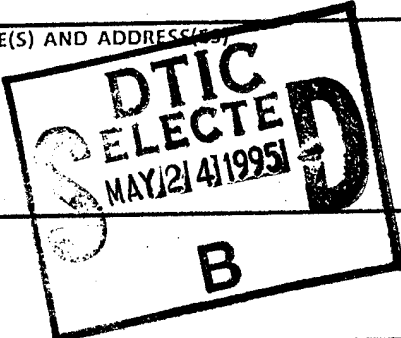
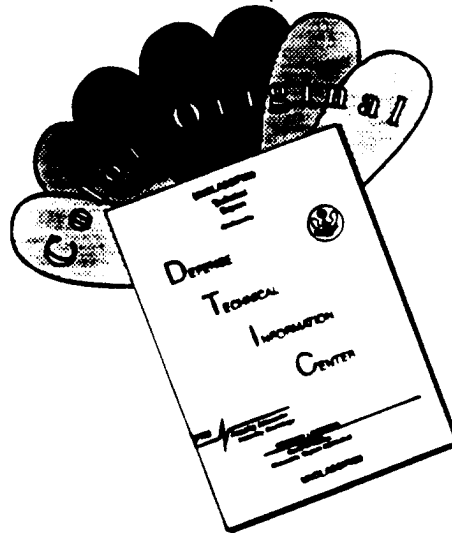
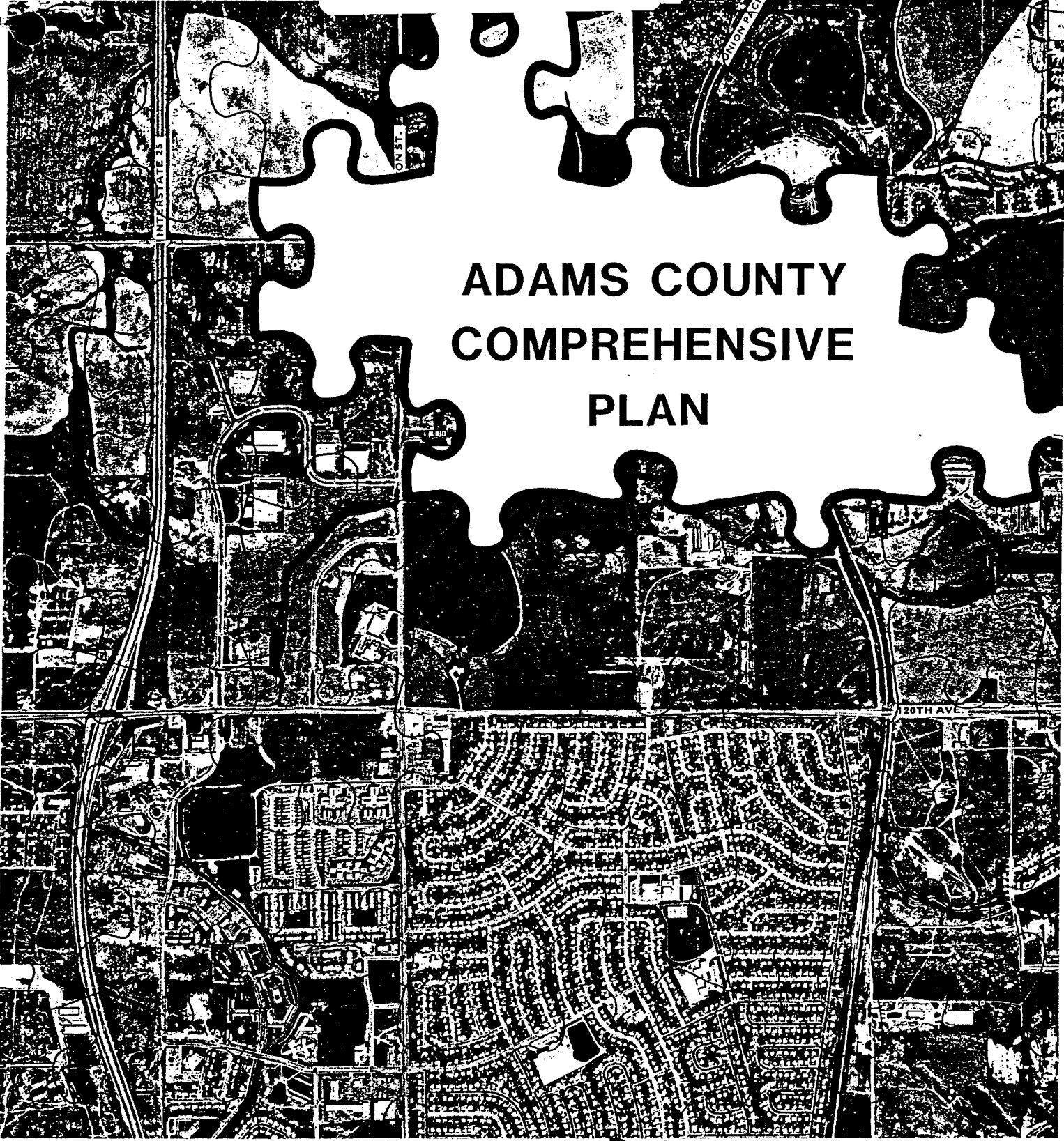


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An aerial photograph of Adams County, Colorado, with several irregular puzzle-piece shapes cut out of the top half. The cutouts reveal a white background where the title is located. The map shows various features including roads, fields, and urban areas. Labels on the map include 'INTERSTATE 25' on the left, 'UNION PAC' on a road in the top right, and '120TH AVE' on a road in the bottom right.

