillment of the demonstrated wants and needs of the people affected. (The success, to date, of the TCRPC 208 plan is testimony to that very fact.) But as stated earlier, in order for these programs to be effective, they must be implemented. And in order to implement such programs, there must be a commitment -- a commitment to affect change -- a change for the better. Man needs to continually seek to better himself and to improve the environment in which he and his family lives, works and plays in order to perpetuate

his existence. Without such change, there can be no hope for the future, and without hope, there can be no future. Man must continue to reach for that "pot of gold at the end of the rainbow" even though it will always continue to be just beyond his reach. But he must continue to extend his reach just the same in hope that some day, perhaps just some day, there will be a better tomorrow.

APPENDIX A

"AREAWIDE WASTE TREATMENT MANAGEMENT

"SEC. 208. (a) For the purpose of encouraging and facilitating the development and implementation of areawide waste treatment management plans—

"(1) The Administrator, within ninety days after the date of enactment of this Act and after consultation with appropriate Federal, State, and local authorities, shall by regulation publish guidelines for the identification of those areas which, as a result of urban-industrial concentrations or other factors, have substantial water quality control problems.

"(2) The Governor of each State, within sixty days after publication of the guidelines issued pursuant to paragraph (1) of this subsection, shall identify each area within the State which, as a result of urban-industrial concentrations or other factors, has substantial water quality control problems. Not later than one hundred and twenty days following such identification and after consultation with appropriate elected and other officials of local governments having jurisdiction in such areas, the Governor shall designate (A) the boundaries of each such area, and (B) a single representative organization, including elected officials from local governments or their designees, capable of developing effective areawide waste treatment management plans for such area. The Governor may in the same manner at any later time identify any additional area (or modify an existing area) for which he determines areawide waste treatment management to be appropriate, designate the boundaries of such area, and designate an organization capable of developing effective areawide waste treatment management plans for such area.

"(3) With respect to any area which, pursuant to the guidelines published under paragraph (1) of this subsection, is located in two or more States, the Governors of the respective States shall consult and cooperate in carrying out the provisions of paragraph (2), with a view toward designating the boundaries of the interstate area having common water quality control problems and for which areawide waste treatment management plans would be most effective, and toward designating, within one hundred and eighty days after publication of guidelines issued pursuant to paragraph (1) of this subsection, of a single representative organization capable of developing effective areawide waste treatment management plans for such area.

"(4) If a Governor does not act, either by designating or determining not to make a designation under paragraph (2) of this subsection, within the time required by such paragraph, or if, in the case of an interstate area, the Governors of the States involved do not designate a planning organization within the time required by paragraph (3) of this subsection, the chief elected officials of local governments within an area may by agreement designate (A) the boundaries for such an area, and (B) a single representative organization including elected officials from such local governments, or their designees, capable of developing an areawide waste treatment management plan for such area.

"(5) Existing regional agencies may be designated under paragraphs (2), (3), and (4) of this subsection.

"(6) The State shall act as a planning agency for all portions of such State which are not designated under paragraphs (2), (3), or (4) of this subsection.

"(7) Designations under this subsection shall be subject to the approval of the Administrator.

"(b) (1) Not later than one year after the date of designation of any organization under subsection (a) of this section such organization shall have in operation a continuing areawide waste treatment management planning process consistent with section 201 of this Act. Plans prepared in accordance with this process shall contain alternatives for waste, treatment management, and be applicable to all wastes generated within the area involved. The initial plan prepared in accordance with such process shall be certified by the Governor and submitted to the Administrator not later than two years after the planning process is in operation.

