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ABSTRACT

The Planner's Manual is one of a set of twenty-one manuals used in METRO-APEX 1974, a computerized college and professional level, computer-supported, role-play, simulation exercise of a community with "normal" problems. Stress is placed on environmental quality considerations. APEX 1974 is an expansion of APEX--Air Pollution Exercise (ED 064 530-550; ED 075 261; ED 081 619), and includes roles for an environmental quality agency, water quality manager, solid waste manager, and various pressure groups, in addition to the previously developed roles of city and county politicians, city and county planners, air pollution control office, developers, industrialists and newspaper. Two industries have been added, as have a number of program options. The participants may range in number from 17 to 100. Each run of the game should consists of at least three cycles (simulated years), the optimum being five cycles. Each cycle should span at least a three-hour period. A cycle is composed of two major phases: the first is the game simulation; in the second phase, decisions emerging out of the game simulation are analyzed by a computerized system of integrated simulation models. The METRO-APEX computer program is in Fortran IV and runs on an IBM 360-50 or higher series computer. (BT)

METRO APEX

volume 5.1

PLANNER'S MANUAL

revised 1974

METRO-APEX

1974

A Computerized Gaming Simulation Exercise
For Training in Environmental Management
and Urban Systems

Developed by the
COMEX Project
University of Southern California

through a grant form the
Control Programs Development Division
Environmental Protection Agency

A revised version of the APEX Air Pollution Exercise
developed jointly by the
COMEX Project, University of Southern California
and
Environmental Simulation Laboratory, University of Michigan
June 1974

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PREFACE

PREFACE

METRO-APEX is the result of a long term research and development effort by a number of dedicated individuals. The inspiration, and much of the technical basis evolved from a similar exercise (M.E.T.R.O.) originally developed by the Environmental Simulation Laboratory, University of Michigan. In 1966, a grant from the Division of Air Pollution Control, U.S. Public Health Service was awarded to the COMEX Research Project, University of Southern California, to develop a dynamic teaching instrument, METRO-APEX. Working in close cooperation, the COMEX Research Project and the Environmental Simulation Laboratory successfully developed the initial version of the METRO-APEX exercise in 1971. This computer-based gaming simulation was designed to provide a laboratory urban community in which air pollution management trainees could apply and test the knowledge and skills gained through conventional educational methods.

METRO-APEX has proven to be highly adaptable to training programs dealing with the many aspects of air pollution control including law, management, air quality monitoring, land use planning, budget preparation, citizen participation programs, state and federal grant procedures, and political decision-making processes. As a result, METRO-APEX is in great demand as a valuable supplement to university training programs, and in many cases is being used as a central curriculum focus. Over 60 universities have been trained in the use of METRO-APEX. It has also been translated into French and Spanish, and is being used in seven countries outside of the United States.

Based on the success of the initial METRO-APEX program, COMEX was awarded a grant from the Control Programs Development Division of the Environmental Protection Agency to substantially revise and broaden the simulation exercise to encompass the wide spectrum of environmental management issues. This current version, of which this manual is a part, was completed in June 1974 and greatly increases the utility and teaching potential of the exercise. In this version, the interrelationships among air, water and solid waste are demonstrated, the strategies and options available to players have been broadened, new roles have been added, the exercise materials have been updated to reflect the latest technology and nomenclature, and many of the operational problems associated with the earlier version have been rectified.

METRO-APEX is one of, if not the most complex gaming-simulations of an urban area in use today. Although it was designed to supplement standard teaching methods, APEX is far more than an educational tool. It is a communication channel of a new level--capable of providing both the language and the forum for information transfer between persons and groups with different educational and cultural backgrounds as well as different perspectives of the urban situation.

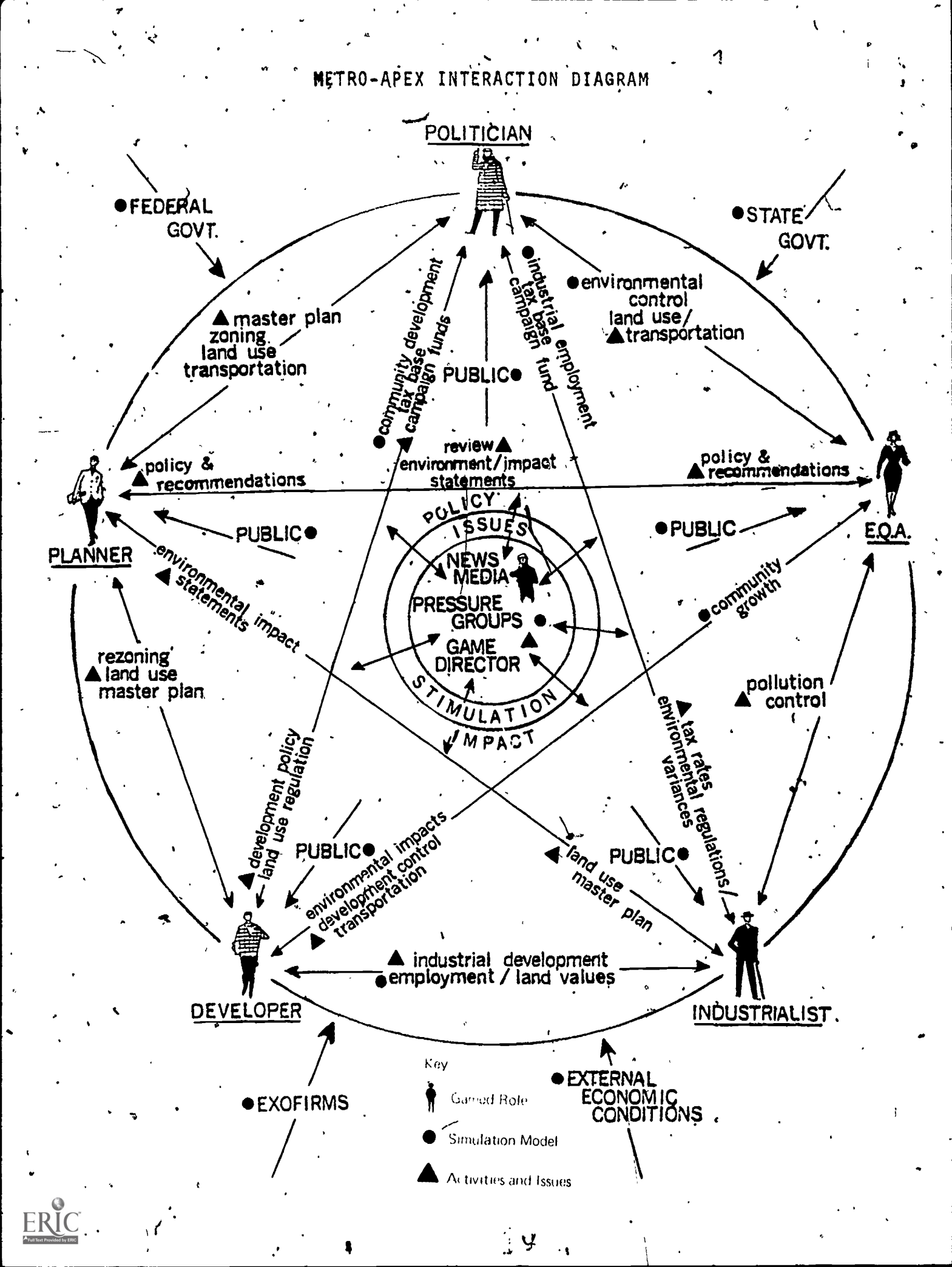
METRO-APEX is composed of two essential components: (1) a computerized system made up of a series of well-integrated simulation models linked to a (2) "gamed" environment encompassing a series of interactive roles. The computerized system predicts the changes that occur in several sectors of the urban system in response to the decisions made by participants in the "gamed" environment, decisions made by persons outside the "gamed" environment (other actors whose behavior is simulated in the computer), and external pressures on the metropolitan area (also simulated in the computer).

The County of APEX is run year by year by principle decision makers performing both the mundane and extraordinary functions of their office in the "gamed" environment. Each cycle or year is condensed in time to a three to eight hour session during which the decision makers formulate their yearly policy. The decisions that emerge out of the "competitive--cooperative" environment of the gaming-simulation are used as priming inputs to the computer simulation. The change in the status of the urban area is calculated by the computer and returned to the decision makers as the primary input to the next cycle of action. Included in the change picture generated by the computer are selected social, economic and physical indicators which show the magnitudes of change in key areas and a newspaper which serves as the focal point of local public opinion.

The key decision makers acting in the gamed environment include an Environmental Quality Agency with departments of Air Pollution, Water Pollution and Solid Wastes; Politicians, Planners and Administrative Officers from a Central City and a County; Land Developers and Industrialists from the private sector; and representatives from the News Media and Pressure Groups. The Politicians are responsible for the administration of their respective jurisdictions and for the formulation and implementation of various programs to upgrade the social status of their constituents. The Planners serve as aides to the Politicians and represent the major long range coordinating force in the community. The Environmental Control Officers are charged with the task of monitoring and alleviating the pollution problems. The private business sectors operate to foster their own interests and frequently those of the community. Pressure Groups and News Media advocate various positions on community issues. Generally, each decision maker finds it to his advantage to coordinate and/or compete with other players in his efforts to promote his strategies. The METRO-APEX General Interaction Diagram included here indicates possible linkages among the roles.

In general, people have great difficulty understanding the dynamics of a complex system through traditional means. Gaming-simulation offers participants the opportunity to study, work with, and discuss the structure of such a system and to experiment with intervention strategies designed to change that structure. When used as a teaching device, the strength of a gaming-simulation such as METRO-APEX lies in the opportunity afforded participants for involvement in the system. When compared with the passive observation of the system offered by traditional methods, this approach has had great success.

METRO-APEX INTERACTION DIAGRAM



CHAPTER 1

A Brief Description of APEX County

Chapter 1

A BRIEF DESCRIPTION OF APEX COUNTY

History

The first settlers of APEX County were farm families emigrating from New England and New York State beginning about 1830. During the middle of the nineteenth century, German immigrants continued the settlement patterns of established dispersed family farms. Income to pay for the necessary imports of products from the East was derived primarily from the production of farm crops and, more importantly, timber. Small market towns, often containing milling facilities, developed between 1820 and 1860. At the same time, the County was organized as a unit of government by the State, and the basic network of roads was completed.

The major impetus for the later development of the Central City as a regional center was its selection as the state capitol in 1847. The nation's first land-grant university was established east of the Central City in 1855, further enhancing its growth. Central City was incorporated in 1859 and the Suburb, in which the university was located, was incorporated in 1910. The University's control of a large block of land was to exercise profound influence on the future physical pattern of development. Much of the logical development corridor outward from the City was preempted by this facility.

Steam railroads were first built into APEX County beginning in the 1860's. Those small market-milling communities with stops and depots on the rail lines began to assume a greater importance than the small communities away from the lines. The impact of the railroads on the small communities can be seen from the following description of Central City:

> By the year 1863, the City...was a bustling, urban center. Early accounts tell us that, at that time, the City included eleven churches, five hotels, two flouring mills, three tanneries, two breweries, three saw mills, two sash and blind factories, three iron foundries, two printing offices, several brick yards, and a large number of mechanic shops.*

Although growing, it should be noted that manufacturing was still minimal. Exports were dominated by agricultural and timber products, and most other production was for local consumption only.

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*Tri-County Regional Commission, "History of the Tri-County Region," Information Report 7, updated. pp. 24-25.

Beginning in perhaps 1880, factories producing goods to be exported out of the region were built in the area, fostered by the completion of railroad ties with the rest of the country. These factories, mainly built near railroad depots, stimulated the migration of factory-worker families into the region. Most of these families settled near the factories where they were employed, adding to the growth of the towns near the railroad. Just before the turn of the century the introduction of the automobile industry into Central City gave the final impetus needed to make Central City into the dominant community in the County. Beginning about the same time, electric interurban railways were extended from Central City to the north, east and west, allowing many workers from the new industries in the City to move further away from their place of employment.

By the 1920's, automobiles had become readily available and their use was encouraged by the paving of most of the roads in the County. Those who had formerly lived fairly close to the interurban system began to be dispersed throughout larger areas and to settle in lower density neighborhoods. Until about 1930, most new development was found in the filling-in of the Central City and Suburb. Although the growth of industrial and bureaucratic functions proceeded in the Central City and the area adjacent to it, the more outlying townships remained, and to some extent still remain, predominantly agricultural. The growing urbanization which has occurred more recently in these fringe areas has been primarily stimulated by the construction of the interstate expressway system beginning in the 1950's.

The interstate highway freeway system in APEX County is shown on the map at the end of this chapter. One major expressway comes from the southeast, sweeps around the southern and western fringes of the City and leaves the County from its northwestern corner. A second expressway comes up from the south, intersects the first and continues northward into the Suburb. It is anticipated that in the future this expressway will be continued northwards, then swing west to finish an expressway loop around the City (dashed line).

In addition to the airport, major transportation into and out of APEX County is provided by rail (primarily freight) and expressway. The attached map outlines the routes of the three rail lines, which generally follow the river valleys and intersect in Analysis Area 8.

A local APEX bus line serves the Central City, with some service extended into the Suburb and nearby areas of the County.

Most travel in APEX is currently by private automobile. There are approximately 2.1 people per registered automobile in APEX. This amounts to approximately one billion automobile miles per year. The automobile is the cause of substantial congestion, property damage, death and air pollution in APEX. Further information about the contribution of the automobile to pollution can be obtained from the Air Pollution Control Officer.

The automobile represents an immense financial burden to owners, political jurisdictions, employers and commercial establishments. Taxes to expand and maintain the road network are constantly expanding. Vast areas of land are required for parking. At the same time, bus ridership is decreasing.

Political Jurisdictions

In the METRO-APEX game, the County is composed of four autonomous jurisdictions: The Central City, Suburb, Township 1 and Township 2. The County has been further divided into 29 "Analysis Areas", each resembling a census tract. The Central City comprises Analysis Areas 1 through 13; the Suburb, AA's 17 through 19; Township 1, to the west, contains AA's 23 through 28 and Township 2, to the east, contains AA's 14-16, 20-22 and 29. (See map). In addition to analysis areas, the Central City is politically divided into Wards:

Ward 1 -- AA's 1-4
Ward 2 -- AA's 5-8
Ward 3 -- AA's 9-13

Each Ward is the electoral district for one of the three City Council seats represented in the game. The County government (Board of Supervisors) is comprised of members elected from the Suburb, from the Townships, from the County-at-large and the Central City-at-large.

The City Council and County Board of Supervisors are the only two local governmental units actively represented in the game. Other local governments, including the school boards, are simulated. In some cases, City and County governments have parallel functions; e.g. they both provide police services, planning and capital improvements. The County however, has area-wide responsibility for three major services not provided by the City government: public health, welfare and pollution control. In these three areas, County actions, directly affect Central City residents as well as residents in the outlying areas. Both the municipal and County governments derive their primary financial support from the same tax base--real property. County property taxes are paid by land-owners, in addition to property taxes collected by the municipal government and the school board in each political jurisdiction.

Data provided to players in the game are nearly always given by analysis area--this is also the smallest unit of scale in referring to locations; that is, a project or house or industry is located in "Analysis Area X" rather than on a particular street or a particular intersection. Characteristics of each individual analysis area, including the socio-economic composition of the residents and the proportions of land area devoted to particular land uses, may be found in the Planners data.

A few analysis areas are almost completely chacterized by one or two major features which are often referred to throughout play. These major features are given in the following list, with their analysis areas indicated:

Central Business District (CBD) -- nearly all of Analysis Area 8

State Capitol -- Analysis Area 8

Ghetto -- Analysis Area 4 and Analysis Area 8

University -- Analysis Area 19 (all)

"Best" residential areas -- Analysis Areas 9 (all) and 17 (most)

These features are not only unique in the County, but they also dominate the analysis areas in which they are located; in the game they are likely to be referred to as locations in themselves, with no further locational explanation given.

A list of other important man-made features of the County, and their locations, is given later in this chapter.

Geography and Climate

APEX County is located nearly at the center of an industrialized northern State, some 85 miles northwest of one of the largest metropolitan areas in the United States. The once heavily forested land, extending roughly 320 square miles, is quite flat and for the most part adequately drained for agriculture.

The Great River, a major watercourse in the State, enters the County from the south in Analysis Area 23, meanders north and west, then back to the east and north as it passes through Analysis Area 8. There it is joined by the Red Oak River, which comes in from the east. The enlarged Great River exits from the County in Analysis Area 26, from which it continues west for some 85 miles before emptying in to the Great Lakes. Major drainage of the County is through the Great River system.

Just before it empties into the Great River, the Red Oak River is joined by Sycamore Creek, which wanders up from the southeast. Much of the area in Analysis Areas 11 and 13, near this creek, is low and somewhat marshy, not ideal for heavy development. The other major marshy area in the County is in Analysis Area 14, to the northeast in Township 2. There are also several small lakes in this analysis area and quite a large State Park. The largest lake

in the County is located in Analysis Area 16. This was a primary recreation area in the early part of this century but is less ideal now, due to heavy pollution loads and deteriorating shoreline development. There are small creeks which wander through many analysis areas in the County. The only other river of any significant size, however, is Looking Glass River; which runs east and west through the northern portion of the County, primarily in Analysis Areas 28 and 29.

The climate of APEX County is temperate, with summer temperatures averaging about 70 degrees and winter temperatures which average about 25 degrees. There is an annual rainfall of roughly 41 inches, with heavy snows to be expected primarily in the months of January and February. Prevailing winds are westerly, swinging to the southwest in summer and northwest in winter.

Major Public Facilities

As might be expected, the Central City and Suburb are significantly better endowed with public capital improvements than are the Townships. The following list includes the most important public structures in the County, and indicates under whose jurisdiction they are operated and where they are located:

Airport (County) -- AA 29, just outside the City limits. The Airport has three runways and a terminal of 27,000 square feet. Two commercial airlines serve the County through this airport; cargo and general aviation are also served.

Boys Training School (State) -- AA 7.

City Hall -- AA 6. This is an old structure, built 80 years ago and considered a scandal. A more central location has been chosen for the new City Hall under construction in AA 8.

Community Centers (City) -- AA's 2, 4, 7, 8, 10, 13. These are mostly old houses purchased by the City to house neighborhood meetings and the operation of special programs.

Community Centers (Township Halls) -- AA's 14 (2), 24, 27, 29.

Community College (County) -- AA 8. The facility is currently housed in an old library and elementary school.

County Building -- AA 8, This includes all County offices and the meeting rooms for the County Board of Supervisors.

County Court House -- AA 8, adjacent to County offices.

Fire Stations (City) -- AA's 2, 3, 4, 5, 6, 8 (2), 11, 12.

Fire Stations (Townships) -- AA's 20, 23, 25. These are modest stations housing limited equipment. Volunteers provide firefighting manpower.

Hospital (County) -- AA 7. This was built in 1912 and was expanded in 1922, 1942, and 1960. It contains 362 beds, including a 35-bed tuberculosis wing, and caters primarily to the indigent. There are three private hospitals in the County with an additional 650 beds.

Library (City) -- AA 8. This is an old downtown building. There are branch libraries in AA's 1, 5, 11, 12 (2), 13.

Library (Suburb) -- AA 18.

Sewage Treatment Plant (City) -- AA 2. This plant provides both primary and secondary treatment and has a capacity of 34 million gallons per day. It currently averages 22 million gallons daily.

Sewage Treatment Plant (Suburb) -- AA 19. This plant provides primary sewage treatment, with a capacity of 12 millic gallons per day; it currently handels an average of 6.75 million gallons daily.

Sheriff Station (County) -- AA 8. This is attached to the County Building.

Water Treatment Plant (City) -- AA 8. Water for the City is derived from the Great River as it exits from Analysis Area 8. Capacity is 42 million gallons per day, with the average daily flow currently being 22 million gallons. Treatment includes filtration, purification, flouridation and lime softening.

Water Treatment Plant (Suburb) -- AA 19. The Suburb's water is drawn from the Red Oak River as it enters AA 19. Capacity is 6 million gallons daily,

with current average flow being 2.5 million gallons per day. Treatment includes chlorination, fluoridation and ziolite softening.

Zoo (City) -- AA 7.

Industry and the Economy

Major employment in APEX County is provided by the State Capitol Complex, the University and a automobile assembly plant, located in Analysis Area 4. While State Government is a stable, slow-growing industry, the University, typical of "research and development" operations elsewhere, is growing at a very rapid rate. The automobile plant exhibits characteristics similar to any large manufacturing operation, fluctuating considerably in response to the national business cycle.

In addition to these "big three" employers, there is a host of industries supplying parts to the automobile industry, as well as independent industries exporting goods which have no relationship to autos. (A map and listing of the major industries in the County are found on the following two pages.) These include the seven gamed industries:

Industry 1 -- Shear Power Company
Industry 2 -- People's Pulp Plant
Industry 3 -- Rusty's Iron Foundry
Industry 4 -- Gestalt Malt Brewery
Industry 4 -- Caesar's Rendering Plant
Industry 6 -- Dusty Rhodes Cement
Industry 7 -- Schick Cannery

Members of the population of APEX County constitute a work force of about 101,000 people, nearly half of them employed by the major "exporting" industries previously mentioned. About 9% of total County employment is found in lighter industry and 41% in commercial and service activities for the resident population. The greatest concentration of manufacturing employment is, as expected, found in the Central City. The highest proportion of white collar workers is in the Suburb, due to the predominance of the University as an employer there. In the futute, it is probable that more and more new industrial growth and employment will occur in outlying areas, particularly among firms requiring significant amounts of land for their plants.

Population

Within the physical and political environment described in the

preceding pages resides a population of some 227,000 persons, a tiny fraction of whom are represented in METRO-APEX as players. The remainder of the population is simulated by the computer in the game. About 63% of the population resides in the Central City, 10% in the Suburb and the remainder in the two Townships.