ADAMS COUNTY COMPREHENSIVE PLAN

FILE COPY

Rocky Mountain Arsenal
Information Center
Commerce City, Colorado

ADAMS COUNTY
COMPREHENSIVE PLAN

Prepared by
Planning & Development Services Department

Adams County Commissioners
Leo M. Younger, Jr., Chairman, District 1
Steven E. Cramer, District 2
Harold E. Kite, District 3

1984

(Includes Amendments Through May 1987)

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PURPOSE

The Comprehensive Plan is a document about Adams County whose primary purpose is to guide the Planning Commission and the Board of County Commissioners as they consider day-to-day land use questions. The Plan is adopted and amended by the Planning Commission, an appointed body that is advisory to the County Commissioners. The County Commissioners may also cite the Plan in support of their decisions.

The Plan serves an important public information function. Most of the text, maps and tables present data; only a small portion of the Plan is devoted to recommendations. The data are used by developers, market researchers, agencies and members of the public to improve their knowledge of Adams County.

The Plan is divided into elements, each covering a particular topic such as land use, transportation, recreation or utilities. Some elements present only information and contain no recommendations or policies. Others have specific guidelines to assist in decision-making; these elements are in "plan" form and are identified by that word in their titles. They include: the Future Land Use Plan; Waste Management Plan; Parks, Open Space and Trails Plan; Mineral Extraction Plan and Transportation Plan. Other elements may achieve plan status if definite implementable recommendations are outlined.

In a sense the Comprehensive Plan is a compilation of individual plans that, taken together, chart a course for Adams County's future. For convenience, and to allow better presentation of detail, some of the elements have been published separately. These separately published documents include:

- Adams County Waste Management Plan, 1982
- Master Plan for the Extraction of Limestone Used for Construction Purposes, Coal, Sand, Gravel, and Quarry Aggregate, 1983
- Strasburg Comprehensive Plan, 1983
- Adams County Airport Influence Zone Land Use Plan, 1983

CHAPTER I

INTRODUCTION

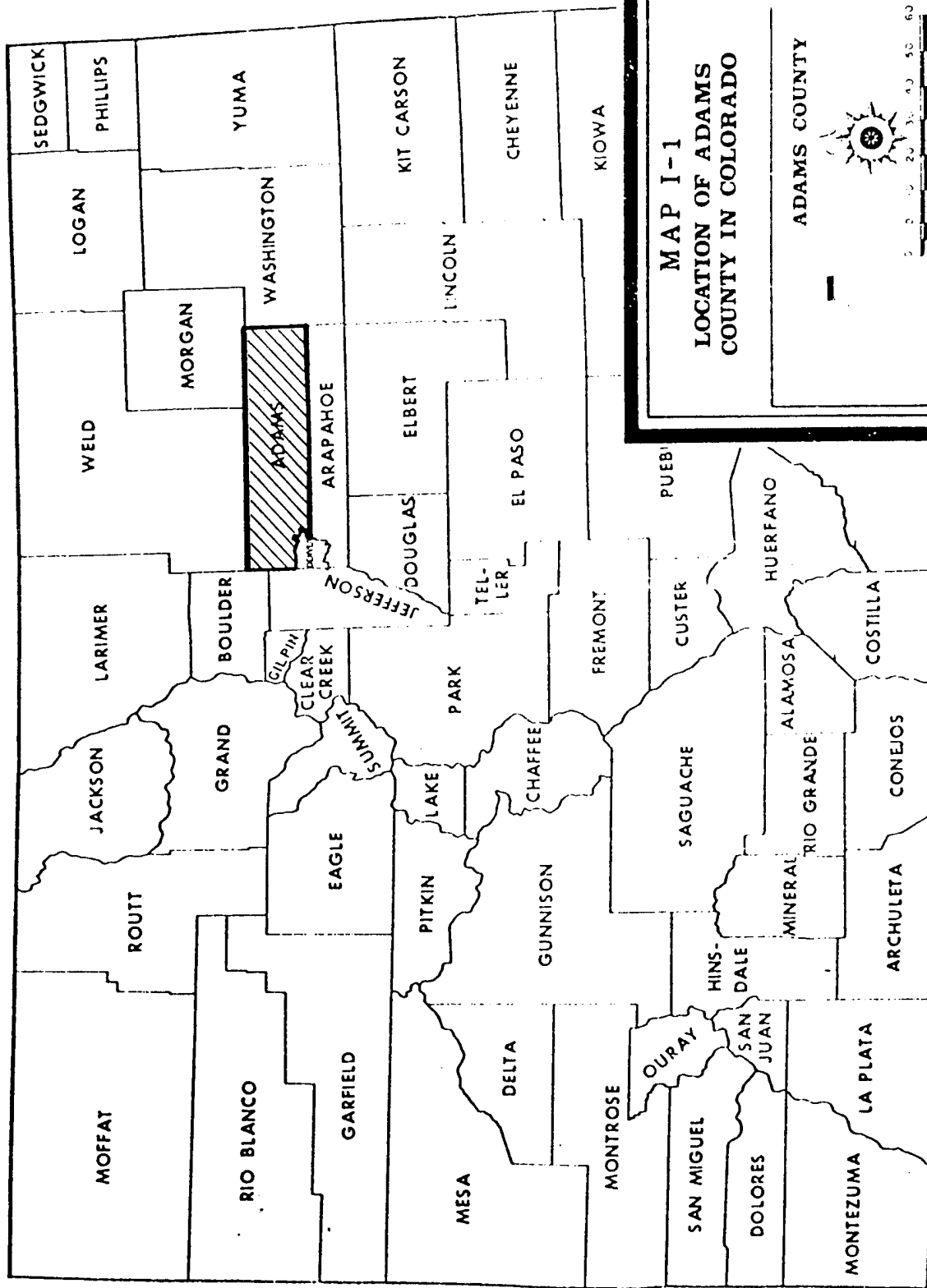
A study of Adams County reveals great contrasts. The western portion of the County forms the northeast quadrant of the booming Denver Metropolitan Area, one of the fastest growing urban areas in the nation. The entire County is officially included in the Metropolitan Area, but, in reality, the eastern portion has more in common with the farming communities of the Great Plains than the cities of Colorado's Front Range. This dichotomy has made Adams County an area with unique problems and opportunities.