"(2) Any plan prepared under such process shall include, but not be limited to—

"(A) the identification of treatment works necessary to meet the anticipated municipal and industrial waste treatment needs of the area over a twenty-year period, annually updated (including an anlysis of alternative waste treatment systems), including any requirements for the acquisition of land for treatment purposes; the necessary waste water collection and urban storm water runoff systems; and a program to provide the necessary financial arrangements for the development of such treatment works;

"(B) the establishment of construction priorities for such treatment works and time schedules for the initiation and completion of all treatment works;

"(C) the establishment of a regulatory program to—

"(i) implement the waste treatment management requirements of section 201(c),

"(ii) regulate the location, modification, and construction of any facilities within such area which may result in any discharge in such area, and

"(iii) assure that any industrial or commercial waste discharged into any treatment works in such area meet applicable pretreatment requirements;

"(D) the identification of those agencies necessary to construct, operate, and maintain all facilities required by the plan and otherwise to carry out the plan;

"(E) the identification of the measures necessary to carry out the plan (including financing), the period of time necessary to carry out the plan, the costs of carrying out the plan within such time, and the economic, social, and environmental impact of carrying out the plan within such time;

"(F) a process to (i) identify, if appropriate, agriculturally and silviculturally related nonpoint sources of pollution, including runoff from manure disposal areas, and from land used for livestock and crop production, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

"(G) a process to (i) identify, if appropriate, mine-related sources of pollution including new, current, and abandoned surface and underground mine runoff, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

"(H) a process to (i) identify construction activity related sources of pollution, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

"(I) a process to (i) identify, if appropriate, salt water intrusion into rivers, lakes, and estuaries resulting from reduction of fresh water flow from any cause, including irrigation, obstruction, ground water extraction, and diversion, and (ii) set forth procedures and methods to control such intrusion to the extent feasible where such procedures and methods are otherwise a part of the waste treatment management plan;

"(J) a process to control the disposition of all residual waste generated in such area which could affect water quality; and

"(K) a process to control the disposal of pollutants on land or in subsurface excavations within such area to protect ground and surface water quality.

"(3) Areawide waste treatment management plans shall be certified annually by the Governor or his designee (or Governors or their designees, where more than one State is involved) as being consistent with applicable basin plans and such areawide waste treatment management plans shall be submitted to the Administrator for his approval.

"(4) Whenever the Governor of any State determines (and notifies the Administrator) that consistency with a statewide regulatory program under section 303 so requires, the requirements of clauses (F) through (K) of paragraph (2) of this subsection shall be developed and submitted by the Governor to the Administrator for application to all regions within such State.

"(c) (1) The Governor of each State, in consultation with the planning agency designated under subsection (a) of this section, at the time a plan is submitted to the Administrator, shall designate one or more waste treatment management agencies (which may be an existing or newly created local, regional, or State agency or political subdivision) for each area designated under subsection (a) of this section and submit such designations to the Administrator.

"(2) The Administrator shall accept any such designation, unless, within 120 days of such designation, he finds that the designated management agency (or agencies) does not have adequate authority—

"(A) to carry out appropriate portions of an areawide waste treatment management plan developed under subsection (b) of this section;

"(B) to manage effectively waste treatment works and related facilities serving such area in conformance with any plan required by subsection (b) of this section;

"(C) directly or by contract, to design and construct new works, and to operate and maintain new and existing works as required by any plan developed pursuant to subsection (b) of this section;

"(D) to accept and utilize grants, or other funds from any source, for waste treatment management purposes;

"(E) to raise revenues, including the assessment of waste treatment charges;

"(F) to incur short- and long-term indebtedness;

"(G) to assure in implementation of an areawide waste treatment management plan that each participating community pays its proportionate share of treatment costs;

"(H) to refuse to receive any wastes from any municipality or subdivision thereof, which does not comply with any provisions of an approved plan under this section applicable to such area; and

"(I) to accept for treatment industrial wastes.

"(d) After a waste treatment management agency having the authority required by subsection (c) has been designated under such subsection for an area and a plan for such area has been approved under subsection (b) of this section, the Administrator shall not make any grant for construction of a publicly owned treatment works under section 201(g) (1) within such area except to such designated agency and for works in conformity with such plan.

"(e) No permit under section 402 of this Act shall be issued for any point source which is in conflict with a plan approved pursuant to subsection (b) of this section.

"(f) (1) The Administrator shall make grants to any agency designated under subsection (a) of this section for payment of the reasonable costs of developing and operating a continuing areawide

waste treatment management planning process under subsection (b) of this section.