Only about 9.2% of the County's population is black; however, virtually all of this population is found in the Central City, of which 14.4% of the total population is black, primarily in Ward 1, where the number of non-white households approaches 38%. The only other significant ethnic minority is found in a Mexican-American community in the east-central portion of the city.

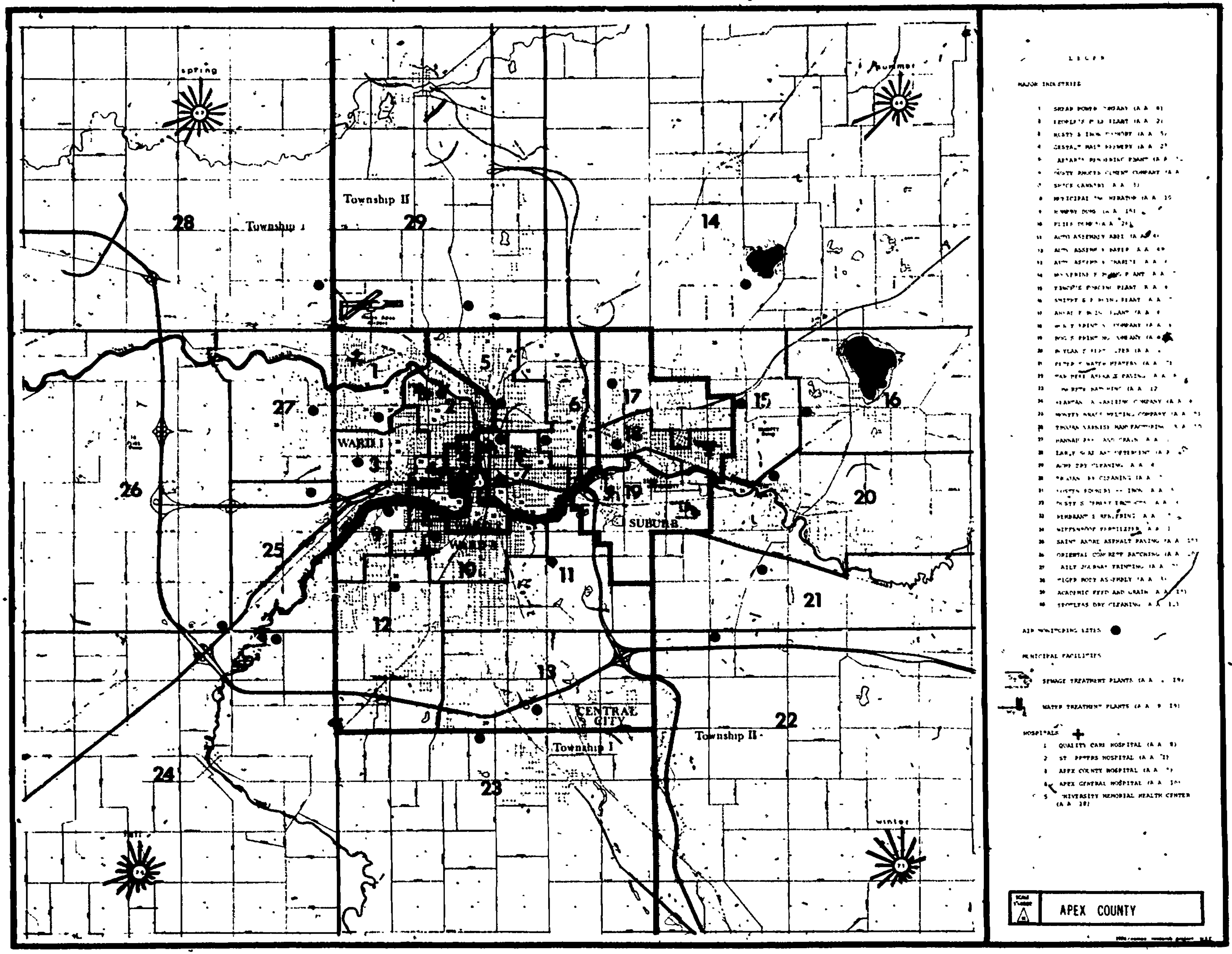
For purposes of the game, the population of APEX County has been divided into five "household types", each representing different occupations and educational achievements, life-styles, voting habits and consumption behavior. These will be described briefly here; more detailed information about each may be found in the Glossary.

Household type 1 is a combination of upper and upper-middle class families whose head of household are likely to be employed in the professions and business management. Household type 2 is typical middle class, occupations usually clerical and lower-level public service areas. Household type 3 includes very low white-collar workers and skilled craftsmen and shop foremen, the latter two predominately. While members of household types 1 and 2 have attended college, some with advanced degrees, household type 3 members are typically high school graduates. In outlying areas, farmers are included in this latter type. In household type 4 are found semi-skilled workers and non-domestic service workers. Usually household heads have not completed high school, and while many household type 4's are homeowners, the value of their housing is quite low. Household type 5 includes laborers, domestic workers and the unemployed, with a large number of the elderly. A majority of these households live in rental units of low value.

Initially, about 17.5% of the County population is found in household type 1, 16% in household type 2 and 27% in type 3; about 32% is of household type 4 and 7.5% fall into household type 5. The household composition of a particular analysis area, and of an entire jurisdiction, will affect significantly the demand for both public and private goods and services. It will also affect voting behavior on financial issues and in elections.

List of Major Industries

1. Shear Power Company (A.A. 8)
2. People's Pult Plant (A.A. 2)
3. Rusty's Iron Foundry (A.A. 5)
4. Gestalt Malt Brewery (A.A. 27)
5. Caesar's Rendering Plant (A.A. 12)
6. Dusty Rhodes Cement Company (A.A. 23)
7. Schick Cannery (A.A. 3)
8. Municipal Incinerator (A.A. 10)
9. Humpty Dump (A.A. 15)
10. Flies Dump (A.A. 26)
11. Auto Assembly Abel (A.A. 4)
12. Auto Assembly Baker (A.A. 4)
13. Auto Assembly Charlie (A.A. 6)
14. Wolverine Forging Plant (A.A. 7)
15. Finch's Forging Plant (A.A. 6)
16. Smithy's Forging Plant (A.A. 2)
17. Ahead Forging Plant (A.A. 6)
18. Wordy Printing Company (A.A.6)
19. Bogus Printing Company (A.A. 6)
20. Boylan's Fertilizer (A.A. 2)
21. Peter's Water Heaters (A.A. 7)
22. Tar Heel Asphalt Paving (A.A. 8)
23. Concrete Batching (A.A. 12)
24. Spartan Galvanizing Company (A.A. 8)
25. Monkey Brass Melting Company (A.A. 5)
26. Trojan Varnish Manufacturing (A.A. 10)
27. Hannah Feed and Grain (A.A. 1)
28. LaRue Soap and Detergent (A.A. 1)
29. Acme Dry Cleaning (A.A. 4)
30 Trojan Dry Cleaning (A.A. 7)
31. Losten Foundry -- Iron (A.A. 5)
32. Dusty's Cement Products (A.A. 3)
33. Rembrants Rendering (A.A. 27)
34. Wiffenpoof Fertilizer (A.A. 1)
35. Saint Andre Asphalt Paving (A.A. 15)
36. Oriental Concrete Batching (A.A. 20)
37. Daily Journal Printing (A.A. 7)
38. Tiger Body Assembly (A.A. 3)
39. Academic Feed and Grain (A.A. 13)
40. Spotless Dry Cleaning (A.A. 11)



spring
summer
fall
winter
Township II
Township I
WARD I
WARD II
CENTRAL CITY
SUBURB
1
2
3
5
6
10
11
12
13
14
15
16
17
19
20
21
22
23
24
25
26
27
28
29
MAJOR INDUSTRIES
39 ACADEMIC FEED AND GRAIN
AIR MONITORING SITES
MUNICIPAL FACILITIES
SEWAGE TREATMENT PLANTS
WATER TREATMENT PLANTS
HOSPITALS
1 QUALITY CARE HOSPITAL
2 ST. PETERS HOSPITAL
3 APEX COUNTY HOSPITAL
4 APEX GENERAL HOSPITAL
5 UNIVERSITY MEMORIAL HEALTH CENTER
APEX COUNTY

CHAPTER 2

Glossary and Reference Terms

Chapter 2

GLOSSARY AND REFERENCE TERMS

ABATEMENT

Abatement is the reduction of pollutant emissions from a source or sources.

AEROBIC

A process taking place in the presence of oxygen; or a state of liquid containing free dissolved oxygen.

AIR POLLUTION

Air pollution is the presence in the outdoor air of substances which, when present in a sufficient quantity or over a period of time, can cause an undesirable effect upon man, property, or the environment.

AIR POLLUTION REGULATIONS

Air pollution regulations are legal constraints on pollutant emissions, production processes, or control systems. State regulations and County regulations are enforceable by legal sanctions, while recommendations are not.

AIR QUALITY (See NATIONAL AMBIENT AIR QUALITY STANDARDS)

Air quality refers to the pollution concentration characteristics of the atmosphere or ambient air in a given area. It is usually stated in terms of the levels of concentration of specific pollutants, in micrograms of pollutant per cubic meter of air (Mgm/m3) (See CONCENTRATION).

Air Quality Goals are expressions of desirable maximum pollutant concentrations to be achieved through a pollution control program.

Air Quality Criteria - The basic medical and technical information which forms the rationalization from which Air Quality Standards are set. This information is published for each major pollutant by EPA in Air Quality Criteria Documents.

Air Quality Standards are quantitatively-specified maximum levels of pollutant concentrations or dosages, as more precise statements of air quality goals.

AIR QUALITY CONTROL REGION

One of the approximately 250 geographic areas covering the United States which form the basic units for air pollution control activities. These areas were designated by EPA (with the states) and are based on considerations of climate, meteorology, topography, urbanization and other factors affecting air quality.

ALERT STAGES

Alert Stages refer to critical levels of concentration or dosage signaling potential disastrous pollution effects and requiring emergency abatement and control measures.

ANAEROBIC

A process taking place in the absence of oxygen; or a state of liquid containing no free dissolved oxygen.

ANALYSIS AREA (A.A.)

Analysis areas are used as the primary areal reference units for the data and issues throughout the game. The County is divided into a number of analysis areas, each of which is the approximate size of several census tracts. The analysis areas included in the five jurisdictions are as follows:

Jurisdiction 1-- Central City: Ward 1 = AA 1 through AA 4
Ward 2 = AA 5 through AA 8
Ward 3 = AA 9 through AA 13

Jurisdiction 2-- Suburb: AA 17 through AA 19

Jurisdiction 3-- Township 1: AA 23 through AA 28

Jurisdiction 4-- Township 2: AA's 14-16, 20-22, 29

Jurisdiction 5-- County: AA's 1-29

See APEX Analysis Area Map

ANNUAL WAGE

This is the annual cost to the Industrialist of one worker and is an average of the various rates of pay applicable to the different types of workers in the firm. The applicable average wage rate for each firm is reported in the Industrialist's printout each cycle under cost factors. This wage rate may be subject to negotiations with the labor representative and this new negotiated wage rate will supercede the rate found under cost factors on his printout.

ASSESSED VALUE

Assessed value is the value assigned to real estate property for purposes of assessing taxes owed to each of the jurisdictior County and school districts. Governments are required by law to maintain an assessed value of 50% of market value for propert in their jurisdiction, although this requirement is often not met. (E.g. if a residential property is valued on the market at $20,000, its assessed value is $10,000.) (See STATE EQUALIZED VALUE.)

BACKGROUND LEVEL

The amount of pollutants due to natural sources such as marsh gas, pollen, conifer hydrocarbons and dust.

BOARD OF DIRECTORS

Each Industrialist acts as a Plant Manager and is responsible to the Board of Directors of his plant for his decisions and actions. The Board has the ultimate decision-making power in plant affairs and may approve, amend or reject the manager's fiscal policy proposal. The Board also sets the amount of dividends to be paid to the stockholders.

BONDING

Bonding is the process of incurring public debt to finance some capital improvement project. It is a device used to extend the incidence of costs over a long period of time, rather than have costs met out of current revenues while the project is under construction. Politicians may issue two kinds of bonds general obligation bonds and revenue bonds. These differ in three respects: (1) the need for voter concurrence, (2) how they are paid off, and (3) the kinds of projects for which they are appropriate. Before Politicians may float general obligatic bonds to finance projects, voters must approve this action in a referendum. There is a State-imposed limit on the indebtednes that a jurisdiction may incur through general obligation bonds. The amount of additional bonded indebtedness that can be sought is indicated in the Politician's output as "$ Limit on Next G.O. Bond Sought". (See DEBT RETIREMENT for the process of financin general obligation bonds.)

Revenue bonds are not submitted to a referendum and are appropriate only for particular projects. (Projects for which they may be used are noted in the Project List.) They are paid off thro fees collected for the service provided by the facility, rather than by taxes.

CAPITAL PLANT INDEX (C.P.I.)

The capital plant index is a ratio of the present dollar value of public capital facilities (sewers, water lines, streets, parks and miscellaneous public holdings) to population equivalents. This number reflects the load imposed on facilities by residents, employees and clients, and this is considered an indication of the relative level of adequacy of these facilites. Present dollar value is calculated each cycle on the basis of depreciated value of existing facilities plus new facilites. (Facilities depreciate at about 5% of original value per year.) (See POPULATION EQUIVALENT.)

CASH CARRYOVER

This is the cash reserve which an Industrialist or Developer carries over to the next cycle after making all his expenditure including those for capital plant. It represents uncommited funds, which the player is free to use in the next cycle.

CASH TRANSFER

A cash transfer is used for loans or gifts of cash between players when the reason for the exchange is unspecified. Revenues made, or expenditures incurred, through an exchange of cash between either the Government, Industrialist, or Developer, are recorded in the budget section of their printout. When applicable, cash transfers are also used to cover the cost of television time and newspaper articles.

CLEAN AIR ACT AMENDMENTS OF 1970

(See LEGAL REFERENCE MANUAL.)

COLLECTION/DISPOSAL STUDY

Studies of municipal house-to-house refuse collection using combinations of different truck types, crew sizes, container locations, transfer stations and disposal sites to determine the capital and operating costs of alternative systems.

COLLOIDAL PARTICLES

Very fine particles of material in fluid suspension; particles will not settle out and can pass through a semipermeable membra

COMBUSTION

Combustion is the process of burning.

CONCENTRATION

Concentration is the ratio of pollutants to effluent gases or ambient air, measured in micrograms per cubic meter (MG/cubic meter) as a weight to volume ratio. Data on mean concentration per quarter, concentration on worst day, and number of days above a specified concentration can be obtained by the APCO, through the installation and operation of monitoring stations.

CONTAMINANT

(See POLLUTANT)

CONTROL EFFICIENCY

Control efficiency refers to the ratio of the amount of a pollutant removed from effluent gases by a control device to the total amount of pollutant without control.

CONTROL STRATEGY

A comprehensive plan designed to control or reduce the level of a pollutant or pollutants in the environment.

CONTROL SYSTEM

Control system refers to equipment and/or procedures intended to reduce the amount of a pollutant, or pollutants, in effluent gases. Each gamed industrial firm has a limited set of control system options for each production process and combustion proces.

DEBT RETIREMENT (Debt Service)

Debt retirement, or debt service, is a term used to describe the process of paying off long-term general obligation bonds sold by public agencies. Debt retirement is a budget category of the Politician which includes expenditures for both principal and interest on general obligation bonds. Financing of these expenditures may be with either normal millage or debt retirement millage.

DEMOLITION COSTS (Clearance Costs)

A demolition cost of 5% of the assessed value of developed PROPERTY must be paid when developed land is rezoned.

DENSITY

In residential areas, density is the term used to express the number of dwelling units per acre of land. In APEX County a different density is associated with each of the five residential

development types, with the lowest density found in land use category R-1 and the highest in category M-2.

The table on the following page expresses housing density in housing units per acre, and in acres per housing unit.

DEPRECIATION ALLOWANCE

Each cycle, the total value of industrial capital facilities, (building and equipment) depreciates at 8%. A tax credit of 5% of the capital value of these facilities is allowed the Industrialist to compensate for this depreciation. The amount is deducted before Federal and State income taxes are paid. The Industrialist may claim any part of his maximum allowance; any portion of the allowance not taken will accumulate. The maximum depreciation allowance is listed under cost factors in the Industrialist's printout.

DEVELOPMENT TYPES AND COSTS

A. Residential

In APEX County there are various levels of cost and density associated with different qualities and sizes of housing which may be built by Developers. These costs are for structures, exclusive of land and site improvements.

Single Family

Three different development-cost levels are applicable to APEX County single-family housing units, ranging from the highest construction cost of $40,000 (designated as R-1) to the lowest cost housing, built at $15,000 per unit (designated as R-3). Any one of these types may be built on land which, when vacant, is zoned R.

Multiple Family

Units of two different cost levels, M-1 and M-2 are available for construction of multi-family housing in APEX County. The highest cost per unit, for M-1, is $30,000 and the lowest, for M-2, is $12,000. Either of these types may be constructed on vacant land zoned M.

Residential Development Costs Per Unit

R-1	R-2	R-3	M-1	M-2
$40,000	$22,500	$15,000	$30,000	$12,000

HOUSING DENSITY

AA	R-1		R-2		R-3		M-1		M-2	
	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit
1	1.4	.714	3.5	.286	5.6	.179	11.2	.089	21.0	.048
2	2.4	.410	6.0	.167	9.6	.104	19.2	.052	36.0	.028
3	2.0	.500	5.0	.200	8.0	.125	16.0	.063	30.0	.033
4	2.8	.357	7.0	.143	11.2	.089	22.4	.045	42.0	.024
5	2.1	.476	5.25	.190	8.4	.119	16.8	.060	31.5	.032
6	1.6	.625	4.0	.250	6.4	.156	12.8	.078	24.0	.042
7	2.5	.400	6.25	.160	10.0	.100	20.0	.050	37.5	.027
8	3.0	.333	7.5	.133	12.0	.083	24.0	.042	45.0	.022
9	1.2	.833	3.0	.333	4.8	.208	9.6	.104	18.0	.056
10	2.5	.400	6.25	.160	10.0	.100	20.0	.050	37.5	.027
11	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
12	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
13	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
14	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133
15	.6	1.667	1.5	.667	2.4	.417	4.8	.208	9.0	.111
16	.8	1.250	2.0	.500	3.2	.313	6.4	.156	12.0	.083
17	1.2	.833	3.0	.333	4.8	.208	9.6	.104	18.0	.056
18	2.3	.435	5.75	.174	9.2	.109	18.4	.054	34.5	.029
19	3.0	.333	7.5	.133	12.0	.083	24.0	.042	45.0	.022
20	.8	1.250	2.0	.500	3.2	.313	6.4	.156	12.0	.083
21	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133
22	.4	2.500	1.0	1.000	1.6	.625	3.2	.313	6.0	.167
23	.7	1.429	1.75	.571	2.8	.357	5.6	.179	10.5	.095
24	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
25	.4	2.500	1.0	1.000	1.6	.625	3.2	.313	6.0	.167
26	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
27	.6	1.667	1.5	.667	2.4	.417	4.8	.208	9.0	.111
28	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
29	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133

B. Commercial

Two types of commercial land use are allowable in APEX County. These relate to local neighborhood shopping facilities and to regionally-oriented commercial and service facilities. Both may be built only on zoning category "Commercial" land. Each is developed on a cost-per-acre basis, as follows:

Commercial Development Costs by Type

CL	CR
$100,000	$125,000

C. Industrial

Endogenous industrial development permitted Developers in APEX County is on a per-acre basis, the cost being $100,000 per acre. Zoning category I land may be developed into this land use.

(See ZONING CATEGORY.)

DOSAGE

The accumulated exposure of a person, plant, materials, etc., to a particular concentration of pollutant for a specified period of time.

DUMP

A site where uncontrolled disposal of solid waste occurs.

EFFLUENT

An effluent is a gaseous or liquid discharge or emission.

EFFLUENT SAMPLES

An effluent sample is an industrial outflow water sample and analysis which provides data on seven water pollutant parameters. A sample may be ordered by the Water Quality Manager and is taken at the source specified by the WQM.

ELITE OPINION POLL (E.O.P.)

The Elite Opinion Poll calls for a vote of all game players on certain major policy issues in the community. These issues appear as headlines in the METRO-APEX NEWS, which ask for either a deciding or advisory vote. The results of the Poll affect public officials' chances of reelection, as well as the probability of passage of general referenda, specific bond issues and special millage requests.

EMERGENCY EPISODE

An air pollution incident in which high concentration of pollutant(s) occur in the ambient air contributing to a significant increase in illness or death.

EMISSIONS

Emissions are pollutants in effluent or exhaust gases which are released into the air.

EMISSION FACTORS

Emission factors are estimates which can be used to approximate the rate of emissions of specific pollutants from generalized sources.

EMISSION INVENTORY

A compilation of the rate of pollution emissions in a given area by source type.

EMISSION MEASUREMENT

Air pollution emissions are measured in pounds per hour for particulates, sulfur dioxide (SO2), carbon monoxide (CO), nitrogen oxides (NOx), and hydrocarbons (HC); in Ringelmann number for smoke; and in Stinkelmann number for odor. The emissions measured are of specific pollutants from specific sources.

EMISSION RATE

Emission rate refers to the amount of pollutant emitted per unit of time or throughput. Maximum allowable emissions will be specified in pounds per hour (or pounds per 1000 pounds of process rate) if they refer to emission rates.

EMISSIONS SOURCE

An emission source is the origin of some specific air pollutants. In the game there are several gamed point sources, about thirty non-gamed point sources, plus motor vehicles and space heating as line and area sources, respectively.