Map I-1 indicates the reasons for some of these contrasts. The western portion of the County and the other communities of the Denver Urban Area are located near the mountains and in the Platte River Valley where water is more plentiful. The early settlers moved into these areas to grow truck crops on small farms to feed the Colorado gold and silver miners. The resulting farm towns later grew into the bustling cities of the Front Range.

In contrast, there are few locations in eastern Adams County with sufficient water to support intensive farming or large, concentrated populations. Most of the people in this area are engaged in "dryland" wheat farming and cattle grazing. These farms and ranches require enormous amounts of land to be economically feasible, and farmhouses are often miles apart. To a great extent, this area is Adams County's "frontier." It must be properly planned in order to take full advantage of its resources.

Planning has been critical to the development of Adams County since the mid-Nineteenth Century. A small group of farmers who settled in the Henderson area in the 1850s realized irrigation was the key to production and began planning a water distribution system. The Brantner Ditch and Farmers Highline Canal were dug in 1860, the Lower Clear Creek Canal in 1861, the Burlington Ditch in 1862, the Brighton in 1863, and the Fulton in 1865.¹ In 1885, the first portion of Barr Lake was built, and, in 1902, Standley Lake was constructed. Together they formed the skeleton of today's complex water system which supplies the needs of agriculture, industry and people.

Transportation planning, also played an important part in the County's development. An early recognition of the future of rail transportation by community leaders led to the construction in 1870 of railroads linking Denver with Cheyenne and Kansas City. These rail lines, which tied in with the great transcontinental route completed in 1869, both pass through Adams County and have contributed significantly to the County's



development. By the 1950s, the automobile had replaced railroads as the country's principal mode of transportation, and state and national highway planners were designing and constructing the Valley Highway as well as I-70 and I-76. These have structured recent growth in the County.

During the post-war housing boom of the 1950s, community planning became a driving force in the rapid development of western Adams County. In 1953, Sam Hoffman began construction of what would become the City of Thornton. It was conceived from the beginning as a complete, moderate-income community. Perl-Mack Corporation started developing Northglenn in 1959 according to neighborhood planning concepts. Provisions were made for each neighborhood to have its own parks and elementary school, and the city center was a regional shopping mall.

Community development was aided by utilities planning. In 1911, the Westminster Water and Sanitation Department was established, followed by Brighton (1918), Bennett Water (1930), Federal Heights Water (1940), Crestview and Town and Country (1949), South Adams (1951) and North Washington in 1952. Construction of these systems provided a foundation for the rapid urbanization which western Adams County has experienced.

"Planning" is simply an organized thought process which attempts to do three things: First, assemble all of the information about the community being planned; second, analyze the information to identify constraints and opportunities for development; third, recommend actions which will improve the quality of life in that community as it grows. "Plans" are written and graphic expressions compiled to promulgate the planning process. As conditions change and planners gain a better understanding of community needs, the plan must be revised or amended.

The first attempt to provide a comprehensive plan for Adams County, rather than previous single-focus planning, came in 1968. The Plan discussed history, topography, geology, transportation, public services, utilities and land use. It went on to generally designate areas for future residential, commercial, industrial and recreational development. Unfortunately, there is little evidence that this Plan was used by people in the County as a guide to growth.

In 1975, the Planning Department wrote a new plan which included the same type of information. It provided the basis for a Future Land Use Map which identified areas to be devoted to Low Density Urbanization, Employment, Agriculture and Parks/Mineral Conservation/Open Space. The Plan was adopted after extensive public hearings and has been used as a guide to land use decisions since.

Why then, should the Plan be updated after only eight years? A plan is only as good as the data it is based upon. During this eight year period, better information has become available, and conditions have changed in ways not anticipated by the Plan. If the Comprehensive Plan is to continue to provide the best possible basis for land use decisions, it must contain the latest and most complete data available. As time passes, the new Plan will in turn become outdated. Recognition of this fact has led to the inclusion of Adjustment Procedures which will allow new information and conclusions to be added at regular intervals.

Note:

- 1 Wagner, Albin, Adams County: Crossroads of the West, Brighton, Colorado: Board of County Commissioners of Adams County [1977]. Most of the historical data in Chapter I was taken from this publication.

CHAPTER II

GOALS, OBJECTIVES AND POLICIES

Purpose and Use

The Comprehensive Plan has many elements that deal with a broad range of topics. The information contained in the Plan forms a basis for goals, objectives, and policies which are statements of the County's future intentions. These statements are general where they must cover a large number of situations, but are followed by as many specifics as can be identified at this time. All decisions by the Planning Commission should reflect one or more County goals, objectives or policies. If a decision appears contrary to defined statements, it should be explained. If no criteria for a decision exists, the Plan should be amended to provide future guidance in similar situations.