"(2) The amount granted to any agency under paragraph (1) of this subsection shall be 100 per centum of the costs of developing and operating a continuing areawide waste treatment management planning process under subsection (b) of this section for each of the fiscal years ending on June 30, 1973, June 30, 1974, and June 30, 1975, and shall not exceed 75 per centum of such costs in each succeeding fiscal year.

"(3) Each applicant for a grant under this subsection shall submit to the Administrator for his approval each proposal for which a grant is applied for under this subsection. The Administrator shall act upon such proposal as soon as practicable after it has been submitted, and his approval of that proposal shall be deemed a contractual obligation of the United States for the payment of its contribution to such proposal. There is authorized to be appropriated to carry out this subsection not to exceed $50,000,000 for the fiscal year ending June 30, 1973, not to exceed $100,000,000 for the fiscal year ending June 30, 1974, and not to exceed $150,000,000 for the fiscal year ending June 30, 1975.

"(g) The Administrator is authorized, upon request of the Governor or the designated planning agency, and without reimbursement, to consult with, and provide technical assistance to, any agency designated under subsection (a) of this section in the development of areawide waste treatment management plans under subsection (b) of this section.

"(h) (1) The Secretary of the Army, acting through the Chief of Engineers, in cooperation with the Administrator is authorized and directed, upon request of the Governor or the designated planning organization, to consult with, and provide technical assistance to, any agency designed under subsection (a) of this section in developing and operating a continuing areawide waste treatment management planning process under subsection (b) of this section.

"(2) There is authorized to be appropriated to the Secretary of the Army, to carry out this subsection, not to exceed $50,000,000 per fiscal year for the fiscal years ending June 30, 1973, and June 30, 1974.

(PL 92-500, Title II, Section 208)

FOOTNOTES

1. Tri-County Regional Planning Commission (TCRPC), Tri-County Region 208 Water Quality Management Plan (WQMP), p.1-2.
2. TCRPC, Projected Development Patterns Year 2000, p.32.
3. Spariosu, G. and P. Gorte, Areawide Waste Treatment -- Management and Planning; Watertown Charter Township; Clinton County, Michigan, p.15.
4. Ibid., pp.15-17.
5. TCRPC, Tri-County Region 208 Water Quality Management Plan; Volume II, Part 2: Water Quality Problems, Projections & Sources, p.2-150a.
6. Ibid., p.2-152.
7. Ibid., p.2-153.
8. Ibid., p.2-154.
9. Spariosu, et al, op.cit., pp.17-18.
10. Ibid., pp.18-19.
11. MSU/NASA Remote Sensing Project (RSP), 1972 Land Cover/Use Inventory of Clinton, Eaton and Ingham Counties, Michigan, p.11.
12. TCRPC, 208 WQMP Vol.II, op.cit., p.2-127.
13. Ibid.
14. Ibid., p.2-128.
15. Ibid.
16. RSP, op.cit., Appendix B-1.
17. Ibid.
18. McCarthy, J.E., Basic Marketing, p.89.
19. Ibid., p.90.
20. U.S. Bureau of the Census, Census of Population: 1970; General Social and Economic Characteristics, pp.24-237 -- 24-245.
21. Ibid.
22. McCarthy, op.cit., p.98.
23. TCRPC, 208 WQMP, op.cit., p.1-3.
24. Ibid.
25. Ibid., p.1-20.
26. Ibid., p.1-24.
27. Ibid., p.xiv.
28. Ibid., pp.xiv-xv.
29. Ibid., p.xv.
30. Ibid., pp.xv-xvi.
31. Ibid., p.xv.
32. Ibid., pp.xvi-xvii.
33. McCarthy, op.cit., p.101.
34. TCRPC, 208 WQMP, op.cit., p.iii.
35. Ibid., p.1-4.
36. Ibid., pp.1-6 -- 1-9.
37. Ibid., p.3-12.
38. Ibid., p.3-27.
39. Ibid., p.vi.
40. Ibid.
41. Ibid., pp.vii-ix.

42. Spariosu, et al, op.cit., pp.3-9.
43. Ibid.
44. Ibid., p.8.

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