ENVIRONMENTAL IMPACT STATEMENT

The results of a study which identifies and evaluates the adverse or beneficial environmental effects of pursuing a proposed action, pursuing an alternative action or not pursuing the proposed action.

EXOFIRM (EXOGENOUS FIRM)

An Exofirm is an industry or bureaucratic firm that depends primarily upon markets outside the local area for its growth and vitality. These firms are usually classified as Exofirms on the basis of their being net importers of dollars and net exporters of products or services to these outside markets. Jobs created by Exofirm growth spur additional growth of households and jobs oriented to the local market. (Exofirms are also often referred to as basic firms).
In APEX County, Exofirms locate in industrial and office zoning categories. Periodically, the newspaper will note the opportunity for Developers or Industrialists to invest, in a speculative way, in the entry of new Exofirms into the metropolitan area, with a variable probability of success attached to such investments. Occasionally, these Exofirms require rezoning of land and/or installation of special capital improvements. Requirements for such special public action and requests for private investment will be noted in the newspaper announcement of the firm's interest in locating in the area.

FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972

(See LEGAL REFERENCE MANUAL)

FUEL RATE

The amount of fuel consumed by each industry per unit of time is specified in tons/hours for coal, in barrels (bbl)/hour for oil, in thousand cubic feed (MCF)/hour for natural gas, and in megawatts (MW) for electricity.

FUEL TYPE

The fuel types for industry include: low-grade coal (Lo-Coal), high-grade coal (Hi-Coal), low grade oil (Lo-Oil), high-grade oil (Hi-Oil), natural gas, and electricity. The fuel option for each plant is listed in the Industrialist's printout. The fuel grade refers inversely to the air pollution potential of the burining fuel, i.e., Lo-Grade has higher pollution potential, and Hi-Grade fuels have low pollution potential.

GARBAGE

The food waste portion of solid waste.

HAZARDOUS AIR POLLUTANTS

Air pollutants not covered by the Air Quality Standards but which, in EPA's judgement, "may cause, or contribute to, an increase in mortality or --- serious illness." These pollutants generally are toxic substances such as mercury, cadmium, asbestos and beryllium.

HAZARDOUS WASTE

(See "SOLID WASTE TYPE")

HOUSEHOLD/COMMERCIAL REFUSE

(See "SOLID WASTE TYPE")

HOUSEHOLD TYPES

The five household types used in APEX County are characterizations of families belonging to fairly homogeneous socio-economic groups. These characterizations reflect life style, political involvement and voting habits, general consumption behavior and preference for public goods. There is substantial overlap of income levels for all status groupings; hence income, alone, is a weak indicator for characterizing households.

Household Type 1 -- is upper class and upper-middle class combined. Occupations of the heads of households are: professionals, technical workers, managers, officials, and proprietors. One-half of the family income levels are in excess of $15,000 and the other half are in the $10,000-$15,000 range. Value of housing is in excess of $20,000, and if they rent, rentals are over $150 per month. This is the group which is most concentrated in residential locations. Education of the head of the household is at least college graduate, often with post-graduate study. Interest group membership for this household type is found in the Business Community and Effective Government Groups.

Household Type II -- is the typical middle-class household in which the head of households occupation is clerical, sales, or kindred types. Income of the family is primarily in the $7,000-$10,000 range. Education of the head of the household is some college or at least high school graduation.

Housing value is primarily in the $15,000-$25,000 range, and gross rentals would usually be from $100 to $140 per month, though they may be somewhat lower. Interest group affiliations for this type are with the Effective Government Groups on the one hand, and with the Right-wing Conservatives on the other.

Household Type III -- the most numerous and widely-distributed of the five types is characterized by a mixed membership of very low income white collar workers, skilled craftsmen, and foremen, though the latter two predominate. In the outlying areas, farmers fall into this category. Family income is primarily in the $5,000-$9,000 range. The head of the household's education is typically high school graduation. Housing value is usually in the $12,000-$20,000 range and rentals are from $80-$125 per month. Members of this group are apt to belong to the Labor Vote and/or the Right-wing Conservative interest groups.

Household Type IV -- is composed of semi-skilled workers, industry operatives and non-household service workers, such as waiters, barbers and parking-lot attendants. Family income is in the lower portion of the $4,000-$7,000 range. Housing values range from $10,000 to $14,000 with gross rentals being $70 to $90 per month. Education of the head of the household is usually 9 to 11 years. Interest group membership for this household type is found in the Labor Vote and among the Civil Rights Groups.

Household Type V -- is the lowest stratum of society, and heads of households are laborers or household service workers. The vast majority of the area's unemployment are of this type and roughly half of all members are elderly and retired. Family income is less than $5,000 annually and the value of housing is less than $10,000, with rentals primarily $50-$75 per month. Heads of households have usually not been educated beyond the eigth grade. Membership in interest groups is found in the Labor Vote and Civil Rights Groups.

Political involvement of the five household types declines from Type I (the highest) to Type V, the latter being generally apathetic. Likewise, concern with government operation and provision of public services is highest in Type I households and declines steadily through Type V families.

The five household types will tend to demand housing of the five residential development types according to the following percentages:

Household Type I -- 50% will choose R-1; 30% R-2 and 20% M-1

Household Type II -- 20% will choose housing in each of the five development types

Household Type III -- 10% prefer R-1; 30% prefer R-2; 20% choose R-3; 25% take M-1, and 15% M-2

Household Type IV -- 20% will choose R-2; 40% R-3; 10% M-1, and 30% M-2

Household Type V -- 40% will be in R-3; 60% in M-2

IMPLEMENTATION PLAN

Under the 1970 Clean Air Act, each state must prepare and have approved by EPA an Implementation Plan which details the methods, strategies and timetable which the state and its jurisdictions will employ to meet and maintain the Air Quality Standards within the control region(s) within its jurisdiction.

IMPROVEMENT COSTS

Improvement costs are fees to prepare raw land for development, including subdivision costs, sewer and water connections, drainage and engineering. Developers are required to pay improvement costs on all land on which they build structures. For residential property, improvement costs are on a per unit basis as follows:

R-1	R-2	R-3	M-1	M-2
$1,000	$800	$700	$600	$400

For commercial and local industrial land uses, improvement costs are on a per acre basis; for each the fee is $5,000 per acre.

These fees are automatically applied to all land on which the Developer builds.

INTEREST GROUPS

In APEX County there are 5 major political interest groups that take stands on public policy issues and have a significant impact upon voting behavior. The more extreme the position assumed by one of these interest groups (as indicated on a scale of +4 to -4), the greater will be the voter turnout surrounding any particular referenda or election. Each of these interest groups derive their constituency from among two or more of the "Household Types" (See HOUSEHOLD TYPES)

1. CIVIL RIGHTS GROUPS: The orientation of these groups is primarily towards issues such as fair employment, neighborhood improvement, and problems that affect minorities. Their leadership is drawn from the elite liberals or the ghetto activists, their membership from the lower social strata. Their mode of operation is typically public protest and demonstrations centered around a very specific policy issue or community problem, and their influence on the system as a whole is moderate.

2. EFFECTIVE GOVERNMENT GROUPS: Are overwhelmingly middle class, composed primarily of professional people, a large percentage of them women. These groups are interested in a wide range of issues, on which they exert moderate influence. their orientation is towards governmental efficiency and towards community growth and image.

3. BUSINESS COMMUNITY: Draws from the whole range of commercial and mercantile interests, as well as some from the professional areas such as law, engineering and medicine. The business community exerts the highest degree of power of all politically oriented interest groups; their interest is directed primarily at community image, growth, and "BOOSTERISM".

4. LABOR VOTE: Are more conservative locally than nationally and exhibit some divergency between craft unions and industrial unions, the former being more conservative. The labor vote exert moderate influence on a range of issues somewhat less broad than those of interest to the "Effective Government Groups". The conservatism of the labor vote is especially apparent in the opposition of some of its constituency to public spending for social welfare.

5. RIGHT-WING CONSERVATIVES: Draws its membership primarily from people who resist change and advocate conserving the "traditions of Americanism--God and Country." They are generally against social change, increases in government influence in local affairs and public spending on social programs. Since these groups do not advocate change, they usually only become actively involved in public issues as a reaction to public programs proposed by other groups.

INTEREST RATE

The cost of borrowing money will vary for the Industrialists and Developers according to both their credit rating and the length of the loan, i.e., how many years will be taken to repay it. The maximum number of years on any loan by an Industrialist or Developer is 20 years. Applicable interest rates as follows:

Years to Repay	Credit Rating		
	A-1	A-2	A-3
1-2	4%	6%	8%
3-5	6%	8%	12%
6-10	8%	12%	16%
11-20	12%	16%	20%

The cost of borrowing money for governmental agencies, the interest rate on bonds, will vary according to the credit rating of the jurisdiction, and will differ between general obligation and revenue bonds. Since revenue bonds are not backed by governmental taxing power they are riskier and therefore carry higher interest rates than general obligation bonds. As a jurisdiction's credit rating falls from A-1 to A-3, the interest rate on general obligation bonds will increase from 4.5% to 6%.

INVERSION

A layer of air trapped near the ground by a layer of warmer air above it.

ISSUE

Issue is used to refer to a problem situation presented to players in the METRO-APEX NEWS. Following each issue are two to four alternatives one of which must be selected by the player.

(See ELITE OPINION POLL)

JURISDICTION

Jurisdiction refers to one of the political units in APEX County. Abbreviations used in the game are:

(Jurisdiction 1) CC - Central City
(Jurisdiction 2) SUB - Suburb
(Jurisdiction 3) TW 1 - Township 1
(Jurisdiction 4) TW 2 - Township 2
(Jurisdiction 5) Co - County

(See ANALYSIS AREA.)

LAND USE

Land use is a term used to refer to the spatial distribution of City and rural functions--its residential communities or living areas, its industrial, commercial and retail business districts or major work areas and its agricultural, institutional and leisure time functions.

(See DEVELOPMENT TYPE and ZONING CATEGORY.)

LEACHATE

Water moving vertically through the soil of a landfill that may become contaiminated from the waste material in the fill.

MAXIMUM PRODUCTION CAPACITY

This is the maximum number of units which can be produced by a gamed industry in a cycle, with the plant and equipment in existence during that cycle. Maximum capacity may be increased by making capital expenditures for building and equipment. New productive capacity becomes available only in the cycle following that in which money is budgeted for plant expansion.

MEAN PROBABLE NUMBER PER 100 ml (MPN/100 ml)

A measure of the amount of coliform organisms per unit volume. By using quantities of sample varying in geometric series i.e., 0.01, 0.1, 1.0 milliliters, and by applying the usual test for coliform organisms, it is possible to determine a statistical estimate or "most probable number" of coliform organisms per 100 ml of water.

MICROGRAMS PER CUBIC METER

The weight of a substance in 1/1,000,000 of a gram contained in one cubic meter of volume.

MILLAGE

Millage is the tax rate, in mills, which is applied to State equalized property value to generate property tax revenue. One mill is equal to a $1 charge on each $1000 of value, or one tenth of one percent of the State equalized value. There are three types of millage:

A. Normal Operating Millage is determined by local Politicians and is applied to standard operating costs of government by State and local law -- the local limit can never be higher than the limit set by the State.

B. Special Millage, which is not subject to State and local limits, can be used for financing special programs. It must be voted and passed on in a referendum.

C. Debt Retirement Millage is not subject to the State and local limits but it can be used for retiring general obligation bonds. This millage requires a favorable vote in a referendum.

Total millage is the sum of operating millage, any special millages and the debt retirement millages which may be in effect during the year.

MILLIGRAMS PER LITER (mg/l)

Weight per unit volume. For water effluents, milligrams per liter is used to express the concentration in terms of the weight in milligrams of a dissolved or suspended pollutant in one liter of water.

MONITORING STATION

A monitoring station is a facility that houses air quality monitoring equipment for measurement of ambient air quality. One air quality monitoring station may be installed and operated in any analysis area. The pollutants measured at each monitoring station are:

Particulates, SO2, CO, NOx, and Hydrocarbons

Each pollutant is measured by a different type of monitoring equipment.

(See AIR QUALITY)

NATIONAL AMBIENT AIR QUALITY STANDARDS

EPA has set Primary and Secondary Air Quality Standards which are the maximum concentration of air pollutants allowable by federal law. Primary Standards are based on protection of the public health and are to be achieved as a first priority. Secondary Standards are based on the public welfare and will be achieved as a second priority.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

(See LEGAL REFERENCE MANUAL)

OFF GASSES

Gasses arising from landfills or other solid waste conversion (such as thermal) operations and leaving the site of generation.

PLANNED UNIT DEVELOPMENT

A planned unit development is an allocation of density to a development site such that the overall density meets the zoning requirements, but within the site certain areas may be of a higher concentration than those other developments around this site. This allows the Developer more flexibility in designing planned neighborhoods.

(See DENSITY)

PLANT INSPECTION

A plant inspection is an "on-site" examination of production and pollution control equipment, processes and procedures. Plant inspections ordered by the APCO will provide him with information on the production processes; production capacity; fuel and process rates; control systems; smoke code (Ringelmann number); and odor code (Stinkelmann number) for each process of a specific gamed or non-gamed emission source.

PLANT MANAGER

The player in the role of Industrialist is acting as a Plant Manager.

(See BOARD OF DIRECTORS.)

POLLUTANTS

Air Pollution:

(1) Particulates: particulate matter is any material (except uncombined water) which exists in a finely divided form as a liquid or solid at standard conditions.

(2) Sulfur Dioxide (SO_2) is a pungent colorless gas which is commonly emitted from the combustion of sulfur containing compounds, especially fuels such as coal and fuel oil. Sulfur dioxide can also be emitted from chemical process plants, metal process plants and trash burning incinerators.

(3) Carbon Monoxide (CO) is a colorless, odorless, very toxic gaseous product of the incomplete combustion of common fuels. It can also be generated by metabolic processes and the partial oxidation of carbon-containing compounds such as limestone. Carbon monoxide adversely affects human respiration by interferring with the body's ability to assimilate oxygen.

(4) Oxides of Nitrogen (NOx) are formed when oxygen and nitrogen are heated to a high temperature. Sufficiently high temperatures to produce significant amounts of NOx are normally only reached in modern efficient combustion processes such as electric power plants and automobile engines. Oxides of nitrogen in combination with hydrocarbons and sunlight are major constituents of photochemical smog.

(5) Hydrocarbons (HC) are compounds containing combinations of hydrogen and carbon. Gaseous hydrocarbon air pollutants are most commonly emitted from the incomplete combusion of fuels such as gasoline, coal, oil and gas from the production, handling and evaporation of gasoline, paint thinners, solvents, etc. Hydrocarbons along with oxides of nitrogen and sunlight are important in the generation of photochemical smog.

Water Pollution:

(1) Biological Oxygen Demand - B.O.D. is the amount of oxygen needed by any polluted water or sewage to allow micro-organizms to consume the suspended and dissolved biodegradable organic material found in the liquid under aerobic conditions.

(2) Coliform Bacteria - Micro-organisms found in sewage serving as the indicator of bacterial contamination in water quality.

(3) Dissolved Oxygen (D.O.) is the amount of oxygen found and available for biochemical activity with a given volume of water (mg./l.). The saturation point is dependent upon temperature, chemical characteristics of the water, and barometric pressure.

(4) Nutrients - Nutrients are phospates, nitrates, nitrogen and phosphorus released as waste from certain industries or produced from agricultural and urban runoff.

(5) Thermal Pollution - The increase in temperature of surface waters as a result of the use of these

waters for cooling purposes by industry or public facilities. The heat accelerates biological processes in the stream, resulting in reduction of oxygen content of the water.

(6) Total Dissolved Solids (T.D.S.) - The amount of solids, dissolved in a given volume of water (mg./l).

POPULATION EQUIVALENT

The population equivalent is a means of converting (a) residents, and (b) employees and clients of industries and commercial facilities into a standard measure of the demand placed on such public capital facilities as sewers, streets, and water supply. The population equivalent of an area (analysis area or jurisdiction) is computed as follows:

P.E.= [Total households]+[.8 x all employees of commerce and industry]

For use of population equivalents in APEX County, see CAPITAL PLANT INDEX.

PROCESS RATE

Process rate refers to the amount of materials processed by an Industrialist per unit time. The measure is specified in tons, pounds, barrels, per minute, per hour, etc.

PRODUCTION LEVEL

This is probably the key item determined by an Industrialist each cycle. It is the number of units of a product his plant will produce in that cycle. The Industrialist is free to set his production at any level he chooses, as long as the figure he sets does not exceed his maximum production capacity.

PRODUCTION PROCESS

A production process is a definable part of the overall production system of a given firm. Each gamed industrial firm may have up to five production processes, while each non-gamed industrial firm is assumed to have only one process.

PROMPT SCRAP

Wastes that are recycled for direct reuse without entering the solid waste stream.

QUASI-PUBLIC LAND

This is land owned by tax-exempt organizations such as churches and fraternal organizations. Such land includes church buildings and schools, cemeteries and such miscellaneous buildings as Elks lodges, etc.

REACH

A reach is a generally homogeneous segment of a river or stream. Often in water quality management typical measurements of water quality from any point in the reach are used as representative of the entire reach.

REFERENDUM

A referendum is a vote of the (simulated) population of a jurisdiction on some issue presented to the people by the Politician. Most usually referenda are called to approve (or reject) a general obligation bond issue or a request for special millage, although they may be called to approve some legislative matter, such as open housing.

REFUSE

A term applied broadly to mixed solid waste including food waste, trash, street sweepings, and non-toxic solid industrial wastes.

REZONING APPLICATION FEE

The rezoning application fee is a charge of $100, which is assessed for each rezoning request submitted by a Developer or Industrialist. It is included in that player's financial statement for the next cycle.

RINGELMANN NUMBER

The Ringelmann Number is a scale for measuring the blackness of smoke fumes and is equivalent to the opacity. Ringelmann Numbers and opacities are used for specifying allowable smoke emissions (Ringelmann for black and opacity for other colors). #0 = zero opacity #1 = 20%, #2 = 40%, #3 = 60%, #4 = 80%, #5 = 100%. In APEX County, all smoke readings are reported as Ringelmann Numbers.

SALVAGE

The recovery for reuse of any valuable component from the solid waste stream.

SANITARY LANDFILL

An operation where solid waste is deposited in the ground in a controlled manner. The waste is compacted when delivered and covered daily. APEX County can have three classes of sanitary land fills. (See below.)

SANITARY LANDFILL--Class I

A site where disposal of toxic or hazardous industrial waste (solid waste type 1) is permitted due to the geology and soil characteristics. Solid waste type 2 and 3 may be deposited in this class site.

SANITARY LANDFILL--Class II

A site where only non-toxic or non-hazardous waste may be deposited. These sites receive primarily mixed municipal refuse (solid waste type 2). Solid waste type 3 may also be deposited in this class site.

SANITARY LANDFILL--Class III

A site where only solid fill (solid waste type 3) may be deposited.

SEWAGE TREATMENT LEVELS

Primary Treatment - A series of mechanical treatment processes including screening and sedimentation, which removes most of the floations and suspended solids found in sewage, but which have a limited effect on colloidal and dissolved material.

Secondary Treatment - A series of biochemical, chemical, and/or mechanical processes which remove, oxidize or stabilize nonsetteable, colloidal, and dissolved organic matter following primary treatment.

Tertiary Treatment - Any sewage treatment process that has the capability to remove over ninty-nine percent of the pollutants in sewage if it follows secondary treatment.

SOIL PERMEABILITY

A measurement of the water porosity of soil; soil porosity measured in gallons per day of water which will be absorbed by one square foot of soil surface.

SOIL SURVEY

An engineering/geological survey of an analysis area which provides data on the water table level, soil type, and soil permeability. These parameters are important criteria to determine the suitability of an A.A. for Class I, II, or III sanitary land fills.

SOIL TYPE

Three predominent soil types are found in APEX County--clay, sand or gravel.

SOLID WASTE

Any waste that can be handled as a solid rather than a liquid.

SOLID WASTE DISPOSAL

The end point of solid waste handling; may include open dumps, sanitary land fills, incinerators, composting, hauling out of APEX County by contract, salvage and recycle, etc.

SOLID WASTE SOURCES

Solid wastes are generated from various sources as --

Household - Solid wastes from residences.

Commercial - Solid wastes derived from non-industrial commercial operation.

Industrial - Wastes produced as a result of manufacturing or related industrial operation.

Municipal - Mixed Household and Commercial waste that may contain some street cleaning wastes and industrial solid wastes.

Agricultural - Wastes derived from basic crop or animal operation including waste vegetables, minerals and animal manure.

SOLID WASTE TYPE

APEX County solid wastes are specified as one of three following types--

S.W. Type 1 - Hazardous Wastes; includes sewage sludge, pesticides, industrial chemicals, etc., (Only small quantities of high toxic wastes and radioactive wastes are generated in APEX County and these are not included in Type 1 wastes.)

S.W. Type 2 - Household/Commercial Refuse; includes trash, rubbish, garbage and decomposable organic refuse from commercial and household operations picked up by regular route collection.

S.W. Type 3 - Solid Fill; includes bulky non-water soluable, non-decomposable inert solids from municipal and industrial operations, demolition, etc. Examples are earth, rock, gravel, concrete, asphalt paving fragments, clay, glass, and rubber products.

Industrial wastes are distributed among the above three categories depending upon the characteristics of the particular waste.

SOURCE TYPES (AIR POLLUTION)

Point Source - A stationary source of pollution which has the potential of emitting a substantial amount of pollutant(s) such as a factory or power plant.

Line Source - A moving source of pollutants such as automobiles, buses, trains, and aircraft.

Area Sources - The sum of numerous widespread small stationary pollution sources as the space heaters in buildings.