Since the Plan is a guide to growth, there must be a certain unity of purpose and direction so that various community efforts and decisions do not oppose each other. Goals are statements regarding the general direction the County intends to take in the future. For the most part, goals are not tied to specific dates or targets that indicate their attainment. Rather, they are expressions of the community's desire to improve its quality of life.

Objectives are milestones on a path which will eventually lead to the accomplishment of a goal. They should be measurable so a community can determine its progress along the way. Objectives are related to goals, usually on a one-to-one basis, so that the connection between completion of an objective and the community's goals can readily be seen.

Policies are guidelines for making day-to-day decisions. Major changes are often a product of numerous small actions that may appear unrelated or insignificant. Policies provide the link between goals and the cumulative minor decisions that can make goals a reality.

The Plan organizes and presents information needed to make knowledgeable decisions for the County that are in accordance with accepted goals. Chapter II contains only the conclusions stemming from each area of discussion; understanding how particular policies will further County goals requires a review of the information upon which they are based.

Goals, Objectives and Policies

Economic Development Goal

Develop a diversified local economy that strengthens the tax base of the County and meets the employment needs of its residents. (See Chapter III)

Objectives

- Provide land and encourage utilities to be available for industrial expansion.
- Use appropriate public supports and stimuli to create an attractive business climate in Adams County.
- Encourage growth in those economic sectors which will enhance the appearance and image of Adams County and pay above-average wages.

Policies (from Adams County Economic Development, Inc.)

- Encourage the growth of employment opportunities which are compatible with local environmental standards.
- Encourage and assist the expansion of local industry.
- Encourage businesses not currently found in Adams County to locate or establish branch operations here.
- Encourage the creation of jobs most suited to the area's employment needs or potential.
- Encourage cooperative efforts of the public and private sectors in the pursuit of economic growth in Adams County.

Soils Goal

Ensure that the natural strengths and limitations of County soils are taken into account in all land use decisions. (See Chapter IV)

Objectives

- Make use of permeable soils to reduce development site runoff.
- Eliminate the loss of prime agricultural soils outside of urban growth areas and the County Airport Influence Zone.
- Reduce potential septic tank problems caused by poorly or excessively drained soils.

Policies

- Continue to require detailed site surveys and test borings prior to development which will identify shrink-swell soils, fractured bedrock, high groundwater, poor septic suitability, or other building limitations. Require that subsequent building plans address any problems encountered.
- Enforce erosion controls as part of the Land Development and Subdivision Regulations of Adams County.
- Require developers to control stormwater runoff through the use of appropriate methods including percolation pits and

- detention ponds. Designs shall be approved by the County Engineer.
- Use the development review process to encourage innovative and efficient use of land resources to prevent premature loss of farm production.
 - Use County Fragile Soils Regulations to control plowing of soils with high erosion potential.
 - Prohibit rural residential development on farm land classified as "suitable" for agriculture (best category) by the U. S. Soil Conservation Service. Encourage such development to be clustered on poorer soils, leaving the best areas for continued production.
 - Use County land use controls to discourage subdivision of land for rural residential use where septic problems are likely to be encountered.

Subsurface Resources Goal*

Ensure that important subsurface resources are extracted in a manner that will minimize harm to surface property values. (See Master Plan for the Extraction of Limestone Used for Construction Purposes, Coal, Sand, Gravel and Quarry Aggregate)

Objective

- Use the Master Plan for the Extraction of Limestone Used for Construction Purposes, Coal, Sand, Gravel, and Quarry Aggregate to increase awareness about the nature, location and County policies relating to subsurface resources to help avoid surface/subsurface use conflicts in the future.

Policies

- Continue to use County regulations to preserve access to commercial mineral deposits.
- Require that the end use of mined property be equivalent, either in tax base or recreational value, to the property prior to mining.
- Limit extraction plans to the shortest feasible period of time so there are no unnecessary delays in the redevelopment process.
- Require all reclamation plans for gravel mines in the South Platte River Valley to show how a mixture of high-quality business, residential and recreational uses can be developed on the property after mining is complete.
- Encourage redevelopment of existing unreclaimed mine land.
- Require coal extraction plans to include provision for return of all surface land to full agricultural productivity and/or surface development potential after mining is complete.
- Base the use of major groundwater resources on a minimum project lifespan of 100 years.
- Pass no regulations that will interfere with the safe, compatible extraction of gas and oil resources.

- Require that existing gravel mining operations abide by the South Platte realignment specified in the Major Drainageway Planning, South Platte River report, unless this proves to be physically impossible.
- Require that future gravel mining operations observe recommended alignments of the South Platte River as specified in the Major Drainageway Planning, South Platte River report.
- Insure that gravel mining operations in the floodplain of the South Platte River do not increase flood hazards or adversely impact the quality or quantity of surface groundwater.

Natural Habitat and Water Quality Goal

Maintain and improve critical natural areas as development takes place. (See Chapter IV)

Objectives

- Develop a buffer strip around Barr Lake, either through State ownership or compatible private use. The buffer area may contain active recreation (e. g. golf courses), natural space (e.g. horse and hiking trails) and agriculture. Proposed uses must help to preserve the existing park and wildlife habitat value of Barr Lake.
- Maintain at least 25 percent of the water capacity in Barr Lake through the year for fish breeding.
- Maintain and, if possible, improve the quality of water entering Barr Lake from drainage and from the Burlington Ditch.
- Restore the wildlife value of the South Platte River Valley after mining disturbance, and protect that value during subsequent redevelopment.
- Protect critical wildlife habitat from unnecessary disturbance or development.

Policies

- Encourage high quality single-family residential development as the primary urban use in the vicinity of Barr Lake.
- Require that development proposals around Barr Lake reflect the desired buffer area, and show how direct urban runoff to the Lake will be avoided.
- Continue efforts to increase the quality of water being discharged into streams and the South Platte River through persuasion and cooperation with the Denver Regional Council of Governments' Clean Water Plan.
- Encourage the State to purchase sufficient water rights in Barr Lake to protect the fish population during dry periods.
- Continue to promote erosion control and runoff control Regulations.
- Encourage environmentally sensitive designs for all types of development that minimize pollution, take advantage of

existing natural features and create spaces favorable for wildlife.

Air Quality Goal

Improve the air quality of the County and the Region so that national standards for pollutants are met or exceeded at all times. (See Chapter IV)

Objectives

- Develop a phased bikeway system that will eventually support bicycle commuting throughout the west end of the County.
- Use County influence to help obtain bus service along I-70 for Watkins, Bennett, Strasburg and the Front Range Airport.
- Plan for a Park-n-Ride facility to serve new development near the Front Range Airport.
- Increase the local employment base to reduce the current amount of regional commuting.
- Develop an increasingly efficient land use pattern in the County that allows citizens to shop, work and recreate near where they live.

Policies

- Support the measures for air quality improvement contained in the State Implementation Plan for the Denver Region.
- Support development of a transit system in the Denver Region which will provide a rapid non-polluting means of transportation for County citizens.
- Require large residential development proposals to include well-designed areas for community shopping, recreation and employment.

Water Supply Goal

Ensure economical supplies of potable water for urban use and preserve water for agricultural irrigation. (See Chapter V)

Objectives

- Form a County water organization that will:
 - a) Develop coordinated water demand projections.
 - b) Obtain new or expanded water supplies.
 - c) Examine the possibility of interconnecting water systems to strengthen water delivery capabilities and system pressure or improve water quality.
- Work with the State Engineer and U. S. G. S. to develop a deep aquifer resource management system that will:
 - a) Encourage use of deep aquifer supplies as system supplements to surface water.
 - b) Monitor pumping, use and depletion on a large area basis so that supplies can be maintained over a long period of time.

Policies

- Support efforts to increase the total quantity of raw water available to all delivery systems in Adams County.
- Support expansion of treatment, storage, and distribution capacities on a planned, coordinated basis in advance of need.
- Ensure that water conservation is a consideration in construction and landscaping of all new developments.
- Ensure that water system efficiency is a consideration within new developments and between those projects and the existing service area.
- Encourage community water systems, rather than individual home wells, in new rural subdivisions.

Sewage Treatment Goal

Ensure that sewage disposal does not reduce water quality in the County and that sewage effluent and sludge are reused beneficially. (See Chapter V)

Objectives

- Firmly establish a drainage basin system as the foundation for all sewage treatment planning by using the Clean Water Plan and other management controls.
- Plan for eventual establishment of interceptors and/or treatment plants in all of the major drainage basins in the Urban Growth Areas of western Adams County.

Policies

- Ensure that national and state wastewater discharge standards are met.
- Encourage establishment of stream classifications for watercourses in Adams County that are appropriate to the uses and wildlife value of those streams.

Utility Service Goal

Have new development support the eventual establishment of water and sewer service in all of the County's Urban Growth Areas.

Objectives

- Ensure that all new development in Urban Growth Areas contributes to the economic viability of central utility systems.
- Seek passage of state legislation that will give counties improved control over the formation and structure of new service districts.

Policies

- Urban development or rezoning to urban zone districts will only be permitted within Urban Growth Areas when there is provision for central water and sewer service.
- Individual wells and septic tanks as an interim measure will not be allowed. The only exceptions are homes constructed in existing rural subdivisions or on unsubdivided property larger than 10 acres in size.
- Service may be provided by an existing municipality or sanitary district or a newly-formed district. When a newly-formed district lies within two miles of a major existing system, it must be engineered to be compatible with that system with regard to line sizes and design specifications.
- Discourage the proliferation of new service districts.
 - a) No new district shall be permitted to be formed where service is available from an existing municipality or district. An exception may be made if the existing entity refuses to provide for new development.
 - b) Any new district that is formed shall be capable of providing drainage, recreation, landscape maintenance or other services deemed appropriate by the Board of County Commissioners in addition to water and sewer.
- Require development taking place within existing service districts to connect to their water and sewer systems unless service is refused.

Transportation Planning Goals

Develop a transportation system that facilitates convenient and efficient circulation, supports community development, is developed jointly with other affected parties, and, is cost effective.

Functional Transportation Goal

Design a system that enables mobility of people and goods between locations.

Objectives

- Review and update the functional classification of County roadways, down to the level of collector streets, at least every five years.
- Plan for roadway operation level-of-service C as defined in the Highway Capacity Manual.
- Include safety criteria such as the accident rate when evaluating system improvements
- Review and update roadways design standards used by the County at least every five years.
- Establish guidelines for spacing and configuration of access points along arterial streets.

- Maximize the carrying capacity of the existing system by traffic system management techniques such as signalization, signage, surface maintenance, and access and turning control.
- Incorporate the functional needs of the transportation industry including design standards to accommodate trucks on appropriate routes, railroad separation from traffic and adjacent land uses, the need for terminals (truck, railway, airway), and inter-modal links between trucking, railroads, and airports.