Indirect or Complex Source - Stationary facilities or developments which indirectly generate substantial pollution by means of activity associated with them (such as vehicle traffic generated by shopping centers, sports complexes, airports, etc.)

STANDARDS OF PERFORMANCE

Direct limitations of pollutant emissions from certain types of high pollution sources (power plants, etc.) set by EPA and/or the states.

STATE EQUALIZED VALUE

State equalization is a process designed to even out differences in assessment practices among political jurisdictions. The state equalization factor applied to each jurisdiction's assessed value may thus be different. The state equalized value for a jurisdiction, reached by applying the factor to local assessed value, is the base on which millage is levied to generate property tax revenues.

STINKELMANN NUMBER

The Stinkelmann Number is a scale (developed in APEX County) for measuring odor emissions, and for specifying maximum allowable odor emissions. Numbers range from 0-5, covering least to worst odor levels, respectively.

TAX RATE

See MILLAGE

TRANSFER STATION

Site at which wastes are transferred from small compacter vehicles to larger long distance transport vehicles.

TRASH

The non-food, non-putrescible fraction of solid waste.

UNIT COSTS

The costs to the Industrialist of operating his plant are calculated, for each production component, except labor, on the basis of the amount and cost of each component required to produce one unit of the product. These unit costs apply to fuel, administrative overhead, inventory, and raw materials.

Fuel Cost applies to the fuel required to produce each Industrialist's product and will be different for each fuel type.

General Administrative Costs include all overhead expenditures, other than salaries, involved in production.

Inventory Carrying Costs must be paid to store product inventory from one cycle to the next. This cost excludes taxes on inventory.

Materials Costs include all raw materials required to produce the product, except fuel.

The unit costs for each of these components which are applicable for a particular Industrialist for the next year are included in that player's output.

UNIT SALES PRICE

This is the price, which an Industrialist sets each cycle, at which he will sell a unit of his product. Each Industrialist except the power plant has complete control over price; although the number of units he actually sells

will be dependent on the relationship of his price to supply-demand conditions in the general market, and to the current average industry-wide price (reported for the last three years in the Industrialist's output).

WATER QUALITY SAMPLES

A water quality sample is a water sample and analysis providing data on seven water pollutant parameters. The water quality manager may order water samples and designate the location from which they are to be taken.

WATER TABLE LEVEL

The distance from the surface of the ground to the underlying ground water level.

ZONING CATEGORY

Zoning categories apply only to vacant land for APEX County. Each of the six zoning categories may be developed into one or more types of land use:

FROM	TO
Zoning Category	Developed Land use Type(s)
(1) R - Single-family residential	(1) R-1 (low density, high cost) (2) R-2 (med. density, med. cost) (3) R-3 (high density, low cost)
(2) M - Multiple-family residential	(4) M-1 (low density, high cost) (5) M-2 (med. density, low cost)
(3) C - Commercial	(6) CL (Commercial-Local) (7) CR (Commercial-Regional)
(4) I - Industrial	(8) IL (Local industry) (9) IX (Exogenous industry)
(5) O - Office	(10) O (Exogenous office)
(6) A - Agricultural	(11) A (Active farming)

CHAPTER 3

Role Description

Chapter 3

PLANNER'S ROLE DESCRIPTION

Today, in our complex and expanding urban environment, the Planner must be more than a designer of the physical elements of an urban area; more than a zoning administrator. The Planner must be a participant in an urban system and concern himself with the broader environmental needs of urban residents.

The Planner must consider the utilization of the land; the generation of revenue through an adequate tax base; the relative placement of residential, industrial, commercial, recreational areas, and the provision of adequate modes of access among them. He must also be aware of the quality of the air and water and the disposition of solid wastes, the safety of the streets, availability of educational facilities, etc. In short, the Planner must be concerned with the total Quality of Life and the Human Environment.

Most important, the Planner must understand the process of public policy decision-making in his community. This knowledge gives the Planner the ability to plan for continuous, ongoing community development, rather than end-state planning, which is doomed to failure.

The decision-making process in APEX County, as in the real world, is as varied as the individuals who assume the key roles. Various complex and powerful constraints may frustrate the Planner, challenging his beliefs and values, as well as influencing the decisions he makes. Such forces may ultimately require the selection of trade-offs and alternatives which may be difficult to accept. Many of the Planner's decisions take the form of either a recommendation or the response to an inquiry from the Politicians by whom he is employed. In such an advisory capacity, Planners often face a crossfire of demands.

The Developers may pressure for modification of land use plans in order to increase profits; Politicians may demand the Planners support politically motivated programs, that may not really meet community needs; Industrialists and Environmental Quality Officers will frequently be in conflict, and Planners recommendations may affect the final decison; Citizens Groups will seek support and assistance in the solution of a wide variety of human, social and economic problems. Many of these requests may be frivilous or of narrow interest and be difficult to place in a context of "total community needs." Thus, while not an elected civil official, the Planner actually operates in a highly political atmosphere.

The Planner must assimilate a variety of often complex information inputs, both from the computer and from the game players, including indicators of patterns of growth, concentration, movement, and individual and multi-organizational needs of the urban system. The data will often challenge the Planner's ability to assimilate, to interpret, to formulate conclusions, and do so in time constraints that do not permit detailed or systematic analysis. The role is structured only to the extent of the nature of the data available; the potential expansion of the role is thus limited only by the boundaries of a player's creativity, involvement, and commitment.

In APEX County, Central City Planners have primary responsibility only within the city limits. County Planners, on the other hand, have responsibility for all County-wide facilities, such as the airport, County Hospital, the Sheriff's Department, and major existing solid waste disposal sites. The degree of coordination between the two planning offices, including the possibility of creating a Regional Planning Office having general jurisdiction in all APEX County, will be up to the individual players. This would require the final approval of the elected officials involved.

A substantial amount of the County Planner's activities will center around the preparation of a list of recommended Capital Improvement Projects. If implemented by the Politicians, these projects could consume the major part of the County's budget and thereby have a strong influence on determining public policy. The infrastructure of roads, sewers and water service developed under these projects can, in large part, define the quantity and quality of change that an area is likely to undergo.

The Capital Improvement Program is prepared by the Planner for one cycle (year) in advance of the current cycle. Thus, in Cycle 2, he is preparing capital budget recommendations which will be presented to the Politicians in Cycle 3. The recommendations will appear on the Politician's printout. The Planner should be prepared to provide supporting arguments for his proposals when the Politician is drawing up his Capital Budget. If the Planner's interpretations of future needs were accurate, his recommendations should still be supportive. If, in light of changes which occured during the preceding year, the Planner wishes to make changes in the projects themselves, or in the priority which he assigns to them, he may do so before presenting his program to the Politician. Of course at the same time the Planner is presenting one capital program to the Politician, he must also be formulating another to present in the following year. Since it is up to the Politicians to budget and implement projects, all of the Planner's recommendations are not necessarily followed. If the Politicians refuse to budget a project which the Planner feels is essential, the Planner may recommend it again for consideration in the following year.

The Planner may also wish to recommend that the Politicians initiate, in the Operating Budget, certain Special Programs. These are "people oriented" programs which deal primarily with public services such as welfare, recreation and health. The Planner is free to recommend any programs (which are listed in the Special Program List) which he feels might aid the community.

The Planner's day to day activities include making recommendations on all rezoning applications initiated by other players. He may also intitiate rezoning requests himself in order to implement the Master Plan, etc. The Politicians, however, make the final decision on all rezoning matters. The Planner should have a rationale upon which to base his recommendations on zoning cases, such as the aim of spurring or retarding growth in particular areas.

Planners may become directly involved in making recommendations about the desired location of new Exofirms which may wish to build and operate in their jurisdictions. The environmental impacts of these firms might be key elements in developing long range air quality goals by controlling the location of emission sources. They may also find that those locational considerations which affect travel, and hence, traffic densities, will also affect concentrations of emissions from motor vehicles; air pollution factors normally enter into traffic and transit planning.

At the same time, Planners will be concerned with levels of industrial employment and with tax base changes in the City and County. These may be adversely affected by overly stringent environmental quality regulations or zoning regulations. Planners may be concerned with the interdependencies and tradeoffs between various methods for disposing of wastes, recognizing that reduction of air pollution emissions may mean increased solid and liquid waste disposal. Planners, with their general concern for the quality of life for residents of their areas, should be concerned with the potantial effects of environmental quality on human health, on vegetation and wildlife, on buildings and materials, and on property values.

The planning function normally consists of both line and staff activities. Line (operating or substantive) functions consist of guiding urban development activities and providing insight into the physical, economic and social characteristics of the community through research activities. Staff (administrative or policy-making) activities relate to the coordination of public programs and advising the Politicians on community goals.

Another way of characterizing the responsibilities of the Planning Department cuts across the line/staff function concept, dividing planning activities into two main categories: Advance Planning and Current Planning.

Advance Planning Includes:

1. Preparation of statements on planning policy
2. Preparation of a Master Plan, Transportation Plan, etc.
3. Research necessary to prepare, support, and update plans and policies

Current Planning includes:

1. Implementation of the Master Plan (comprehensive plan) by reviewing or initiating proposals which affect it (e.g., plans for schools, streets, parks, playgrounds)
2. Preparation of the Capital Improvement and Special Programs Budget
3. Process, review and preparation of recommendations on rezoning proposals
4. Research and recommendations on policy for current issues and problems facing the community. (In conjunction with Advance Planning.)

Some Planners on the staff may take the primary responsibility for Current Planning while others may act primarily as the Advance Planners. The Advance Planners will be occupied during the initial cycles in familiarizing themselves with the data base of APEX County such as: community quality indicators, capital plant indices, changes in household and employment, zoning and land use distribution, appraised valuation and sales prices of developed property. These are dependent on and changed with each cycle's community development. Using this data he can prepare a long range master policy plan for the development of the metropolitan area. (i.e., where new development should be encouraged and were discouraged, what should be the nature of the new development, etc.) This policy plan may then be presented to the Politicians and the community for review and adoption. An approved Master Plan should be consulted when specific proposals come up (e.g. rezoning requests, location of Exofirms, etc.) to be sure that they are compatible with the Plan. It should also provide the rationale for Capital Improvement Program recommendations.

Obviously, it is important for the Planner to use all available data to develop and support his recommendations in a way which will direct attention toward the more critical problems of a changing and developing community. As the Planner's data accumulates through cycles of play, data changes with time become available from which trends may be identified.

Three items of specialized information which are included in the Planner's output are particularly relevant to the formulation of a Capital Improvements Program. These are:

1. A table of Community Quality Indicators, including such items as the overall capital plant index, population totals, unemployment rate of residents, the number of families with incomes under $3,000, the percentage of deteriorated buildings, and the percentage of the population which is non-white. (All given by Analysis Area);

2. A table of capital plant indices by budget type (i.e., water, sewers, parks, streets, and miscellaneous) for each Analysis Area, including the relative rank of each Analysis Area;

3. A table showing, by Analysis Area, the changes in population of each household type.

The Planner should also keep track of information contained in:

1. The table of present land use by zoning category for each Analysis Area;

2. The table of assessed values of property by zoning category for each Analysis Area.

The Planner role in APEX County is analogous to that of the "real-world" community planner who has few really potent control mechanisms to use in implementing his concept of worthwhile programs and desireable community goals. A major part of his success is based on his ability to develop and pursue strategies for community development through an effective conceptualization and communication of present needs, trends and future requirements. The Planners' definition of the needs he intends to address should take into account a variety of inputs other than those provided by his computer printout... Such as those articulated by community organizations or pressure group representatives. The Planner must be aware of the political constraints of the Politician. In dealing with the Politician, he would be wise to consider the impact of voter support on each aspect of his proposals. By involving the various sectors of the community in the whole planning process, the Planner will optimize the validity of his suggestions in the Politician's eyes, as well as increasing the manpower available to assist him in analyzing and defining community needs. Channels of communication between the planning department and the various public and private sectors can be one of the Planners most valuable tools:

-- They assist with the input of ideas for a valid definition of community needs

-- They serve as feedback mechanism to gauge the impact of projects and programs already in progress;

-- They create a forum where Planners can find and associate with much needed allies in the community;

-- The policy recommendations he makes will have a base of political legitimacy he could otherwise not attain.

In summary, the major activities and responsibilities of the Planner are the following:

-- Formulate short and long range goals and policies for his jurisdiction

-- Coordinate and aggregate community inputs for community plans

-- Recommended Capital Improvement Programs

-- Recommend Special Programs

-- Process, review, and initiate recommendations on rezoning proposals

-- Advise Politician on issues... Their impacts, political and otherwise.

-- Provide information to other players and seek the assistance of community organizations in dealing with his jurisdiction's problems

-- Vote in Elite Opinion Poll, read the newspaper, etc., to stay abreast of the community's development.

CHAPTER 4

Annotated Worksheet

Chapter 4

ANNOTATED PLANNER WORKSHEET

The Planners Worksheet has six parts: (1) The Elite Opinion Poll, (2) Recommendations for Capital Improvement Projects, (3) Recommendations for Special Programs, (4) Rezoning Applications, (5) Request for Planned Unit Development, and (6) a News Release.

At the end of each cycle, these decisions will be transferred to the computer. Space will be provided on the worksheet for decisions over one cycle. This worksheet will be the official record of your recommendations and decisions as City or County Planner in APEX.

I. ELITE OPINION POLL

Each year certain issues will appear in the APEX Gazette which require decisions from all role players, acting as the "elite" or power structure of the community. In some cases the decision of the elite is binding on the Politicians and the poll can be considered the same as submitting a referendum to the voters. Here the newspaper will read "DECIDED BY OPINION POLL MAJORITY." In other cases, the decision of the elite is merely advisory, and the Politicians can decide whether or not to heed their mandate. Here, the newspaper will read "POLITICIAN'S ULTIMATE DECISION BUT ELITE OPINION SOLICITED."

The outcome of the vote will be recapitulated in the next cycle's newspaper. For each issue outcome, the newspaper will also print the reactions of five pressure groups--Civil Rights Group, Effective Government Groups, the Business Community, the Labor Vote, and Right-Wing Conservatives.

Players should vote on all issues in the Elite Opinion Poll, including those on the Business Page. Each role will have one vote. In the cases where there is more than one person in a role, they will have to come to an agreement.

The Elite Opinion Poll is especially important to the Politicians because their actions relative to the poll may affect their chances for re-election.

Instructions: Indicate your role and the cycle number at the top of the page. Put the issue number in the left hand column (this should not be confused with a project number), and the number of the alternative chosen in the adjacent column.

Example:

ISSUE NO.	ALTERNATIVE
41	2
1	3

II. RECOMMENDATIONS FOR CAPITAL IMPROVEMENT PROJECTS

The recommendations for capital improvements, if adopted by the Politicians, provide the most direct method for implementation of the Planning Program. Public expenditures for streets, water and sewer facilities, parks, public buildings, etc., will have a great deal of influence on the direction, magnitude and quality of future development. The Planner works one year ahead of the Politicians in making capital improvement recommendations. The recommendations submitted by the Planner at the end of one cycle will appear on the Planner's output as well as on the Politician's output at the beginning of the next cycle. These will be considered for inclusion in the Politician's next cycle's budget.

A complete list of Capital Improvement Projects can be found in Chapter 6 of this manual. The projects are organized by budget categories including (1) streets, (2) sewers, (3) water, (4) parks and recreation, and (5) miscellaneous. The allowable locations for each project are shown on the project list. Some projects are appropriate to an analysis area, some to a ward, and others to an entire jurisdiction. A few projects are restricted to a particular analysis area. In addition to specifying a location for the project, the list indicates the area that will be affected by the project. This is the area which will share in the services of the project, and the area in which the Capital Plant Index will be affected. If land is required for the project and it is not purchased this cycle by the Politicians, the computer will attempt acquisition of the required land through condemnation of market land from all available zoning categories. When no land is available the project will not be started.

For each project, there is also a range of costs. The lower end of the range reflects stop-gap measures while the higher end indicates high quality improvements. These figures represent the total dollar costs for the project except for land costs on those projects where land is required.

To obtain annual costs, the total must be divided by the number of years the project will run. "Cycles to Run" signifies the number of cycles required to construct the project and therefore, the number of cycles the Capital Budget will be charged for construction costs. For example, a project which costs $300,000 and runs for two (2) cycles will be amortized through two (2) installments of $150,000 each. A multi-year project which has been approved by the Politicians need not be resubmitted in subsequent cycles. It will automatically be continued for the number of years indicated on the project list.

Instructions: In the first column indicate the desired location for the Capital Project, and in the second column the project number. In the third column indicate the desired expenditure (which must fall within the range of costs shown on the project list). Finally, in the fourth column, record the number of acres the project will require. The number of acres need only be recorded if there are astrisks on the project list in the column labeled "Acres Required."

Example:

II. Recommendations for Capital Improvement Projects

Location	Project Number	Total Cost	Number of acres
AA 17	1	$9,000	0

III. RECOMMENDATIONS FOR SPECIAL PROGRAMS

The Planner may also recommend to the Politicians new or expanded governmental programs. These Special Programs differ from Capital Improvement Projects in that they primarily deal with social services and most of the costs are used to support personnel. However, in some cases facilities must be constructed or expanded to accommodate the Special Programs. In this case, a Capital Project will have to be requested also. (If you fail to remember, the computer will reject the program). Once the facilities are constructed they can continue to be used if, and when, the special program is renewed.

A complete list of special programs may be found in Chapter 6 of this manual. This is similar to the capital project list except that the cost indicated is an annual cost rather than a total cost. Again, once a special program has been initiated, it must be carried and paid for for at least the number of cycles specified on the program list. Special Programs are charged to the Politicians Operating Budget.

Instructions: In the first column indicate the desired location for the Special Program. In the second column indicate the program number, and in the third column indicate the annual cost.

Example:

III. Recommendations for Special Programs

Location	Program Number	Cost Per Year
AA 4	1	$20,000

Note that Capital Project 88 is required for this Special Program.

IV. REZONING APPLICATION

Implementation of the Land Use Plan may also be accomplished through the zoning ordinance which specifies the use to which any given parcel of land may be put. The zoning ordinance at the outset of the game is quite general: Single Family (R) land may be developed into any one of three price-density classes of houses (see Glossary under "Density"); Multi-Family (M) may be developed into either of two price density classes; Commercial (C) may be developed as either local or regional shopping facilities; Industrial (I) as either local or exogenous (see Glossary); Office (O); or Agricultural (A).

The Planner may choose to draft a more stringent ordinance which would specify permitted uses in more detail. The new ordinance, of course, would have to be approved by the Politicians. The amount of developed land and zoned vacant property for each analysis area existing after each cycle is found in the Planner's output in the table entitled "TOTAL PROPERTY DISTRIBUTION."

The Planner is responsible for processing all requests for rezoning from the other players. The Planner will supply rezoning forms to other players upon request and assist them in filling them out. The Planner will then initial the forms signifying his recommendation for approval or disapproval and submit them to the Politicians. He must then schedule an open hearing with the Politicians and notify all the players of the time and place of the hearing so that they may attend if they wish. The Politicians make the final decision by majority vote.

Aside from processing rezoning requests from others, the Planner may initiate, on his own, recommendations for rezoning of publicly owned land, market owned land, or land held by other players. If the land he proposes to rezone is owned by gamed Developers or Industrialists, he must notify them of his intent prior to submitting the form to the Politicians.

Note: When developed property is rezoned, it automatically becomes vacant.

Instructions: Fill out a separate rezoning sheet for each rezoning request. All sections must be filled out before the Politicians will consider the application. In section 1 indicate the owner of the property at the time of rezoning. Indicate the analysis area in section 2. The property being rezoned is either vacant or developed; therefore, in section 3 indicate the number of acres or units being rezoned in the appropriate column. (Developed residential property is in units--all other property is in acres.) In section 4 check the proposed zoning from among the six categories. Then in section 5 indicate, with your initials, whether you favor or oppose the proposal. If the majority of the appropriate Politicians favor the proposal, the rezoning will be approved.

V. REQUEST FOR A PLANNED UNIT DEVELOPMENT (PUD)

A proposal may be made to the Planner requesting a change in the density in an analysis area for a unique project. Usually this request is for a higher desnity than that specified by the density table found in the Glossary.

The Planner is responsible for processing all requests for density changes. The Planner will supply the appropriate form to other players upon request and assist them in filling out the form. The Planner will then initial the forms signifying his recommendation for approval or disapproval and submit them to the Politicians. He must then schedule an open hearing with the Politicians in the appropriate jurisdiction and notify all other players of the time and place. The Politicians make the final decision by majority vote.

Instructions: Fill out a separate form for each planned unit development. Indicate the owner, the analysis area where the development will take place, the number of units to be built. The old density can be found in the Glossary. Indicate in section 5 the new density change. Section 6 will be filled out by the Developer indicating his reasons for the requested change. Then, in section 7, indicate, with your initials, whether you favor or oppose the proposal. If the majority of the appropriate Politicians favor the proposal, the proposal will be approved.

VI. NEWS RELEASE

Each cycle you should report your activities to the community. This is accomplished partially by making a news release to the News Media.

Instructions: Develop a news release or publication. Present the news release to the representative of the News Media.

Example:

Planner's News Release

Next cycle the Planners will complete the Master Plan. We would like to have citizens' input into the decision-making process. We are holding a public hearing next cycle for your inputs.