Policies

- For reasons of economy and efficiency, through traffic will be concentrated on the arterial system and discouraged on local neighborhood streets.
- Truck traffic will be encouraged only on the arterial system.
- The roadway system will be an extension of the existing system.
- Roads will be classified by function in a hierarchy based on a continuum from local access to regional mobility.
- Base right-of-way acquisition on anticipated build-out laneage at intersections, generally as follows:

Limited Access including E-470	350 feet
Expressway	150 feet
Major arterial	120 feet
Minor arterial	100 feet
Collector	80 feet

Except in the following cases:

- State highways where right-of-way will be acquired to comply with their requirements,
- Special cases where additional right-of-way may be required for auxiliary lanes, trails or other improvements as the County deems necessary,
- For sites adjacent to city boundaries where additional right-of-way may be based on the municipal requirement.
- In areas where existing roadways and building set-backs do not allow for desired right-of-way, acquisition will be based on existing conditions and reasonable future roadway needs.
- Transportation system improvements needed to accommodate future travel demand created by development, will be evaluated in the development review process.
- Operational level-of-service and safety considerations will be among the criteria used to evaluate needed system improvements.
- Up-to-date roadway design standards are desirable for efficiency and economic viability in community development.
- Special provisions may be required in the older developed areas of the County to provide appropriate roadway function.
- Control of access on arterials is appropriate to ensure proper functioning and safety.

- Measures to increase the carrying capacity of the existing system will be supported in order to decrease the need for capital investment.
- Support efforts to maximize the carrying capacity of the existing system by reducing the volume of single-occupant vehicle trips in favor of higher occupancy vehicle alternatives, and by reducing the need for frequent or lengthy trips.

Community Development Transportation Goal

Enhance community development by providing access to, and mobility among, land uses and community resources, and by mitigating negative impacts of the transportation system on the environment.

Objectives

- Include economic development criteria in evaluation of transportation alternatives, especially in the case of airport development.
- Review the land use regulations periodically to ensure that they allow for adequate and appropriate access including parking.
- Plan land uses that will require less travel such as mixed use development, neighborhood convenience centers, and a concentration of employment and commercial centers.
- Plan for transportation system access, especially transit, for the non-driver population.
- Provide sidewalks, paths, and safe access for pedestrian and non-motorized traffic including bicycles and wheelchairs.
- Include measures of affordability such as travel time and fuel consumption, among the criteria for transportation planning.
- Periodically review the intensity of development in the County to see if any areas warrant further development of transit service.
- Develop design standards that mitigate the negative impacts caused by the transportation system on the environment, including air pollution, noise pollution, and preservation of open space.
- Develop means to deal with traffic generated dust problems.
- Develop design standards to upgrade the visual impact of the transportation system on the community.
- Plan for land uses that take advantage of, and are not negatively impacted by, their proximity to large scale transportation facilities such as airports, terminals, rail lines and interstate highways.

Policies

- Recognize the link between land use planning and the transportation system improvements that support it.
- Encourage combinations of land uses which minimize the number and length of daily trips.

- Discourage land uses which would create new links in the roadway network which are discontinuous with the existing system, geographically or in design characteristics.
- In new development areas, encourage the extension of the existing roadway network to promote system efficiency and cost-effectiveness.
- Support affordable access and mobility for non-drivers, or for those choosing alternatives to driving.
- Support mitigation of environmental degradation caused by the transportation system and its usage.
- Recognize the importance of the visual impact of transportation corridors for community development.

Cooperation Transportation Goal

Develop the transportation network in cooperation with other jurisdictions; agencies such as Denver Regional Council of Governments (DRCOG), Colorado Department of Highways (CDOH), Regional Transportation District (RTD); and the private sector.

Objectives

- Work out an implementation plan for the Transportation Elements of the Comprehensive Plans of the County and cities with which it has intergovernmental agreements for joint planning
- Participate in programs such as the Better Air Campaign to reduce unacceptable levels of air pollution at peak times.
- Work cooperatively with RTD on providing and expanding transit service, especially on those developments which meet "criteria for the minimum ridership needed to study implementation of fixed routes" (as defined by RTD).
- When land is being subdivided, at the time of Development Review, minimum requirements for developer participation should include:
 - The design and construction of streets within the subdivision to County standards,
 - Improvement of the frontage to the designated arterial specifications, OR if this is deemed premature, entrance into a development agreement to improve the frontage at a later date with collateral to guarantee construction, and
 - Construction of off-site improvements if they are necessary to provide access to the site, to the extent that the development creates demand for additional off-site roadway capacity and requires additional safety measures.
- Develop criteria for requiring traffic impact studies at the time of development review.
- Develop a "development impact fee system" to enable the County to ensure an adequate circulation system.

Policies

- Support municipal transportation plans for development in their recognized growth areas by asking for sufficient right-of-way during the development review process.
- In order to encourage annexation in municipal growth areas, the transportation plan of the appropriate municipality will be respected if it is not in conflict with the County Plan.
- Cooperate with CDOH on transportation planning for the County.
- Participate in the DRCOG transportation planning process.
- Additions to the County roadways will extend the existing regional network and use the established system of functional classification, and naming and numbering of streets.
- Examine innovative transportation financing alternatives with state, regional and other multi-jurisdictional entities, such as the E-470 Authority, to overcome projected shortfalls.
- When land is being subdivided, on-site, and adjacent, transportation system improvements will be required from the developer.
- The developer must be made a partner to improvements of the off-site transportation system to the extent the new development impacts it.
- Collaborate with the private sector when planning major new facilities such as E-470 which will require private funding.

Implementation Transportation Goal

Use the planning and implementation tools available to the County to develop and maintain the transportation system in an efficient and cost effective manner.

Objectives

- Develop a comprehensive approach to allocating County resources for transportation planning which includes: coordination of efforts by the Departments of Planning and Development Services, and Highways and Engineering; a capital improvements program; project programming process that addresses project feasibility, phasing, financing, and prioritization.
- Create a transportation system model that includes the existing system design characteristics, capacity, and trip distribution; and anticipated changes in travel demand and system configuration
- Monitor volume on the arterial system at regular intervals.
- Every year, identify key transportation links that need attention, both for planning and improvement purposes.
- Include traffic management alternatives when analyzing transportation system improvements, including techniques such as signalization, signage, turn lanes, and condition of road surfaces.

- Periodically review and update the design standards used by the County for transportation planning.
- Use buffering and/or landscaping standards to mitigate negative impacts including environmental or visual degradation, or safety hazards.
- Coordinate project prioritization with other parties such as municipalities, DRCOG, Colorado Department of Highways, RTD, and the E-470 Authority.

Policies

- Encourage development of a transportation system that supports the other Goals, Objectives and Policies of the Comprehensive Plan.
- Recommend land use decisions that promote a continuous system which will economize on maintenance costs.
- Land uses which generate significant truck traffic should be served by the arterial system.
- Recognize that there are transportation planning priorities that do not involve immediate improvements, but may be critical for future development.
- Traffic management alternatives should be included in the resource distribution process because they are usually less capital intensive and provide the advantage of flexibility.
- Ensure that the Zoning and Subdivision Regulations include the standards, guidelines, and specifications that implement the Comprehensive Plan.

Air Transportation Goal

Promote the continued economic growth and prosperity of the Denver Metropolitan Region through the provision of superior air transportation facilities which minimize adverse impacts on surrounding communities.

Objectives

- Promote construction of a new airport to replace Stapleton International Airport by 1995.
- Enter into an Intergovernmental Agreement with the City and County of Denver regarding construction of a new international airport.
- Ensure that the location, configuration and use of the new airport minimizes adverse impacts on surrounding communities in Adams, Denver and Arapahoe counties.
- Ensure that no aircraft will be permitted to operate at the existing Stapleton International Airport after transition to the new airport has been completed, which shall be no later than Year 2000.
- Ensure Front Range Airport's continued growth as a general aviation "reliever" airport to existing Stapleton and the New International Airport.
- Develop an enforceable aircraft noise limitation program for Stapleton International Airport and the New International Airport.

Policies

- Incompatible land uses shall be restricted on land surrounding airports which fall within the 65 Ldn noise contour or more restrictive noise contours as determined in conjunction with airport planning activities with the Cities of Aurora and Commerce City.
- Enforceable noise limits shall be established to protect citizens from adverse noise impacts.

Floodplain Management Goal

In order to reduce possible future flood damage and to reduce existing flood damage potential, the County should preserve and improve the drainage and flood control capacity of waterways in the County while simultaneously enhancing the use of waterways as recreational and natural resources.

Objectives

- Participate in the preparation and implementation of master drainage plans, such as the Major Drainageway Planning, South Platte River report, using the 100 year flood as the basis for planning.
- Minimize activities that cause erosion and sedimentation through master drainage plans.
- Develop financing mechanisms to implement drainage plans.
- Develop multi-purpose waterways by enhancing opportunities for parks and recreation, and by improving conditions for wildlife, habitat and vegetation.
- Adopt gravel mining criteria to stabilize river banks and to allow for redevelopment after the termination of gravel mining operations.

Policies

- Encourage implementation of the Major Drainageway Planning, South Platte River report through the development review process.
- Improve flood control management by coordinating with park and recreation uses and transportation activities.

Parks, Trails and Open Space Goal

Ensure that all citizens have access to quality recreation facilities. (See Chapter VI)

Objectives

- Establish a trail system along selected routes through the County that meets the needs of equestrians, bicyclists and hikers. Complete the link from Clear Creek along the South Platte River to the Denver trail system during 1984.

- Develop the Regional Park as a County hub for recreation activity. Complete a Master Plan for this facility by 1983.
- Coordinate development of an active park network for the County that includes municipal parks, Hyland Hills Recreation District and limited County facilities. Ensure that this system meets national standards and local special needs.
- Coordinate establishment of an open space network that preserves critical natural areas, floodplains and the visual attractiveness of Adams County.
- Pass landscaping regulations during 1983.

Policies

- Require that larger residential developments include recreation facilities sufficient for the expected number of residents.
- Require that all proposed recreation facilities have workable maintenance arrangements that will keep the facilities in good condition.
- Construct new County-run active recreation areas only where a need has been identified by the Parks, Trails and Open Space Plan that cannot be met by a municipality or special district.
- Require developers to construct and dedicate trails and associated facilities according to County specifications where trails and associated facilities have been specified in the Plan as well as in the Major Drainageway Planning, South Platte River, Phase B- Volume II and are within or adjacent to the property being developed. Costs for construction and right-of-way may be used in lieu of required land dedication fees.

Educational Goal

Ensure that all citizens of school age have the opportunity for a quality education and have access to modern and attractive school facilities. (See Chapter VI)

Objective

- Develop a school plan in conjunction with County School Districts that will contain enrollment projections, general locations for new schools and set standards for school sites to guide the County's Development and planning assistance for school district administrators.

Policies

- Continue to provide open communication and planning assistance for school district administrators.
- Continue to obtain school sites, where required, through the Subdivision process.

Fire Protection Goal

Ensure that all areas of the County have adequate fire protection. (See Chapter VI)

Objectives

- Coordinate with fire district administrators to establish uniform fire protection requirements for all new development.
- Coordinate with fire district administrators to determine how the County may assist in keeping fire insurance costs in new areas to a minimum.
- Develop a fire protection plan in cooperation with County fire districts that will indicate general station locations and desired response times to serve new development.