CHAPTER 5

Worksheet

ELITE OPINION POLL

Role________________ Cycle Number________

Issue No.	Alternative

Central City Planner ( )

County Planner ( )

Cycle #_____

II. Recommendations for Capital Improvement Projects

Location*	Project Number*	Total Cost*	Number of acres*

III. Recommendations for Special Programs

Location*	Program Number*	Cost Per Year

Rezoning Application

Cycle _____

1. OWNER AT THE TIME OF REZONING:*

   Developer: #1___ #2___ #3___ #4___ #5___ #6___ #7___

   Industrialist: #1___ #2___ #3___ #4___ #5___ #6___ #7___

   Central City Politician__ County Politician__ General Market__

---

2. ANALYSIS AREA:* #____

---

3. PRESENT LAND USE:*

If Vacant:	# Acres	If Developed:	# Units
1. R(single-family)	_____	1. R-1(low den., high cost)	_____
2. M(multiple-family)	_____	2. R-2(med. den., med. cost)	_____
3. C (commercial)	_____	3. R-3(high den., low cost)	_____
4. I (industrial)	_____	4. M-1(low den., high cost)	_____
5. O (office)	_____	5. M-2(med. den., low cost)	_____
6. A (agricultural)	_____		
			# Acres
Other (please specify)		6. CL (commercial local)	_____
_____		7. CR (commercial regional)	_____
_____		8. IL (local industry)	_____
_____		9. IX (exogenous industry)	_____
_____		10. O (office)	_____
_____		11. A (active farming)	_____

---

4. PROPOSED ZONING:*

1. R (single-family residential)	____	4. I (industrial)	____
2. M (multiple-family residential)	____	5. O (office)	____
3. C (commercial)	____	6. A (agricultural)	____

---

5. PLANNERS RECOMMENDATION (initials) — POLITICIANS DECISION (Signatures)

YES	NO		
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Request for A Planned Unit Development

(Note: Separate Applications Required for Each Development)

Cycle #_____

(1) OWNER:*

Developer #1___ #2___ #3___ #4___ #5___ #6___ #7___

---

(2) ANALYSIS AREA:*
#_____

---

(3) TYPE OF DEVELOPMENT:*

	#Units to be Built*
1. R-1 (low density, high cost)	_____
2. R-2 (med. density, med. cost)	_____
3. R-3 (high density, low cost)	_____
4. M-1 (low density, high cost)	_____
5. M-2 (med. density, low cost)	_____

---

(4) OLD DENSITY: _____ ~~Units~~/Acre (See Glossary)

---

(5) DENSITY REQUESTED:* _____ Units/Acre

---

(6) REASONS FOR CHANGE: _____

_____

_____

---

(7)

PLANNERS RECOMMENDATION (initials)		POLITICIANS DECISION (signatures)	
YES	NO		
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Cycle No. _____ _____
(Name of the submitting role)

NEWS RELEASE

The following is submitted to the
News Media for possible publication.

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Editors Recommendation: PRINT _____ TELEVISE _____

INVESTIGATE FURTHER OR REWRITE _____

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Cycle No. _____ _____
(Name of the submitting role)

NEWS RELEASE

The following is submitted to the
News Media for possible publication.

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_____

Editors Recommendation: PRINT _____ TELEVISE _____

INVESTIGATE FURTHER OR REWRITE _____

CHAPTER 6

Background Information

Chapter 6

BACKGROUND INFORMATION FOR PLANNER ROLE

Project Lists

A "shopping list" of Capital Improvement Projects and Special Programs that are available for implementation by the Politicians can be found on the Project List. The projects are organized by budget categories including: (1) streets, (2) sewers, (3) water, (4) parks and recreation, and (5) miscellaneous. The allowable locations for each project are shown on the project list. Some projects are appropriate to an analysis area, some to a ward, and others to any entire jurisdiction. A few projects are restricted to a particular analysis area. In addition to specifying a location for the project, the list indicates the area that will be affected by the project. This is the area which will share in the services of the project, and the area in which the Capital Plant Index will be affected. Another column indicates if any land will be required to initiate the project.

For each project, there is also a range of costs. The lower end of the range reflects stop gap measures while the higher end indicates high quality improvements. These figures represent the total dollar costs for the project. To obtain annual costs, the total must be divided by the number of years the project will run, i.e., how long to complete construction of the project. For example, a project which costs $300,000 and runs for two (2) cycles will be amortized through two (2) installments of $150,000 each. The final column will indicate whether or not this particular project could be funded through a revenue bond.

Also included at the end of the Project List are the Special Programs that the Planners may recommend. These Special Programs differ from Capital Improvement Projects in that they primarily deal with social services and most of the costs are used to support personnel. However, in some cases, facilities must be constructed or expanded to accommodate the special programs. In this case, a capital project will have to be requested also. Once the facilities are constructed they can continue to be used if, and when, the special program is renewed. The cost of the special program is similar to the capital project list except that the cost indicated is an annual cost rather than a total cost.

This is the annotated Project List which contains both Capital Improvement Projects and Special Programs. Check with Game Overall Director for any changes to this list.

PROJ NUMB	LOCATED IN	CPI IMPACT	ACRES REQ'D	BUDGET CATEGORY	TITLE	CYCLES TO RUN	TOTAL DOLLAR COST MINIMUM	MAXIMUM	REV. BOND
1	ANY AA	AA	0.0	STREETS	RESURFACING OF NEIGHBORHOOD STREETS	1	$ 6000.	$ 10000.	NO
2	ANY AA	AA	0.0	STREETS	RESURFACING OF SECONDARY STREETS	1	$ 50000.	$ 75000.	NO
3	ANY WARD	WARD	0.0	STREETS	REPAIR, RESURFACE PRIMARY STREETS	1	$ 100000.	$ 150000.	NO
4	ANY AA	AA	0.0	STREETS	WIDEN SECONDARY STREET	1	$ 90000.	$ 120000.	NO
5	ANY AA	WARD	0.0	STREETS	WIDEN PRIMARY THOROUGHFARE	2	$ 300000.	$ 400000.	NO
6	ANY AA	AA	0.0	STREETS	CONSTRUCT NEIGHBORHOOD STREETS	2	$ 35000.	$ 50000.	NO
7	ANY AA	AA	0.0	STREETS	CONSTRUCT SECONDARY STREET	2	$ 175000.	$ 225000.	NO
8	ANY AA	WARD	0.0	STREETS	CONSTRUCT PRIMARY STREET SEGMENT	2	$ 500000.	$ 750000.	NO
9	ANY AA	WARD	0.0	STREETS	CONSTRUCT EXPRESSWAY FEEDER STREET	4	$ 170000.	$ 220000.	NO
10	ANY AA	AA	0.0	STREETS	INSTALL NEIGHBORHOOD STREET LIGHTS	1	$ 20000.	$ 30000.	NO
11	ANY AA	AA	0.0	STREETS	NEW AREA-WIDE STREET LIGHTING	1	$ 50000.	$ 70000.	NO
12	ANY WARD	WARD	0.0	STREETS	NEW WARD-WIDE STREET LIGHTING SYSTEM	1	$ 150000.	$ 250000.	NO
13	ANY AA	AA	0.0	STREETS	NEIGHBORHOOD SIDEWALK CONSTRUCTION	1	$ 20000.	$ 50000.	NO
14	ANY AA	AA	0.0	STREETS	INSTALL TRAFFIC SIGNALS AT MAIN INTERSECTIONS	1	$ 12000.	$ 20000.	NO
15	ANY WARD	WARD	0.0	STREETS	PRIMARY STREETS - TRAFFIC SIGNAL SYSTEM	1	$ 50000.	$ 60000.	NO
16	ANY AA	AA	0.0	STREETS	EXPAND AND RENOVATE BRIDGE	1	$ 150000.	$ 200000.	NO
17	ANY AA	AA	0.0	STREETS	BUILD NEW BRIDGE	3	$ 250000.	$ 350000.	NO
18	ANY AA	AA	0.5	STREETS	PARKING LOT PAVING AND MARKING	1	$ 2000.	$ 4000.	YES
19	ANY AA	AA	2.0	STREETS	CONSTRUCT SMALL PARKING STRUCTURE	2	$ 500000.	$ 750000.	YES
20	ANY AA	AA	3.5	STREETS	CONSTRUCT LARGE PARKING STRUCTURE	3	$ 1000000.	$ 2000000.	YES
21	ANY AA	WARD	****	STREETS	EXPRESSWAY SEGMENT - STATE/FED FINANCING	3	$ 100000.	$10000000.	NO
30	ANY AA	AA	0.0	SEWERS	NEIGHBORHOOD SANITARY SEWER REPAIRS	1	$ 25000.	$ 30000.	NO
31	ANY AA	AA	0.0	SEWERS	NEIGHBORHOOD STORM SEWER REPAIRS	1	$ 20000.	$ 25000.	NO
32	ANY AA	AA	0.0	SEWERS	SANITARY SEWER TRUNKLINE REPAIRS	1	$ 45000.	$ 55000.	NO
33	ANY AA	AA	0.0	SEWERS	STORM SEWER TRUNKLINE REPAIRS	1	$ 40000.	$ 50000.	NO
34	ANY WARD	WARD	0.0	SEWERS	REPAIRS TO SANITARY INTERCEPTOR SYSTEM	1	$ 200000.	$ 275000.	NO
35	ANY WARD	WARD	0.0	SEWERS	REPAIRS TO STORM SEWER INTERCEPTORS	1	$ 185000.	$ 220000.	NO
36	ANY AA	AA	0.0	SEWERS	EXPAND SANITARY SEWER CAPACITY	1	$ 70000.	$ 300000.	NO

a USE THESE NUMBERS ON PLANNERS AND POLITICIANS WORKSHEETS.

b BE SURE TO SPECIFY IN WHICH ANALYSIS AREA, WARD, OR JURISDICTION YOU WANT THE PROJECT TO BE PLACED. NOTICE THAT SOME PROJECTS MUST BE LOCATED IN CERTAIN AA'S E.G. 101, 103, ETC.

c CPI IMPACT: (SEE CAPITAL PLANT INDEX IN YOUR GLOSSARY.) THIS COLUMN INDICATES THE AREA BENEFITTED BY EACH PROJECT, EITHER THE SPECIFIC AREA IN WHICH THE PROJECT IS PLACED OR THAT AREA PLUS A LARGER SURROUNDING AREA AS WELL.

d ADDITIONAL LAND SHOULD BE PURCHASED IF CITY OR COUNTY DOES NOW OWN ENOUGH VACANT ACREAGE; OTHERWISE LAND WILL BE PURCHASED AUTOMATICALLY FOR THE PROJECT, BUT NOT AT THE BEST PRICES. AN ASTERISK IN THIS COLUMN MEANS THAT YOU WILL HAVE TO SUPPLY THE NUMBER OF ACRES.

e THESE CATEGORIES APPEAR ALSO ON OTHER CPI TABLES WHICH REPORT THE STATUS OF EACH ANALYSIS AREA (SEE PLANNERS OUTPUT).

f DESCRIPTION OF THE PROJECT

g SHOW NUMBER OF CYCLES (YEARS) TO COMPLETE CONSTRUCTION OF EACH PROJECT.

h INDICATES TOTAL COST OF EACH PROJECT, NOT ANNUAL. RANGE OF COSTS INDICATES LOW QUALITY TO HIGH QUALITY PROJECT. ANNUAL COST=TOTAL COST DIVIDED BY CYCLES TO RUN.

OBJ NB	LOCATED IN	CPI IMPACT	ACRES REQ'D	BUDGET CATEGORY	TITLE	CYCLES TO RUN	TOTAL DOLLAR COST MINIMUM	MAXIMUM	REV. BOND
37	ANY AA	AA	0.0	SEWERS	EXPAND STORM SEWER CAPACITY	1	$ 50000.	$ 200000.	NO
38	ANY WARD	WARD	0.0	SEWERS	EXPAND SANITARY INTERCEPTOR SYSTEM	2	$ 150000.	$ 400000.	NO
39	ANY WARD	WARD	0.0	SEWERS	EXPAND STORM SEWER INTERCEPTOR SYSTEM	2	$ 100000.	$ 300000.	NO
40	ANY AA	AA	0.0	SEWERS	CONSTRUCT NEW NEIGHBORHOOD SANITARY SEWER	1	$ 50000.	$ 60000.	YES
41	ANY AA	AA	0.0	SEWERS	CONSTRUCT NEW NEIGHBORHOOD STORM SEWER	1	$ 30000.	$ 40000.	NO
42	ANY AA	AA	0.0	SEWERS	CONSTRUCT NEW SANITARY SEWER TRUNKLINE	2	$ 350000.	$ 450000.	YES
43	ANY AA	AA	0.0	SEWERS	CONSTRUCT NEW STORM SEWER TRUNKLINE	2	$ 200000.	$ 260000.	NO
44	ANY WARD	WARD	0.0	SEWERS	CONSTRUCT NEW SANITARY SEWER INTERCEPTOR	3	$ 600000.	$ 750000.	YES
45	ANY WARD	WARD	0.0	SEWERS	CONSTRUCT NEW STORM SEWER INTERCEPTOR	3	$ 400000.	$ 500000.	NO
46	ANY JUR	JUR	[illegible]	SEWERS	UPGRADE SEWAGE TREAT. PLANT - SECONDARY TREAT	3	$ 250000.	$ 350000.	NO
47	ANY JUR	JUR	5.0	SEWERS	CONVERT SECONDARY TREAT. PLANT TO TERTIARY TR	4	$ 2500000.	$ 4000000.	NO
48	ANY JUR	JUR	1.0	SEWERS	EXPAND SEWAGE TREAT. PLANT CAPACITY BY 10 MGD	2	$ 3500000.	$ 5000000.	NO
49	ANY JUR	JUR	3.0	SEWERS	EXPAND SEWAGE TREAT. PLANT CAPACITY BY 25 MGD	3	$ 6500000.	$10000000.	NO
50	ANY AA	AA	0.0	WATER	MAJOR REPAIRS TO NEIGHBORHOOD WATER MAINS	1	$ 20000.	$ 35000.	NO
51	ANY AA	AA	0.0	WATER	EXPAND AREA WATER MAINS	3	$ 200000.	$ 275000.	YES
52	ANY AA	AA	0.0	WATER	CONSTRUCT NEW NEIGHBORHOOD WATER MAINS	1	$ 40000.	$ 50000.	YES
53	ANY AA	AA	0.0	WATER	MAJOR NEW WATER MAIN CONSTRUCTION	2	$ 300000.	$ 400000.	YES
54	ANY JUR	JUR	0.0	WATER	RENOVATE WATER FILTRATION PLANT	1	$ 100000.	$ 150000.	YES
55	ANY JUR	JUR	0.0	WATER	EXPAND FILTRATION PLANT CAPACITY	2	$ 200000.	$ 350000.	YES
60	ANY AA	AA	0.5	PARK-REC	DEVELOP AND EQUIP TOT LOT	1	$ 5000.	$ 10000.	NO
61	ANY AA	AA	0.5	PARK-REC	DEVELOP AND EQUIP VEST-POCKET PARK	1	$ 15000.	$ 20000.	NO
62	ANY AA	JUR	10.0	PARK-REC	DEVELOP A NATURAL AREA PARK	2	$ 25000.	$ 100000.	NO
63	ANY AA	JUR	20.0	PARK-REC	DEVELOP A NATURE PRESERVE	2	$ 15000.	$ 25000.	NO
64	ANY AA	JUR	60.0	PARK-REC	NINE-HOLE GOLF COURSE DEVELOPMENT	3	$ 70000.	$ 150000.	NO
65	ANY AA	WARD	1.5	PARK-REC	CONSTRUCT PUBLIC SWIMMING POOL	1	$ 200000.	$ 350000.	YES
66	ANY AA	WARD	5.0	PARK-REC	DEVELOP BALL FIELD	1	$ 20000.	$ 30000.	NO
67	ANY AA	AA	1.0	PARK-REC	CONSTRUCT FOUR TENNIS COURTS	1	$ 20000.	$ 50000.	NO
68	ANY AA	WARD	1.0	PARK-REC	BUILD A PUBLIC ICE SKATING RINK	1	$ 20000.	$ 25000.	NO

IF A PROJECT CAN BE FUNDED BY A REVENUE BOND (SEE GLOSSARY), "YES" IS SHOWN HERE. IF NOT, THE PROJECT MUST BE FUNDED THROUGH EXISTING CAPITAL BUDGET FUNDS, GENERAL OBLIGATION BOND, SPECIAL GRANT, OR OTHER.

	LOCATED IN		CPI IMPACT	ACRES REQ'D	BUDGET CATEGORY	TITLE	CYCLES TO RUN	TOTAL DOLLAR COST MINIMUM	MAXIMUM	REV. BOND
69	ANY	AA	AA	0.0	PARK-REC	REPLACE PLAYGROUND EQUIPMENT	1	$ 5000.	$ 10000.	NO
70	ANY	AA	WARD	0.0	PARK-REC	REPLACE PLAYFIELD EQUIPMENT	1	$ 10000.	$ 25000.	NO
71	ANY	AA	WARD	0.0	PARK-REC	REPLACE PICNIC FACILITIES	1	$ 10000.	$ 25000.	NO
72	AA	7	JUR	0.0	PARK-REC	EXPAND AND RENOVATE CITY ZOO	1	$ 100000.	$ 350000.	NO
73	ANY	AA	JUR	0.5	PARK-REC	CONSTRUCT BOAT-LAUNCHING FACILITIES	1	$ 2000.	$ 15000.	YES
74	ANY	AA	CNTY	40.0	PARK-REC	DEVELOP NEW COUNTY PARK	1	$ 50000.	$ 100000.	NO
80	ANY	AA	WARD	0.0	MISCELL	EXPAND AND RENOVATE FIRE STATION	2	$ 100000.	$ 150000.	NO
81	ANY	AA	WARD	1.0	MISCELL	CONSTRUCT NEW FIRE STATION	3	$ 250000.	$ 350000.	NO
82	ANY	WARD	WARD	0.0	MISCELL	PURCHASE NEW FIRE TRUCK	1	$ 50000.	$ 100000.	NO
83	ANY	WARD	WARD	0.0	MISCELL	RENOVATE AND EXPAND POLICE STATION	2	$ 50000.	$ 100000.	NO
84	ANY	AA	WARD	1.5	MISCELL	CONSTRUCT MODERN, NEW POLICE STATION	3	$ 350000.	$ 500000.	NO
85	ANY	WARD	JUR	0.0	MISCELL	PURCHASE NEW POLICE-DISPATCHING EQUIPMENT	1	$ 50000.	$ 75000.	NO
86	ANY	AA	JUR	5.0	MISCELL	CONSTRUCT A NEW CITY HALL	5	$ 500000.	$ 1500000.	NO
87	ANY	AA	AA	0.0	MISCELL	NEIGHBORHOOD CENTER RENOVATION	1	$ 5000.	$ 15000.	NO
88	ANY	AA	AA	0.0	MISCELL	NEIGHBORHOOD CENTER EXPANSION	2	$ 50000.	$ 80000.	NO
89	ANY	AA	AA	1.0	MISCELL	NEIGHBORHOOD CENTER CONSTRUCTION	2	$ 100000.	$ 150000.	NO
90	ANY	AA	JUR	1.0	MISCELL	BUILD 4-UNIT PACKAGE LOW-RISE PUBLIC HOUSING	3	$ 60000.	$ 75000.	NO
91	ANY	AA	JUR	0.5	MISCELL	BUILD 10-UNIT PKG. HIGH-RISE PUBLIC HOUSING	3	$ 120000.	$ 140000.	NO
92	ANY	JUR	JUR	0.0	MISCELL	RENOVATE AND EXPAND PUBLIC LIBRARY	2	$ 250000.	$ 500000.	NO
93	ANY	AA	JUR	2.5	MISCELL	BUILD NEW COMMUNITY LIBRARY	3	$ 100000.	$ 1250000.	NO
94	ANY	AA	JUR	8.0	MISCELL	CONSTRUCT NEW CIVIC-CENTER - AUDITORIUM	4	$ 1500000.	$ 2000000.	NO
100	ANY	AA	CNTY	10.0	MISCELL	CONSTRUCT JUNIOR COLLEGE - COUNTY	3	$ 1250000.	$ 2500000.	NO
101	AA	7	CNTY	5.0	MISCELL	EXPAND AND RENOVATE GENERAL HOSPITAL - COUNTY	3	$ 2500000.	$ 4000000.	NO
102	ANY	AA	CNTY	20.0	MISCELL	BUILD NEW GENERAL HOSPITAL - COUNTY	5	$ 9000000.	$15000000.	NO
103	AA	7	CNTY	0.0	MISCELL	EXPAND, RENOVATE MENTAL HEALTH CLINIC- COUNTY	2	$ 750000.	$ 1500000.	NO
104	ANY	AA	CNTY	4.0	MISCELL	BUILD MENTAL HEALTH OUTPATIENT CLINIC- COUNTY	3	$ 70000.	$ 125000.	NO
105	AA	20	CNTY	0.0	MISCELL	EXPAND, RENOVATE JUVENILE HOME - COUNTY	2	$ 250000.	$ 500000.	NO
106	ANY	AA	CNTY	40.0	MISCELL	DEVELOP NEW CEMETERY - COUNTY	1	$ 15000.	$ 25000.	NO

PROJ NUMB	LOCATED IN	CPI IMPACT	ACRES REQ'D	BUDGET CATEGORY	TITLE	CYCLES TO RUN	TOTAL DOLLAR COST MINIMUM	MAXIMUM	REV. BOND
107	AA B	CNTY	0.0	MISCELL	EXPAND, RENOVATE SHERIFF STATION - COUNTY	2	$ 180000.	$ 250000.	NO
108	ANY AA	CNTY	1.0	MISCELL	BUILD SHERIFF'S SUBSTATION - COUNTY	3	$ 400000.	$ 600000.	NO
109	AA 29	CNTY	0.0	MISCELL	AIRPORT RUNWAY EXPANSION - COUNTY	3	$ 300000.	$ 500000.	NO
110	AA 29	CNTY	0.0	MISCELL	INSTALL RADAR FOR AIRPORT - COUNTY	1	$ 350000.	$ 500000.	NO
111	AA 29	CNTY	0.0	MISCELL	AIRPORT FACILITIES EXPANSION	2	$ 60000.	$ 90000.	NO
112	AA B	CNTY	0.0	MISCELL	EXPAND, RENOVATE COUNTY COURT HOUSE	2	$ 200000.	$ 400000.	NO
113	AA B	CNTY	0.0	MISCELL	EXPAND AND RENOVATE COUNTY OFFICE BUILDING	2	$ 250000.	$ 500000.	NO
114	ANY AA	JUR	0.8	MISCELL	CONSTRUCT SMALL COUNTY OFFICE BUILDING	2	$ 125000.	$ 200000.	NO
121	ANY AA	WARD	2.0	MISCELL	200 TONS/DAY MUNICIPAL INCINERATOR & CONTROLS	1	$ 2000000.	$ 2300000.	NO
122	ANY AA	WARD	10.0	MISCELL	OPEN DUMP, 2000 TONS/DAY	1	$ 15000.	$ 25000.	NO
123	ANY AA	WARD	5.0	MISCELL	SANITARY LAND FILL- CLASS 1, 25,000 TON CAP.	1	$ 50000.	$ 60000.	NO
124	ANY AA	WARD	99.0	MISCELL	SANITARY LAND FILL-CLASS 2, 550,000 TON CAP.	1	$ 210000.	$ 220000.	NO
125	ANY AA	WARD	20.0	MISCELL	SANITARY LAND FILL-CLASS 3, 350,000 TON CAP.	1	$ 49000.	$ 52000.	NO
126	ANY AA	WARD	2.0	MISCELL	200 TONS/DAY TRANSFER STATION & TRUCK	1	$ 360000.	$ 400000.	NO
127	ANY WARD	WARD	0.0	MISCELL	TWO REFUSE COLLECTION TRUCKS, TYPE 1	1	$ 10000.	$ 15000.	NO
128	ANY WARD	WARD	0.0	MISCELL	TWO REFUSE COLLECTION TRUCKS, TYPE 2	1	$ 24000.	$ 30000.	NO
129	ANY WARD	WARD	0.0	MISCELL	TWO REFUSE COLLECTION TRUCKS, TYPE 3	1	$ 16000.	$ 23000.	NO
130	ANY WARD	WARD	0.0	MISCELL	METHANE GAS/LEACHATE REMOVAL SYSTEM	1	$ 125000.	$ 175000.	NO

SPECIAL PROGRAM	AVAILABLE FOR	CYCLES TO RUN	TITLE	COST PER YEAR	CAPITAL PROJECT ALSO REQUIRED
1	ANY AA	3	SUMMER RECREATION PROGRAM FOR POOR CHILDREN	$ 20000.	88
2	ANY AA	3	PARKWAY TREE-PLANTING PROGRAM	$ 15000.	
6	ANY WARD	3	DAY-CARE CENTER FOR CHILDREN OF WORKING MOTHERS	$ 50000.	89
10	ANY JUR	3	SUMMER CAMP PROGRAM FOR DISADVANTAGED YOUTH	$120000.	
12	ANY JUR	3	POLICE CIVILIAN REVIEW BOARD	$ 12000.	
13	ANY JUR	5	POLICE-COMMUNITY RELATIONS BUREAU	$ 15000.	
14	ANY JUR	3	RENT SUPPLEMENT PROGRAM FOR POOR FAMILIES	$200000.	
15	ANY JUR	4	MAJOR RETRAINING PROGRAM FOR UNEMPLOYED	$125000.	
16	ANY JUR	2	INTENSIFIED BUILDING CODE ENFORCEMENT PROGRAM	$110000.	
17	ANY JUR	3	RAT ERADICATION PROGRAM	$100000.	
18	ANY JUR	2	SUBSIDIZING OF CITY BUS LINE	$200000.	
19	ANY JUR	4	EXPAND JUVENILE COURT PROGRAM	$ 50000.	
20	ANY JUR	3	SUPPORT OF RIVER BEAUTIFICATION COMMITTEE	$ 5000.	
21	ANY JUR	4	DUTCH ELM DISEASE TREE SPRAYING PROGRAM	$ 50000.	
30	COUNTY	3	VISITING NURSE PROGRAM FOR POOR FAMILIES	$ 50000.	
32	COUNTY	2	FAMILY-TO-FAMILY VOLUNTEER WELFARE PROGRAM	$ 20000.	
33	COUNTY	10	INTENSIFIED MEAT INSPECTION PROGRAM	$ 40000.	
36	COUNTY	4	MATERNITY AND PEDIATRICS CLINIC PROGRAM	$100000.	114
37	COUNTY	2	GERIATRICS CLINIC PROGRAM	$150000.	
38	COUNTY	4	PSYCHIATRIC OUTPATIENT CLINIC PROGRAM	$100000.	104

j USE THESE SPECIAL PROGRAM NUMBERS FOR PLANNERS AND POLITICIANS WORKSHEETS.

k INDICATES WHERE A PROGRAM MAY BE LOCATED: EITHER AA-WIDE, JURISDICTION-WIDE, OR COUNTY-WIDE. BE SURE TO SPECIFY IN WHICH AA, WARD, OR JURISDICTION YOU WANT THE PROGRAM TO BE PLACED. NOTE THAT A "COUNTY" PROGRAM BENEFITS THE ENTIRE COUNTY AND CANNOT BE PLACED IN A SMALLER AREA.

l DESCRIPTION OF PROGRAM.

m CERTAIN SPECIAL PROGRAMS REQUIRE FACILITIES (HENCE A CAPITAL PROJECT LOCATED IN THE SAME AREA) IN ORDER FOR THE PROGRAM TO BE ENACTED. THESE CAPITAL PROJECTS MAY BE FOUND IN THE CAPITAL PROJECT LIST ABOVE. NOTE: IF A SPECIAL PROGRAM IS A CONTINUATION OF AN EXISTING PROGRAM, A NEW CAPITAL PROJECT IS NOT REQUIRED. DO NOT RESUBMIT MULTI-YEAR PROGRAMS EACH YEAR.

RAM	AVAILABLE FOR	CYCLES TO RUN	TITLE	COST PER YEAR	CAPITAL PROJECT ALSO REQUIRED
41	COUNTY	1	NOISE POLLUTION ABATEMENT ENFORCEMENT	$ 10000.	
42	COUNTY	1	PESTICIDE PUBLIC INFORMATION PROGRAM	$ 5000.	
43	COUNTY	1	RADIOLOGICAL HEALTH PROGRAM	$ 20000.	
44	COUNTY	1	MOSQUITO ABATEMENT PLAN	$ 30000.	
45	COUNTY	1	ANTI-LITTER CAMPAIGN	$ 6500.	
46	COUNTY	1	PLACEMENT OF LITTER RECEPTACLES IN DOWNTOWN AREA	$ 15000.	
47	COUNTY	1	MALICIOUS GRAFFITI REMOVAL FROM HISTORICAL SITES	$ 9000.	
48	COUNTY	1	VOLUNTARY NEIGHBORHOOD CLEANUP PROGRAM SUPPORT	$ 1500.	
49	COUNTY	1	PROGRAM TO REDUCE HEAVY MACHINERY NOISE	$ 4500.	
51	COUNTY	1	ENFORCEMENT PROGRAM TO PREVENT SOIL EROSION	$ 7500.	
52	COUNTY	1	RADIATION SAFETY PROGRAM	$ 10000.	
53	COUNTY	1	PROTECTION OF CRITICAL ECOLOGICAL AREAS PROGRAM	$ 3500.	
54	COUNTY	1	TOW AWAY PROGRAM FOR ABANDONED AUTOS	$ 12500.	
55	COUNTY	1	LICENSING FOR X-RAY TECHNICIANS	$ 3500.	
56	COUNTY	1	TREE PLANTING PROGRAM IN DOWNTOWN AREA	$ 10000.	

CHAPTER 7

References

Chapter 7

REFERENCES FOR PLANNER ROLE

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CHAPTER 8

Annotated Printout

The following pages represent the annotated printout for the Planners. The decisions are representative of the types of decisions that the Planners could make. Some of the rationale for making these decisions are explained in Chapter 4 of this manual.

a POTENTIAL DEMAND FOR DEVELOPED PROPERTY

AA	RESIDENTIAL: SINGLE R-1	SINGLE R-2	SINGLE R-3	MULTIPLE M-1	MULTIPLE M-2	NON-RESIDENTIAL: COMMERCIAL LOCAL	COMMERCIAL REGIONAL	INDUSTRIAL LOCAL	AA
CENTRAL CITY									
1	4	2	-1	1	-1	0.60	0.60	0.70	1
2	1	3	1	3	4	-1.20	-1.30	-1.40	2
3	2	3	3	2	3	1.50	1.00	1.10	3
4	-8	-22	-34	-16	-30	-3.10	-1.80	-3.20	4
5	0	3	6	2	5	2.00	1.70	2.10	5
6	2	4	3	2	3	3.30	1.90	2.40	6
7	3	2	2	2	1	-25.00	-13.00	-17.30	7
8	30	69	102	47	92	-1.40	-3.00	-4.20	8
9	13	10	1	7	1	6.40	3.40	4.60	9
10	2	4	5	3	4	-2.40	-1.40	-1.70	10
11	-2	2	1	2	1	4.50	2.50	3.10	11
12	-1	1	2	1	2	1.70	1.10	1.30	12
13	-1	0	1	-1	2	7.40	3.90	5.10	13
SUBURB									
17	-1	0	0	0	-1	3.20	1.80	2.30	17
18	2	4	2	2	2	13.90	7.20	9.80	18
19	3	0	0	0	0	16.50	8.50	11.10	19
TOWNSHIP 1									
23	62	131	154	95	130	3.30	1.90	2.40	23
24	11	28	40	19	35	4.20	2.30	2.90	24
25	36	66	78	47	67	8.10	4.30	5.60	25
26	2	2	0	2	-1	3.90	2.20	2.70	26
27	28	56	32	27	29	10.10	5.30	6.90	27
28	35	78	105	53	93	1.00	0.70	0.90	28
TOWNSHIP 2									
14	2	2	1	2	0	4.00	2.20	2.80	14
15	1	1	0	0	0	11.10	5.80	7.60	15
16	3	3	0	2	-1	10.60	5.50	7.20	16
20	-1	0	2	0	2	9.40	4.90	6.40	20
21	-1	0	1	0	1	3.20	1.80	2.30	21
22	1	1	0	0	-1	7.40	3.90	5.10	22
29	-1	0	1	0	1	7.90	4.10	5.40	29

a THIS TABLE REPRESENTS A MARKET SURVEY OF DEMAND FOR DEVELOPED PROPERTY. IT CAN BE VIEWED AS AN INDICATION OF THE RELATIVE GROWTH POTENTIAL OF EACH ANALYSIS AREA.

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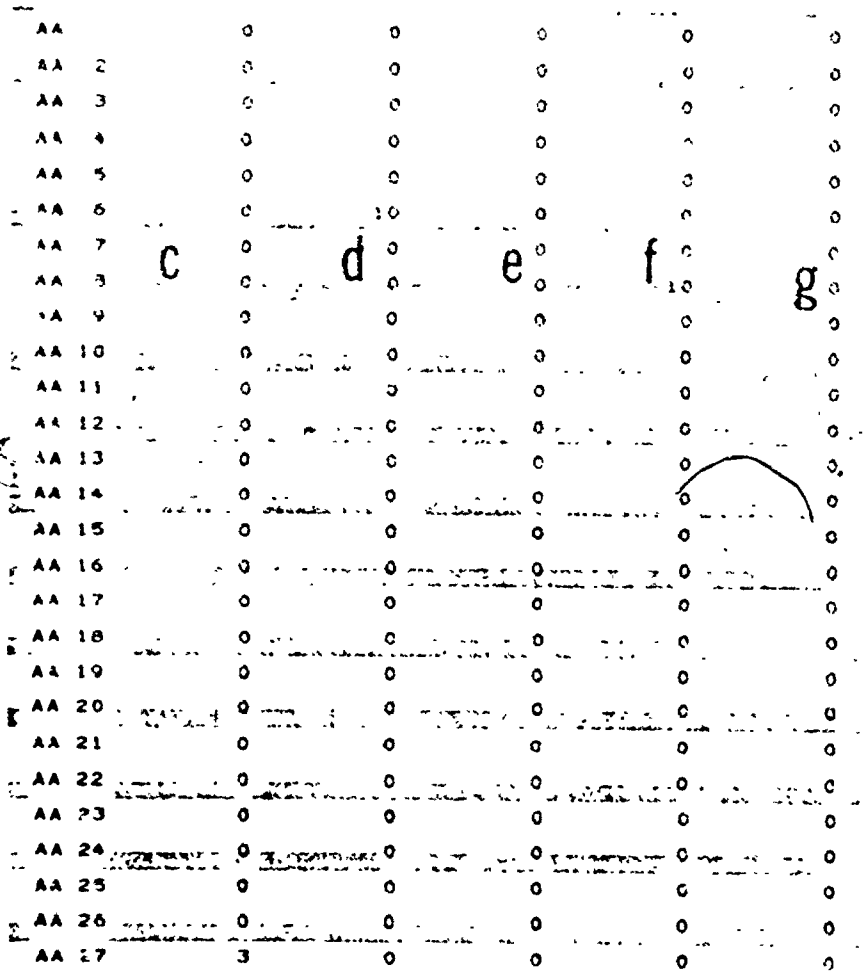
CYCLE 1. PAGE 5
TEAM 1

DISPLACED HOUSEHOLDS AFTER DEMOLITION



AA		0	0	0	0	0
AA	2	0	0	0	0	0
AA	3	0	0	0	0	0
AA	4	0	0	0	0	0
AA	5	0	0	0	0	0
AA	6	0	10	0	0	0
AA	7	0	0	0	0	0
AA	8	0	0	0	10	0
AA	9	0	0	0	0	0
AA	10	0	0	0	0	0
AA	11	0	0	0	0	0
AA	12	0	0	0	0	0
AA	13	0	0	0	0	0
AA	14	0	0	0	0	0
AA	15	0	0	0	0	0
AA	16	0	0	0	0	0
AA	17	0	0	0	0	0
AA	18	0	0	0	0	0
AA	19	0	0	0	0	0
AA	20	0	0	0	0	0
AA	21	0	0	0	0	0
AA	22	0	0	0	0	0
AA	23	0	0	0	0	0
AA	24	0	0	0	0	0
AA	25	0	0	0	0	0
AA	26	0	0	0	0	0
AA	27	3	0	0	0	0

b THIS TABLE INDICATES THE NUMBER OF HOUSEHOLDS WHICH WERE DISPLACED AS A RESULT OF REZONING REQUESTS

c HOUSEHOLD TYPE 1

d HOUSEHOLD TYPE 2

e HOUSEHOLD TYPE 3

f HOUSEHOLD TYPE 4

g HOUSEHOLD TYPE 5

HOUSEHOLD DISTRIBUTION CENSUS
AND PERCENT CHANGE FROM LAST CYCLE

AA	TYPE 1 NUM	TYPE 1 PERCENT	TYPE 2 NUM	TYPE 2 PERCENT	TYPE 3 NUM	TYPE 3 PERCENT	TYPE 4 NUM	TYPE 4 PERCENT	TYPE 5 NUM	TYPE 5 PERCENT	TOTAL NUM	TOTAL PERCENT
ENTRAL CITY												
1	549	0.73	503	[illegible]	[illegible]	0.41	364	0.0	46	0.0	1956	0.36
2	478	0.63	679	5.27	1214	0.66	1503	0.67	418	2.70	4292	0.05
3	530	0.57	536	1.27	871	0.58	895	0.79	182	5.17	3039	1.03
4	119	0.0	206	0.0	503	0.0	956	0.21	295	0.38	2049	0.15
5	240	0.84	363	1.11	1062	0.38	1582	0.25	350	1.16	3597	0.50
6	511	1.79	405	-0.73	595	1.19	657	0.77	167	1.21	2336	0.86
7	283	0.36	155	0.22	1016	0.10	1308	0.0	283	0.0	3342	0.09
8	192	0.0	259	0.0	576	0.0	1137	-0.87	364	0.0	2528	-0.39
9	359	13.55	155	34.78	168	41.19	132	51.72	35	483.33	848	32.09
10	919	6.79	1122	4.28	1827	2.70	1460	3.03	292	17.27	5620	4.11
11	359	0.84	465	0.43	967	0.21	1000	0.0	176	0.0	2967	0.24
12	238	1.71	421	3.68	1111	1.09	1314	0.92	271	7.54	3355	1.76
13	130	22.64	246	23.00	589	10.09	634	7.46	186	51.22	1785	14.86
UBURB												
17	710	0.27	300	0.67	218	0.93	184	0.55	30	0.0	1462	0.48
18	1321	0.08	509	0.33	374	0.27	326	0.0	70	1.45	2590	0.19
19	817	0.0	453	0.0	482	0.0	548	0.18	57	1.79	2359	0.08
OWNSHIP 1												
23	261	32.62	349	24.20	750	10.78	755	11.36	204	33.33	2319	17.60
24	59	34.09	78	25.81	226	8.42	335	6.01	102	14.61	780	11.27
25	123	26.80	74	27.55	181	10.37	209	1.95	28	0.0	615	11.41
26	175	15.89	167	34.68	279	20.78	282	16.53	110	115.69	1013	26.78
27	270	11.11	230	9.52	361	5.87	282	6.82	41	36.67	1184	8.82
28	74	155.17	103	71.67	205	28.13	345	37.35	121	40.70	848	34.82
OWNSHIP 2												
14	120	1.69	283	0.49	531	0.19	817	0.0	212	0.0	1983	0.21
15	346	0.29	205	0.0	232	0.0	377	0.0	129	0.0	1289	0.08
16	771	1.09	324	0.93	448	0.45	423	0.24	96	0.0	1662	0.61
20	571	-0.15	278	0.0	214	0.0	158	-0.64	27	8.00	1348	0.15
21	250	0.0	123	0.0	210	0.0	283	0.0	64	0.0	930	0.0
22	47	0.0	76	0.0	385	0.0	257	0.0	82	0.0	647	0.0
29	131	-0.76	148	0.0	345	0.0	488	0.0	119	0.0	-1251	-0.08

CENSUS TRACT PATTERN PENDING

[h] THIS TABLE SHOWS ACTUAL DISTRIBUTION, NOT POTENTIAL.

[i] HOUSEHOLD TYPES RANGE FROM MOST AFFLUENT (TYPE 1) TO LEAST AFFLUENT (TYPE 5). SEE GLOSSARY.

[j] PERCENTAGE CHANGE FROM THE PRECEDING CYCLE.

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CURRENT SOCIAL INDICATORS _ RANKING OF EACH ANALYSIS AREA AMONG ALL OTHERS

AA	CAPITAL PLANT INDEX	RANK	POPULATION SIZE PERSONS NO.	FAMILIES NO.	UNEMPLOYMENT NO. LABOR FORCE PERSONS P.C.	RANK	FAMILIES' INCOME UNDER $3000. PERCENT	RANK	DETERIORATED BUILDINGS PERCENT	RANK	NON-WHITE POPULATION PERCENT	RANK
CENTRAL CITY	K				m	K	m	K	m	K	m	K
1	1318.	15	7209	1956	93	2.8	6	2.4	27	[illegible]	25	0.0	16
2	855.	23	16144	4252	262	3.5	18	9.8	10	[illegible]	15	36.0	2
3	689.	26	11481	3039	170	3.2	13	6.0	18	[illegible]	18	35.4	3
4	228.	29	7393	2049	139	3.8	28	12.9	4	[illegible]	7	81.4	1
5	844.	24	13712	3597	234	3.7	23	9.7	11	[illegible]	11	10.6	5
6	1823.	7	8788	2336	128	3.2	11	7.1	16	[illegible]	21	21.0	4
7	1002.	20	12653	3342	210	3.5	20	8.5	14	[illegible]	14	6.3	6
8	373.	28	9778	2528	170	3.8	29	14.4	1	[illegible]	6	3.3	8
9	3120.	1	3162	848	36	2.6	4	4.1	23	[illegible]	29	0.0	12
10	1362.	13	20943	5620	310	3.2	10	5.2	21	[illegible]	20	0.0	10
11	1833.	6	11124	2967	174	3.3	15	5.9	19	[illegible]	16	0.0	11
12	2519.	2	12689	3355	211	3.5	19	8.1	15	[illegible]	12	0.0	15
13	1769.	8	6786	1785	113	3.6	22	10.4	8	0.8	7	0.0	13
TOTAL			142262.	37674.	2250								

PER-CAPITA ASSESSED VALUE $ 3195.

K SEE GLOSSARY. RANKING IS IN TERMS OF ALL 29 ANALYSIS AREAS; SMALLEST RANK NUMBER INDICATES HIGHEST CPI.

I SEE "CAPITAL PLANT INDICES BY CATEGORY" FOR A MORE DETAILED BREAKOUT OF CPI FOR EACH ANALYSIS AREA.

M PERCENTAGE

CAPITAL PROJECTS RECOMMENDED FOR CYCLE 2 IN JURISDICTION 1

PROJ NUMB	LOCATED IN	CPI IMPACT	ACRES USED	BUDGET CATEGORY	TITLE	FUNDED BY BOND	CYCLES TO RUN	TOTAL COST
					NONE WERE RECOMMENDED			

SPECIAL PROGRAMS RECOMMENDED FOR CYCLE 2 IN JURISDICTION 1

PROG NUM.	LOCATED IN	REQUIRED CAPITAL PROJECT	TITLE	FUNDED BY MILL	CYCLES TO RUN	ANNUAL COST
			NONE WERE RECOMMENDED			

n CAPITAL PLANT INDEX (SEE GLOSSARY); THIS COLUMN SHOWS THE EXTENT OF BENEFIT FROM EACH PROJECT. (SEE CAPITAL PROJECT LIST.)

O PLANNERS NORMALLY DO NOT RECORD BOND NUMBERS IN THEIR RECOMMENDATIONS.

p SEE CAPITAL PROJECT LIST FOR THE PRICE RANGE (OF QUALITY) FOR EACH PROJECT.

q INDICATES MULTI-YEAR PROJECT.

r SOME SPECIAL PROGRAMS REQUIRE CAPITAL FACILITIES TO HOUSE THEM. (SEE SPECIAL PROGRAM LIST.)

IMPORTANT NOTE: THIS IS A LIST OF RECOMMENDATIONS - ONLY POLITICIANS CAN ACTUALLY INITIATE PROJECTS OR PROGRAMS. IF A RECOMMENDATION ON THIS LIST FOR ANY CYCLE HAPPENS TO DUPLICATE A PROJECT OR PROGRAM ALREADY IN EFFECT DURING THAT CYCLE, THE RECOMMENDATION IS ASSUMED TO BE FOR A NEW AND DUPLICATE PROJECT OR PROGRAM.

S THIS TABLE IS ALSO PRINTED OUT FOR THE POLITICIANS AS YOUR "OFFICIAL," AS OPPOSED TO "INFORMAL," LIST OF RECOMMENDATIONS. IF THE POLITICIANS RESPOND TO YOUR RECOMMENDATIONS, THEY WILL START PROJECTS OR PROGRAMS FROM THIS LIST.

THE FOLLOWING CAPITAL PROJECTS RECOMMENDED FOR CYCLE 1 IN JURISDICTION 1
WERE NOT INITIATED BY THE POLITICIANS

PROJ NUMB	LOCATED IN	CPI IMPACT	ACRES USED	BUDGET CATEGORY	TITLE	FUNDED BY BOND	CYCLES TO RUN	TOTAL COST
1	AA 13	AA		STREETS	RESURFACING OF NEIGHBORHOOD STREETS	U	1	$**********
1	AA 8	AA		STREETS	RESURFACING OF NEIGHBORHOOD STREETS		1	$**********
1	AA 12	AA		STREETS	RESURFACING OF NEIGHBORHOOD STREETS		1	$**********
41	AA 2	AA		SEWERS	CONSTRUCT NEW NEIGHBORHOOD STORM SEWER		1	$**********
41	AA 12	AA		SEWERS	CONSTRUCT NEW NEIGHBORHOOD STORM SEWER		1	$**********
41	AA 13	AA		SEWERS	CONSTRUCT NEW NEIGHBORHOOD STORM SEWER		1	$**********
51	AA 18	AA		WATER	EXPAND AREA WATER MAINS		1	$**********
							3 *	$**********

THE FOLLOWING SPECIAL PROGRAMS RECOMMENDED FOR CYCLE 1 IN JURISDICTION 1
WERE NOT INITIATED BY THE POLITICIANS

PROG NUM.	LOCATED IN	REQUIRED CAPITAL PROJECT	TITLE	FUNDED BY MILL	CYCLES TO RUN	ANNUAL COST
1	AA 1	88	SUMMER RECREATION PROGRAM FOR POOR CHILDREN	U	3 *	$ 20000.
1	AA 3	88	SUMMER RECREATION PROGRAM FOR POOR CHILDREN		3 *	$ 20000.
1	AA 4	88	SUMMER RECREATION PROGRAM FOR POOR CHILDREN		3 *	$ 20000.
1	AA 8	88	SUMMER RECREATION PROGRAM FOR POOR CHILDREN		3 *	$ 20000.

PLANNERS MAY WISH TO RESUBMIT THIS PROGRAM IN THE NEXT CYCLE.

NOTE: THIS PAGE REPORTS CITY COUNCIL ACTIONS, DURING CYCLE 1, ON THE OFFICIAL (PRINTED OUT) RECOMMENDATIONS OF THE PLANNERS. THOSE RECOMMENDATIONS (ACTUALLY MADE DURING CYCLE 0) WERE PRINTED AND DELIVERED TO THE POLITICIANS IN CYCLE 1; THE POLITICIANS PICKED UP THE PLANNERS' CAPITAL PROJECTS.

YOU MAY WISH TO MONITOR THE LIST OF RECOMMENDATIONS CURRENTLY BEFORE CITY COUNCIL (SEE "CAPITAL PROJECTS RECOMMENDED FOR CYCLE 2") ANY OF THESE RECOMMENDATIONS NOT FOLLOWED IN CYCLE 2 WILL APPEAR ON THIS SHEET IN CYCLE 3.

NOTE ALSO THAT A PROJECT/PROGRAM RECOMMENDED FOR A CYCLE BUT ALREADY BEING FUNDED DURING THAT SAME CYCLE IS ASSUMED TO BE A RECOMMENDATION FOR AN ADDITIONAL PROJECT OR PROGRAM TO BE INITIATED DURING THE NEXT CYCLE; IF THE RECOMMENDATION IS NOT FOLLOWED FOR THE ADDITIONAL PROJECT, IT WILL APPEAR ON THIS SHEET.

V

WATER TREATMENT PLANT DATA
AVERAGE DAILY FLOW: 31.569 MILLION GALLONS/DAY
PLANT DESIGN CAPACITY: 42.000 MILLION GALLONS/DAY

SEWAGE TREATMENT PLANT DATA
AVERAGE DAILY FLOW: 21.990 MILLION GALLONS/DAY
PLANT DESIGN CAPACITY: 34.000 MILLION GALLONS/DAY
AVERAGE AMOUNT BYPASSED: 0.065 MILLION GALLONS/DAY
TREATMENT LEVEL: SECONDARY

W

X S.T.P. EFFLUENT CONCENTRATIONS AFTER TREATMENT

TEMP DEG. F.	D.O. MG/L	BOD MG/L	NUTRIENTS MG/L	T.D.S. MG/L	COLIFORM MPN/100ML
66.00	0.40	5.98	57.00	70.37	76597.31

V THIS TABLE HAS SUMMARY INFORMATION ON THE WATER TREATMENT PLANT AND SEWAGE TREATMENT PLANT

W IF THE PEAK FLOW EXCEEDS THE DESIGN CAPACITY RAW SEWAGE WILL BE POURED INTO THE RIVER

X EFFLUENT CONCENTRATIONS AFTER TREATMENT FROM THE SEWAGE TREATMENT PLANT

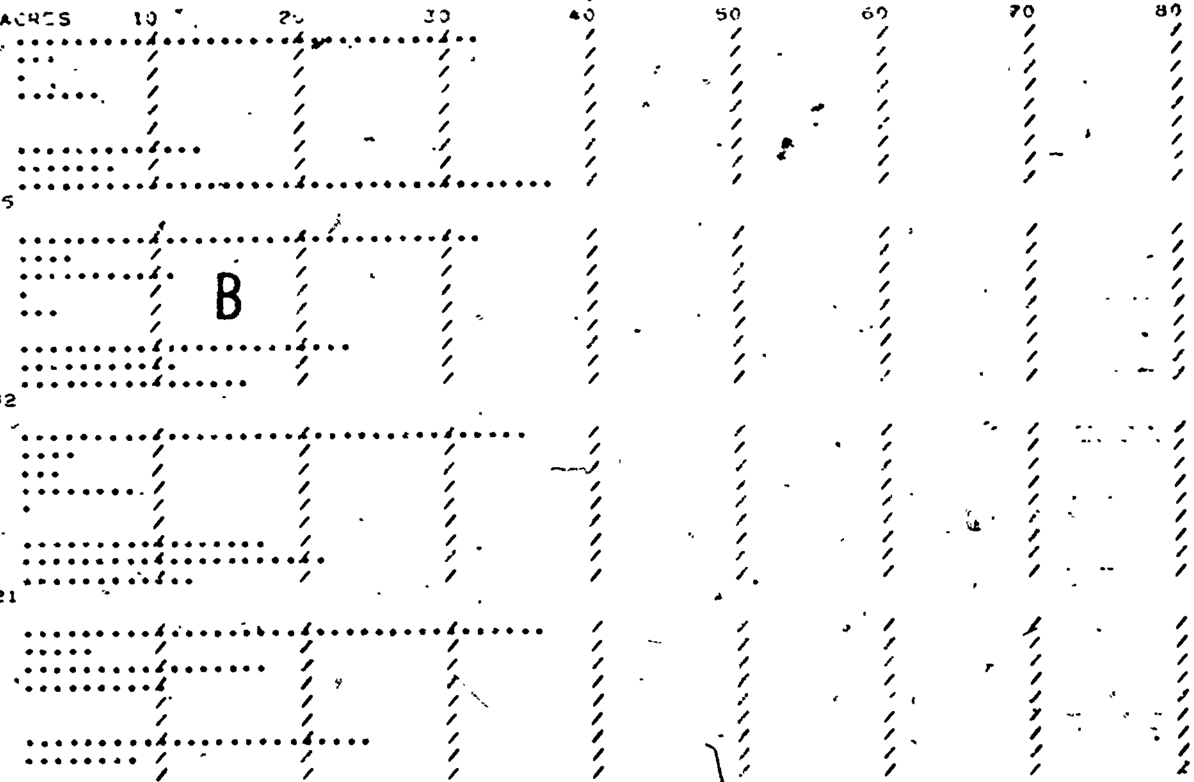
?RC-APEX -- 2/30/.?
?OTATED PRINTOUT FOR CHAPTER 8

Y PERCENTAGE DISTRIBUTION OF APEX LAND USE CATEGORIES CYCLE 1

AA	PROP DIST	PC OF TOTAL ACRES
1	RES SINGLE	32.21
1	RES MULT	3.0?
1	COMMERCIAL	1.30
1	INDUSTRIAL	5.55
1	OFFICE	0.12
1	AGRICULT.	0.0
1	STREET,ETC	13.25
1	PARKS,ETC	7.30
1	VACANT	37.24
TOTAL NUMBER OF ACRES= 1576.05		
2	RES SINGLE	31.95
2	RES MULT	4.14
2	COMMERCIAL	10.52
2	INDUSTRIAL	0.51
2	OFFICE	3.45
2	AGRICULT.	0.0
2	STREET,ETC	22.97
2	PARKS,ETC	10.90
2	VACANT	15.56
TOTAL NUMBER OF ACRES= 1495.82		
3	RES SINGLE	35.34
3	RES MULT	4.10
3	COMMERCIAL	2.79
3	INDUSTRIAL	7.62
3	OFFICE	0.56
3	AGRICULT.	0.0
3	STREET,ETC	16.92
3	PARKS,ETC	20.76
3	VACANT	11.90
TOTAL NUMBER OF ACRES= 1310.21		
4	RES SINGLE	35.52
4	RES MULT	5.47
4	COMMERCIAL	16.59
4	INDUSTRIAL	9.55
4	OFFICE	0.50
4	AGRICULT.	0.0
4	STREET,ETC	24.23
4	PARKS,ETC	7.94
4	VACANT	0.21
TOTAL NUMBER OF ACRES= 478.70		

Z

A



C

Y THE FOLLOWING TABLE GIVES A BREAKDOWN OF ALL MARKET OWNED LAND BY LAND USE TYPE

Z THE TYPE OF LAND USE

A PERCENT OF TOTAL ACRES

B A BAR GRAPH SHOWING THE PERCENTAGE OF ACRES USED

C TOTAL NUMBER OF ACRES

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CYCLE 1 PAGE 77
TEAM 1 E

	CENTRAL CITY	SUBURB	TOWNSHIP 1	TOWNSHIP 2	COUNTY
1. REVENUE					
ASSESSED VALUE	$ 442930944.	$ 61631760.	$ 75225072.	$ 58637936.	$ 638425344.
TAX MILLS (LOCAL)	44.67	58.31	38.16	38.16	4.00
TAX REVENUE (LOCAL)	$ 17411600.	$ 3199302.	$ 2193560.	$ 1709630.	$ 2553701.
NON-TAX REVENUE	$ 3575376.	$ 502950.	$ 48900.	$ 88960.	$ 1899689.
TOTAL REVENUE	$ 20986976.	$ 3702252.	$ 2242460.	$ 1758790.	$ 4453390.
COUNTY TAX MILLS	4.00	4.00	4.00	4.00	
COUNTY TAX REVENUE	$ 1771723.	$ 246527.	$ 300900.	$ 234552.	$ 2553701.
COUNTY TAX DIST (PERCEN	69.38	9.65	11.78	9.18	100.00
2. EXPENDITURES					
POLITICIANS	$ 9333479.	$ 1365794.	$ 240724.	$ 198427.	$ 4001920.
SCHOOLS	$ 11770030.	$ 2359820.	$ 2021752.	$ 1575956.	
TOTAL	$ 21103504.	$ 3725614.	$ 2262475.	$ 1774382.	$ 4001920.
EXPENDITURE PERCENTAGES					
POLITICIANS	44.23	36.66	10.64	11.18	
SCHOOLS	55.77	63.34	89.36	88.82	100.00
TOTAL	100.00	100.00	100.00	100.00	100.00

3. POPULATION - HOUSEHOLDS (BY HOUSEHOLD TYPES)	NUMB	PCNT	NUMB	PCNT	NUMB	PCNT	NUMB	PCNT	NUMB	PCNT
TYPE 1	4903.	13.01	2768.	43.18	962.	14.23	1936.	21.49	10569.	17.66
TYPE 2	5800.	15.40	1354.	21.12	1001.	14.81	1357.	15.06	9512.	15.89
TYPE 3	10988.	29.17	1074.	16.75	1982.	29.32	2185.	24.25	16229.	27.11
TYPE 4	12947.	34.37	1058.	16.50	2208.	32.67	2803.	31.11	19016.	31.77
TYPE 5	3036.	8.06	157.	2.45	606.	8.97	729.	8.09	4528.	7.57
TOTAL	37674.	100.00	6411.	100.00	6759.	100.00	9010.	100.00	59854.	100.00
(PERCENT OF COUNTY POP.	62.94		10.71		11.29		15.05			
POPULATION - PERSONS (BY HOUSEHOLD TYPES)										
TYPE 1	18376.	12.92	10374.	43.66	3606.	14.09	7254.	21.30	39612.	17.55
TYPE 2	20167.	14.18	4708.	19.81	3480.	13.60	4718.	13.85	33073.	14.65
TYPE 3	40040.	28.15	3914.	16.47	7222.	28.22	7962.	23.37	59138.	26.20
TYPE 4	49121.	34.53	4014.	16.89	8377.	32.73	10635.	31.22	72147.	31.97
TYPE 5	14558.	10.23	753.	3.17	2906.	11.36	3496.	10.26	21713.	9.62
TOTAL	142262.	100.00	23763.	100.00	25591.	100.00	34067.	100.00	225683.	100.00
(PERCENT OF COUNTY POP.	63.04		10.53		11.34		15.10			
4. EMPLOYMENT (BY TYPE)										
LOCAL COMMERCE	21922.	31.42	1030.	8.57	786.	9.18	1331.	13.81	25069.	25.07
REGIONAL COMMERCE	5104.	7.31	2643.	21.99	2865.	33.45	4913.	50.96	15525.	15.52
LOCAL INDUSTRY	138.	0.20	1025.	8.53	4717.	55.07	3204.	33.23	9084.	9.08
EXOG. INDUSTRY	33187.	47.56	0.	0.0	175.	2.04	0.	0.0	33362.	33.36
EXOG. OFFICE	9426.	13.51	7322.	60.92	23.	0.27	193.	2.00	16964.	16.96
TOTAL	69777.	100.00	12020.	100.00	8566.	100.00	9641.	100.00	100004.	100.00
(PERCENT OF COUNTY EMP.	69.77		12.02		8.57		9.64			

D INCLUDES SCHOOL TAX MILLS AS WELL AS NORMAL OPERATING, SPECIAL OPERATING, AND DEBT RETIREMENT MILLAGES.

E ALL COUNTY INCLUDING CENTRAL CITY.

5. CAPITAL PLANT TOTALS (BY CATEGORY)

	CENTRAL CITY DOLLARS	CENTRAL CITY PERCENT	SUBURB DOLLARS	SUBURB PERCENT	TOWNSHIP 1 DOLLARS	TOWNSHIP 1 PERCENT	TOWNSHIP 2 DOLLARS	TOWNSHIP 2 PERCENT
LOCAL GOVERNMENTS								
STREETS	$ 35542768.	40.21	$ 8012182.	45.33	$ 11371309.	64.79	$ 15173762.	68.85
SEWERS	$ 20656672.	23.37	$ 6023589.	34.13	$ 4679699.	26.66	$ 6045514.	27.43
WATER	$ 14253718.	16.13	$ 2423504.	13.71	$ 893316.	5.09	$ 196175.	0.89
PARKS,REC.	$ 2581529.	2.92	$ 143770.	0.80	$ 36670.	0.21	$ 28120.	0.13
MISCELLANEOUS	$ 15351984.	17.37	$ 1064189.	6.03	$ 570009.	3.25	$ 593750.	2.69
TOTAL	$ 86386656.	100.00	$ 17651232.	100.00	$ 17550976.	100.00	$ 22037280.	100.00
SCHOOLS								
ELEMENTARY	$ 10132699.	59.90	$ 1590393.	58.86	$ 2656199.	64.86	$ 3704999.	65.04
HIGH SCHOOL	$ 6782999.	40.10	$ 1111499.	41.14	$ 1440199.	35.16	$ 1991199.	34.96
TOTAL	$ 16915696.	100.00	$ 2701798.	100.00	$ 4096398.	100.00	$ 5696198.	100.00
COUNTY MISCELLANEOUS		$ 11670000.						

THIS TABLE RELATES TO "CAPITAL PLANT INDEX." (SEE GLOSSARY FOR EXPLANATION OF CAPITAL PLANT INDEX.) A MORE DETAILED BREAKOUT OF INDEX LEVELS APPEARS LATER. A LOW CPI FOR AN AREA MEANS INSUFFICIENT SERVICES AND FACILITIES FOR THAT AREA AND A LIKELY EMERGENCE OF RELATED SOCIAL AND HEALTH PROBLEMS.

TOTAL PROPERTY DISTRIBUTION AFTER CYCLE 1
(INCLUDES ALL GAME PLAYER HOLDINGS PLUS GENERAL MARKET)

		RESIDENTIAL					NON-RESIDENTIAL					
		SINGLE			MULTIPLE		COMMERCIAL		INDUSTRIAL		OFFICE	AGRICULT
AA	STATUS	R-1	R-2	R-3	M-1	M-2	LOCAL	REGIONAL	LOCAL	EXOG.	EXOG.	
1	DEVELOPED	426	485	363	369	312	0.70	19.75	34.34	52.07	1.92	0.0
	VACANT	479.60		11.11			2.56		91.49		5.13	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 115.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 0.0 ACRES										
		STREETS AND RIGHT-OF-WAY = 208.90 ACRES										
2	DEVELOPED	486	931	1155	674	1004	69.97	88.45	7.61	27.53	51.56	0.0
	VACANT	0.32		52.76			0.89		178.98		0.09	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 163.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 0.0 ACRES										
		STREETS AND RIGHT-OF-WAY = 343.60 ACRES										
3	DEVELOPED	464	710	712	524	630	1.50	35.00	31.75	80.63	7.35	0.0
	VACANT	87.20		0.00			0.29		68.97		2.20	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 272.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 0.0 ACRES										
		STREETS AND RIGHT-OF-WAY = 221.75 ACRES										
4	DEVELOPED	151	419	630	287	561	25.53	53.88	0.10	45.60	2.39	0.0
	VACANT	2.10		0.00			0.0		0.99		0.0	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 38.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 0.0 ACRES										
		STREETS AND RIGHT-OF-WAY = 116.00 ACRES										
5	DEVELOPED	297	779	1059	545	917	13.30	26.11	35.11	94.00	19.00	0.0
	VACANT	270.36		88.28			0.0		48.37		0.0	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 306.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 0.0 ACRES										
		STREETS AND RIGHT-OF-WAY = 294.91 ACRES										
6	DEVELOPED	397	555	531	396	468	75.49	101.04	19.02	0.0	8.00	462.30
	VACANT	637.12		78.14			6.70		3.20		2.79	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 115.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 2.00 ACRES										
		STREETS AND RIGHT-OF-WAY = 287.09 ACRES										
7	DEVELOPED	332	741	930	534	806	29.66	34.02	1.56	18.96	24.03	0.0
	VACANT	20.00		56.81			6.69		7.98		0.27	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 270.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 20.00 ACRES										
		STREETS AND RIGHT-OF-WAY = 229.90 ACRES										
[redacted]		206	512	772	349	700	73.66	86.29	73.09	83.61	21.86	0.0
		0.40		0.0			2.46		17.48		1.50	0.0
		PUBLIC AND QUASI-PUBLIC DEVELOPMENT = 154.00 ACRES										
		COUNTY BUILDINGS, PARKS, ETC. = 7.00 ACRES										

G DEVELOPED RESIDENTIAL LAND IS SHOWN IN UNITS; VACANT RESIDENTIAL AND ALL NON-RESIDENTIAL IS SHOWN IN ACRES.

H REMEMBER THAT SOME OR ALL VACANT LAND IN AN AREA MAY BE PRIVATELY OWNED AND THEREFORE NOT NECESSARILY AVAILABLE FOR PURCHASE.

I INCLUDES SIDEWALKS, LAND FOR UTILITY LINES, ETC.

J REFERS TO LAND FOR CHURCHES, CEMETERIES, ETC.

CAPITAL PLANT INDICES BY CATEGORY
AFTER CYCLE 1

AA	STREETS AMOUNT	STREETS INDEX	STREETS RANK	SEWERS AMOUNT	SEWERS INDEX	SEWERS RANK	WATER AMOUNT	WATER INDEX	WATER RANK	PARKS & RECREATION AMOUNT	PARKS & RECREATION INDEX	PARKS & RECREATION RANK	MISCELLANEOUS AMOUNT	MISCELLANEOUS INDEX	MISCELLANEOUS RANK
CENTRAL CITY															
1	2499304.	535.	21	1957189.	419.	12	930429.	199.	9	95950.	21.	11	667478.	143.	17
2	3172457.	358.	23	1655374.	187.	19	1166829.	132.	13	236550.	27.	9	1334955.	151.	9
3	2084534.	225.	27	1517719.	164.	21	1208439.	130.	14	239020.	26.	10	1334955.	144.	10
4	1226827.	87.	29	656165.	47.	26	563961.	40.	17	95950.	7.	15	667478.	48.	20
5	2509709.	307.	24	1825639.	199.	18	1185354.	145.	12	257260.	31.	7	1334955.	163.	8
6	3759592.	844.	13	1634759.	367.	13	1178704.	265.	5	210520.	47.	4	1334955.	300.	4
7	1753557.	304.	25	1487414.	258.	15	990795.	172.	11	218310.	38.	6	1334955.	231.	7
8	2721512.	152.	28	1334559.	75.	24	1079904.	60.	16	203870.	11.	14	1334955.	75.	15
9	978120.	854.	12	1114064.	972.	1	700286.	611.	1	113810.	99.	1	667478.	583.	1
10	4851175.	586.	20	2089619.	252.	16	1949344.	236.	6	382470.	46.	5	2002432.	242.	6
11	2795897.	686.	17	1844614.	452.	11	1269334.	311.	3	228190.	56.	2	1334955.	327.	2
12	4655428.	1107.	5	2897784.	689.	6	1477954.	352.	2	222660.	53.	3	1334955.	318.	3
13	2534694.	960.	9	841795.	319.	14	552371.	209.	8	76930.	29.	8	667478.	253.	5
SUBURB															
17	2763549.	969.	8	2204379.	773.	3	764655.	268.	4	54530.	19.	12	354730.	124.	12
18	2656627.	591.	19	2281804.	607.	8	1001870.	223.	7	68495.	15.	13	532095.	118.	13
19	2582004.	298.	26	1537384.	177.	20	653980.	75.	15	17765.	2.	22	177365.	20.	25
TOWNSHIP 1															
23	2525194.	801.	16	2269739.	720.	5	0.	0.	23	10070.	3.	19	166250.	53.	19
24	2060074.	1036.	6	0.	0.	27	0.	0.	27	0.	0.	27	142500.	72.	17
25	1402959.	1202.	3	562210.	482.	9	0.	0.	25	0.	0.	25	87086.	75.	14
26	2060549.	1419.	1	857445.	597.	7	0.	0.	26	0.	0.	26	870864.	60.	18
27	2258814.	484.	22	980305.	210.	17	893316.	191.	10	19000.	4.	18	87086.	19.	26
28	1063714.	901.	11	0.	0.	28	0.	0.	28	7600.	6.	16	0.	0.	28
TOWNSHIP 2															
14	2911464.	904.	10	357865.	111.	23	0.	0.	29	8550.	3.	21	237500.	74.	16
15	2171794.	816.	15	1235426.	472.	10	0.	0.	24	0.	0.	24	104500.	39.	23
16	2045777.	832.	14	1820104.	740.	4	83315.	34.	18	7600.	3.	20	104500.	42.	21
20	2912034.	1178.	4	2054564.	831.	2	61655.	25.	19	11970.	5.	17	522500.	21.	24
21	1615314.	608.	18	403655.	152.	22	28690.	11.	20	0.	0.	28	0.	0.	27
22	1130024.	1205.	2	0.	0.	29	0.	0.	22	0.	0.	23	0.	0.	29
29	2387349.	1031.	7	153900.	66.	25	22515.	10.	21	0.	0.	29	950000.	41.	22

K (SEE GLOSSARY)

L PUBLIC BUILDINGS, EQUIPMENT (FIRE TRUCKS, POLICE CARS, ETC.)

M NOTE: CAPITAL PLANT VALUES IN AN ANALYSIS AREA INCREASE BY THE VALUE OF NEW CAPITAL PROJECTS STARTED IN THAT AREA; IF THE POPULATION IN THE AREA REMAINS STABLE, WE MAY ASSUME THAT THE CPI WILL TEND TO RISE. HOWEVER, YOU SHOULD REMEMBER THAT CAPITAL PLANT VALUES DEPRECIATE AT A STANDARD RATE OF 5% EACH CYCLE ALSO, SO THAT A GAIN IN CAPITAL PLANT VALUE MUST OVERCOME DEPRECIATION IN ADDITION TO IMPROVING THE EXPENDITURE LEVEL IS AN AREA.

The following pages include the METRO-APEX NEWS which will give you a basis regarding some of the decisions made for Cycle 1. It will also provide you with a history of some of the problems in APEX County.

a

METRO-APEX NEWS

TEAM 1, EDITION 1 — SUNDAY, JUNE 30, 1974 — ANNOTATED PRINTOUT FOR CHAPTER 8

N A T I O N A L   N E W S   H E A D L I N E S b

AUTOMOBILE PRODUCTION RECOVERS FROM SLUMP, HIGHEST SALES IN HISTORY PREDICTED.

SINGLE REAL ESTATE DEVELOPER SPEAKS IN FAVOR OF OPEN HOUSING AT CONGRESSIONAL COMMITTEE MEETING--OTHERS NEGATIVE.

U. S. CENSUS BUREAU ISSUES REPORT STATING THAT NET ANNUAL ADDITIONS TO THE HOUSING STOCK HAVE DECLINED TO 800,000 UNITS LEAVING A GAP OF 200,000 BETWEEN NEW UNITS ADDED AND NET NEW FAMILY FORMATIONS. CENTRAL CITY HOUSING SITUATION CRITICAL. c

DEFENSE SPENDING IS AGAIN AT AN ALL TIME HIGH--AS CONGRESSIONAL CRITICS WARN OF GUNS VS. BUTTER CONFLICT.

U. S. UNEMPLOYMENT RATE THE PAST YEAR WAS 4.1 PERCENT

S T A T E   N E W S   H E A D L I N E S b

[illegible] MARCH ON THE STATE CAPITOL INFURIATES LAWMAKERS WHO SAY THEY WON'T BOW TO PRESSURE GROUP TACTICS.

STATE [illegible] PLANS TO WORK WITH COUNTY HEALTH AGENTS TO CRACK DOWN ON UNSAFE SEPTIC TANKS IN [illegible] METROPOLITAN AREA IN THE STATE. OLD SEPTIC TANKS AND INADEQUATE SEWER SYSTEMS MAKE SUB-DIVISION DEVELOPMENTS DANGEROUS.

EDUCATORS PRESS STATE FOR GREATER AID TO LOCAL SCHOOL DISTRICTS, ARGUING WE'RE FALLING BEHIND THE NATIONAL LEADERS.

APEX CITED AS ONE OF THE WORST MIDDLE-SIZED CITIES WHO HAVE LET CAPITAL PLANT INVESTMENTS IN THE DOWNTOWN DETERIORATE. c

DEMOCRAT-REPUBLICAN DEADLOCK IN STATE SENATE IS BROKEN AS GOVERNOR INTERVENES TO FORCE AN EDUCATION-WELFARE PACKAGE.

WELFARE MOTHERS IN TEN COUNTIES SIT IN TO PROTEST LOW ALLOCATIONS FROM STATE AND COUNTIES. TAXPAYER ANGER OVER DEMONSTRATIONS IN STATE IS GROWING, MAKING INCREASED STATE WELFARE PAYMENTS UNLIKELY THIS YEAR.

L O C A L   N E W S   I T E M S b

a THE METRO-APEX NEWS IS PUBLISHED EACH CYCLE AND IS A PRIME SOURCE OF INFORMATION ABOUT CURRENT PRODLEMS AND EVENTS AND THEIR IMPACT ON APEX COUNTY.

b THE METRO-APEX NEWS FEATURES NATIONAL NEWS HEADLINES, STATE NEWS HEADLINES AND LOCAL NEWS ITEMS. THE "LOCAL NEWS ITEMS" ARE PRESENTED UNDER SUB-HEADINGS OF METROPOLITAN AND COUNTY, CENTRAL CITY, SUBURB, TOWNSHIP 1, TOWNSHIP 2, AND BUSINESS PAGE.

c NATIONAL AND STATE NEWS REFLECTS THE GENERAL STATE OF THE ECONOMY AND NEW GOVERNMENTAL POLICIES WHICH MAY IMPACT ON VARIOUS SEGMENTS OF THE APEX COMMUNITY.

d EACH YEAR CERTAIN ISSUES WILL APPEAR IN THE METRO-APEX NEWS WHICH REQUIRE DECISIONS FROM ALL ROLE PLAYERS. EACH ISSUE IS IDENTIFIED BY AN ISSUE NUMBER. THE ISSUES CONSIST OF A STATEMENT OF THE ISSUE AND SEVERAL PROPOSED ALTERNATIVE ACTIONS. EACH PLAYER SHOULD CHOOSE THE ALTERNATIVES HE FAVORS AND FILL OUT THE ELITE OPINION POLL OF HIS WORKSHEET.

e SOME ALTERNATIVES PROPOSE THE IMPLEMENTATION OF SPECIFIC PROJECTS. PROJECT NUMBERS SHOULD NOT BE CONFUSED WITH ISSUE NUMBERS.

f LOCAL NEWS ITEMS ARE IDENTIFIED BY THE ANALYSIS AREA IN WHICH THEY ORIGINATED.

g THE BUSINESS PAGE LISTS EXOFIRMS WHICH WOULD LIKE TO LOCATE IN APEX. THE FIRM WILL NORMALLY NOT LOCATE IN APEX UNLESS THE SPECIFIED CONDITIONS ARE MET.

h THE LOCATIONS PREFERED BY THE EXOFIRM ARE LISTED IN ORDER OF PREFERENCE, IE., AA 10 IS THE FIRST PREFERENCE, AA 25, SECOND CHOICE, ETC.

METROPOLITAN AND COUNTY

RUNWAY EXPANSION NEEDED FOR AREA AIRPLANE. COST SET AT $350,000. PROJECT NO. 109.

....PRECEDING IS ISSUE 4 POLITICIAN'S ULTIMATE DECISION BUT ELITE OPINION SOLICITED

---- ALTERNATIVE 1 FAVOR RUNWAY PROJECT 109

---- ALTERNATIVE 2 POSTPONE AND RECONSIDER

---- ALTERNATIVE 3 OPPOSE RUNWAY PROJECT 109

COUNTY ROAD COMMISSIONER REPORTS THAT HEAVY TRUCK CONDITIONS OF ST. JOHNS ASPHALT COMPANY WILL CAUSE AN INCREASE IN COSTS OF HIGHWAY CONSTRUCTION IN THE AREA. THIS MAY BE A POLICY ISSUE WHICH COULD ULTIMATELY MEAN HIGHER TAXES STATEWIDE.

STATE INSPECTOR LINKS DUST PROBLEM FROM DUSTY ROADS CEMENT PLANT HAS-FILLING OPERATION TO CAUSES OF SILICOSIS IN MINING OPERATIONS.

STATE LEGISLATURE FACES WAR OF ALL OPEN BURNING DUMPS. AREA SOLID WASTE MANAGER FACES MOUNTING PROBLEMS -- INADEQUATE INFORMATION, GROWING AMOUNTS OF WASTE, PUBLIC DISTRUST OF LANDFILLS, AND OUTDATED COLLECTION EQUIPMENT. AREA MAY BE BURIED IN ITS OWN TRASH.

AA 3 -
OLD TIME RESIDENT CLAIMS. "THIS SMATTER POLLUTION IS GETTING WORSE EVERY YEAR. DONT KNOW HOW LONG I CAN HOLD OUT.

AA 4 -
INDUSTRY GROUP BLAMES HOMEOWNER BACKYARD BURNING AS PRIME CAUSE OF AREA SMOG.

AA 5 -
SMOKE HAZE INCREASES HAZARDS OF AIRCRAFT LANDING. PILOT TELLS AREA KIWANIS.

CENTRAL CITY

PLANS COMPLETED FOR NEW CITY HALL. FUNDING SOUGHT. A $1.2 MILLION BOND ISSUE IS PROPOSED TO FUND A MODERN, EFFICIENT, WELL-DESIGNED CITY HALL TO REPLACE PRESENT 80-YEAR-OLD BUILDING IN AA 6. GENERAL SUPPORT OF COMMUNITY LEADERS IS ASKED FOR THIS LONG-OVERDUE IMPROVEMENT (PROJECT #6).

....PRECEDING IS ISSUE 2 POLITICIAN'S ULTIMATE DECISION BUT ELITE OPINION SOLICITED

---- ALTERNATIVE 1 FAVOR PROJECT #6

---- ALTERNATIVE 2 POSTPONE AND RECONSIDER

---- ALTERNATIVE 3 OPPOSE PROJECT #6

SUMMER DAY CAMPS PROPOSED FOR DISADVANTAGED YOUTH. STATE FUNDS, WITH CHARITY CONTRIBUTIONS, MAKE $160,000 AVAILABLE. PROVIDED CITY CAN COME UP WITH $120,000. PROGRAM NO. 10.

ANNEXATION OF MAPLE GROVE AREA (AA 12) TO GO TO A VOTE. FAVORED BY CHAMBER OF COMMERCE DUE TO POSSIBLE INDUSTRIAL SITES AT FREEWAY INTERCHANGE. THE ANNEXATION OF THIS AREA IS ALSO OPPOSED BY ANTI-TAX GROUPS BECAUSE OF THE COST OF PUBLIC IMPROVEMENTS REQUIRED. SCHOOL DISTRICT ANNEXATION TIED TO CITY VOTE - BOTH MUST BE APPROVED TOGETHER.

....PRECEDING IS ISSUE 5C DECIDED BY OPINION POLL MAJORITY AND REFERENDUM

---- ALTERNATIVE 1 FAVOR ANNEXATION OF AA 12

---- ALTERNATIVE 2 AVOID THE ISSUE

---- ALTERNATIVE 3 OPPOSE THE ANNEXATION

COMMUTERS REPORT IMPAIRMENT OF SENSE OF SMELL AFTER WEEK'S TRAVEL PAST TROJAN VARNISH COMPANY IN ANALYSIS AREA 10. DANNY DINKS, WHO PASSES THE PLANT FOUR TIMES DAILY, COMPLAINS HE CAN'T SMELL HIS GIRL'S PERFUME ANYMORE.

AA 4 -
RESIDENTS PRESS DEMANDS FOR SMALL CITY PARKING LOT AS LOCAL PARKING PROBLEMS MOUNT AND DOUBLE-PARKING CREATES SNARLS.

AA 4 -
HUGE CRACKS IN LOCAL STREETS CAUSE MAJOR ACCIDENT AS DELIVERY TRUCK SPINS OUT OF CONTROL. IMMEDIATE RESURFACING A 'MUST.'

AA 3 -
GROWING TRAFFIC LOAD CITED. INSPECTOR HUGGERIDGE SAYS STREET WIDENING MUST BEGIN 'BEFORE IT'S TOO LATE.'

AA 4 -
OVERLOADING OF AGED SEWER LINES BRINGS DEMANDS FOR IMMEDIATE EXPANSION OF SANITARY SEWER CAPACITY.

AA 8 -
STORM CAUSES BASEMENT FLOODING IN SEVEN-BLOCK AREA AS STORM SEWERS OVERFLOW. ACTION DEMANDED NOW TO EXPAND CAPACITY.

AA 3 -
RECORD RAINFALL FLOODS AREA. EXPANSION OF LOCAL STORM SEWER SYSTEM NEEDED.

AA 6 -
WATER PRESSURE DEFLATED BY RAPIDLY-INCREASING USE MAY HAMPER FIRE-FIGHTING EFFORTS UNLESS WATER MAINS ARE EXPANDED SOON.

AA 3 -
WATER MAIN EXPANSION NECESSARY TO MAINTAIN WATER PRESSURE PROGRESSIVELY LOWERED BY INCREASED USE OF AIR CONDITIONING.

AA 2 -
WATER MAINS BREAK THREE TIMES IN TWO MONTHS. RESIDENTS, UNDERSTANDABLY IRRITATED, DEMAND 'LASTING' MAJOR REPAIRS.

AA 4 -
'HOUSING ARE NEEDED WHERE PEOPLE ARE--BUSING PEOPLE OUT OF THE CITY ISN'T FEASIBLE,' CLAIMS RESIDENT GROUP IN PETITION.

AA 8 -
SHELTER HOUSE PROPOSED FOR PARK. LOCAL CITIZENS COMPLAIN CONSTANTLY ABOUT POOR PICNIC FACILITIES.

AA 1 -
CITY YOUTH DEMANDS NEW PLAY FIELD EQUIPMENT. OFFICIALS HOWEVER CITE WHOLESALE THIEVERY AND IMPLY YOUTHFUL RACKETEERING.

S U B U R B, JURISDICTION 2 b

AA 10 -
HOMEOWNERS ASSOCIATIONS DEMAND CITY TAKE IMMEDIATE ACTION TO RESURFACE WINTER-DAMAGED NEIGHBORHOOD STREETS.

AA 19 -
POORLY-CONSTRUCTED SANITARY SEWER SYSTEM CAUSES UNPLEASANT BLOCKAGES. RESIDENTS ARE CALLING FOR REPLACEMENT.

AA 19 -
TASTE OF WATER IS MAKING AREA RESIDENTS SICK. ONLY PERSON BENEFITING IS THE LOCAL CULLIGAN MAN.

AA 19 -
PARENTS GROUP WANTS LOCAL SWIMMING POOL SO CHILDREN WILL KEEP OFF STREETS ON HOT DAYS.

TOWNSHIP 1 (JUR. 3) b

AA 27 -
SAFETY SIGNAL INSTALLATION NECESSARY TO HALT INCREASING PEDESTRIAN ACCIDENTS AT HUSH SHOPPING CENTER INTERSECTION.

AA 21 -
AUTO INDUSTRY HOLDS KEY TO NATIONS FUTURE SAYS CHAMBER OF COMMERCE. PRESSURES POLITICIANS TO BUILD MORE PRIMARY STREETS.

AA 24 -
STORM SEWER EXTENSION DEMANDED BY IRATE CITIZENS. MILDEST SEWERS TURN UNIMPROVED LOCAL STREETS INTO SOUPY QUAGMIRES.

AA 24 -
FIVE FEET OF WATER INUNDATE LOCAL STREETS. ONLY LARGE-SCALE STORM SEWER CONSTRUCTION WILL PREVENT FURTHER OCCURRENCES.

AA 23 -
LOCAL CITIZENS HOPEFUL ABOUT GETTING WATER MAIN EXPANSION. PATIENCE WORN BY MANY DELAYS MAKES IT PRIME POLITICAL ISSUE.

AA 24 -
YOUNG PUNKS INTIMIDATE TODDLERS IN LOCAL PARK. MOTHERS DEMAND CONSTRUCTION OF INDEPENDENT TOT LOTS.

TOWNSHIP 2 (JUR. 4) b

AA 21 -
GRADUALLY-INCREASING TRAFFIC FLOW ON PRIMARY THOROUGHFARE IN THE AREA UNDERSCORES NEED FOR WIDENING.

AA 19 -
NEW PRIMARY ROAD PUSHED BY RESIDENT GROUP TO AID COMMUTER CONGESTION PROBLEMS.

AA 22 -
DEVELOPERS CALL UPON CITY TO EXTEND LOCAL SANITARY SEWER MAINS TO AREA RIPE FOR DEVELOPMENT. NEW TRUNKLINES NEEDED.

AA 20 -
RESIDENTS FLOODED AND SLAB FOUNDATIONS ERODED AS RAINS OVERFLOW STORM SEWERS. INCREASED CAPACITY CONSIDERED MANDATORY.

AA 19 -
WATER FACILITIES FAIL TO PACE URBAN GROWTH AND PRIVATE WELLS ARE NOT RELIABLE. MAJOR WATER MAIN CONSTRUCTION URGENT.

AA 19 -
COST-BENEFIT SHOWS FULLY OF PUBLIC ICE SKATING RINK BUT COMMUNITY GROUP CONTINUES TO PRESS ITS DEMANDS ON POLITICIANS.

BUSINESS PAGE b

g NEW FIRMS PLANNING TO COME TO A.P.E.X. AREA

h

SUPER CRACKERS INC (EXPANSION NO. 4) PREFERS LOCATION IN ANALYSIS AREAS 10 25 17. WILL USE 0.00 ACRES.
WILL HAVE 200 EMPLOYEES AND WILL ADD 572000. DOLLARS TO THE TAX BASE.
POLITICIANS NOTE-- REZONING NEEDED TO V-4 (VACANT INDUSTRIAL).
STREETS COSTING 35000. DOLLARS ARE NEEDED.
REQUIRES INVESTMENT OF AT LEAST $ 200000. BY LOCAL BUSINESSMEN.

ZIPPY FROZEN FOODS INC FREEZER (EXPANSION NO. 81 PREFERS LOCATION IN ANALYSIS AREAS 5 6 24. WILL USE 3.00 ACRES.
WILL HAVE 90 EMPLOYEES AND WILL ADD 190000. DOLLARS TO THE TAX BASE.
POLITICIANS NOTE-- STREETS COSTING 35000. DOLLARS ARE NEEDED.
REQUIRES INVESTMENT OF AT LEAST $ 25000. BY LOCAL BUSINESSMEN.

WAIL-ADS RENTALS (EXPANSION NO. 82) PREFERS LOCATION IN ANALYSIS AREAS 0 0 0. WILL USE 0.50 ACRES.
WILL HAVE 100 EMPLOYEES AND WILL ADD 300000. DOLLARS TO THE TAX BASE.
POLITICIANS NOTE-- REZONING NEEDED TO V-4 (VACANT INDUSTRIAL).
REQUIRES INVESTMENT OF AT LEAST $ 25000. BY LOCAL BUSINESSMEN.