Policies

- Support expansion of the Com Center "911" system.
- Support inclusion of all districts and municipal fire departments in the County Mutual Aid Association.
- Continue to provide open communication and planning assistance for all fire districts.
- Continue to represent district needs for fire flow, hydrants and new station sites through the Subdivision process.
- Do not permit new urban or rural residential development that cannot be reached within 15 minutes by fire equipment.

Police Protection Goal

Ensure that all areas of the County have adequate police protection appropriate to the existing level of development which may be improved to meet planned growth.

Objectives

- Coordinate with the Adams County Sheriff to develop a police protection plan that establishes response times, patrol frequencies and other criteria for various types and intensities of urban development.
- Coordinate with the Adams County Sheriff to formulate ordinances needed to ensure adequate police protection.

Policies

- Encourage planned urban development adjacent to existing municipalities to provide for eventual annexation when urban police protection is warranted.
- Require all developments being served by metropolitan districts to provide for police protection in accordance with standards recommended by the Adams County Sheriff.

Collection Service Goal

Ensure that all County citizens have access to sanitary and efficient solid waste collection services. (See the Adams County Waste Management Plan)

Policies

- Solid waste collection is the responsibility of municipalities and the private sector.
- Adams County shall identify gaps in the collection network and respond appropriately; if the deficiency affects developed parts of the County, service will be solicited from existing haulers. If the deficiency could affect proposed development, assurance of service will become a condition for approval of that development.

Economic Disposal Site Goal

Ensure that all municipalities and private haulers have designated disposal sites or transfer stations within a reasonable economic distance of their collection areas. (See the Adams County Waste Management Plan)

Policies

- Solid waste disposal within the County is the responsibility of the private sector except when private enterprise cannot meet a defined disposal need.
- The County will monitor the locations, capacities and lifespans of all disposal sites serving County citizens. New sites will be designated in anticipation of old landfill closings.

Health and Safety Goal

Ensure that the health and welfare of its citizens are safeguarded during collection and disposal of solid waste. (See the Adams County Waste Management Plan)

Policies

- Encourage the enforcement of all applicable regulations administered by the Colorado Department of Health, Tri-County District Health Department and the U. S. Environmental Protection Agency.
- All applicable County regulations shall be vigorously enforced.

Waste Management - Cost Recovery Goal

Ensure that County citizens do not directly or indirectly support the private operation of waste collection and disposal services through taxes. (See the Adams County Waste Management Plan)

Policy

- Adams County shall collect landfill surcharges to cover waste monitoring and enforcement tasks performed by staff, road maintenance, litter pick-up, public education or other costs identified by the Board of County Commissioners.

Inorganic Waste Disposal Goal

Make use of all types of safe, inorganic waste to reclaim less desirable land for development. (See the Adams County Waste Management Plan)

Policies

- Disposal of inorganic waste in appropriate sites shall be encouraged.
- Potential sites shall be identified through a comprehensive study of the County's reclaimable land, which shall be integrated with a gravel extraction study. Designation requests which conform to this study shall be approved using a rapid, streamlined process.

Recycling Goal

Encourage and facilitate the recycling of all materials with market value. (See the Adams County Waste Management Plan)

Policies

- Private recyclers shall be encouraged to locate and operate within the County.
- The County shall cooperate as fully as possible in locating recycling centers, publicizing recycling efforts and other appropriate actions.

Landfill Gas Goal

Seek to develop marketable quantities of landfill gas available at County disposal sites. (See the Adams County Waste Management Plan)

Policies

- Adams County shall encourage and support landfill gas recovery at former landfill sites, in particular the Tower Landfill that has been identified as being appropriate for gas recovery in the future.
- Adams County shall obtain the gas rights at all new landfills for lease as development becomes feasible.
- The design of all new landfills shall attempt to maximize eventual gas production.

Resource Recovery Goal

Encourage the recovery of all marketable materials which have entered the wastestream. (See the Adams County Waste Management Plan)

Policy

- The County shall encourage private enterprise to establish a shredder and/or sorter which will produce boiler fuel, recover ferrous metal, glass or other marketable materials from mixed refuse.

Hazardous Waste Goal

Minimize the environmental and health risks associated with hazardous waste generation, handling and disposal.

Policies

- Initial design of hazardous waste disposal facilities shall be reviewed by the Colorado Department of Health, Tri-County District Health Department, the U. S. Environmental Protection Agency and an independent consultant hired by the County. All feasible recommendations to improve safety shall be incorporated in the final design and facility operation.
- Safety procedures shall be closely monitored and vigorously enforced. All costs incurred shall be paid for through disposal surcharges.
- Resource recovery shall be encouraged as a technique for reducing the volume of hazardous waste. To ensure this, wastes which can be used by area recycling firms, or which can be safely incinerated, shall not be permitted in County hazardous waste disposal sites.
- Illegal dumping of hazardous waste shall be discouraged through vigilant law enforcement and strict prosecution of violators.
- No more than one hazardous waste disposal site shall be operated within the County at any given time.
- The County will actively promote all necessary channels and means to ensure that cleanup remedies for the Rocky Mountain

Arsenal provide effective long-range protection of public health and the environment.

Housing Goal

Ensure that all residents have the opportunity to obtain safe and decent shelter.

Objective

- Maintain a rate of housing production that will provide for the needs of existing County residents and any families who may wish to live here.

Policies

- Provide land, through appropriate zoning, for all housing types which meet recognized federal, state and local building codes.
- Do not permit housing to be constructed in areas where adequate services are not available, or where environmental conditions are unsuitable for development.
- Insist upon high standards of quality in housing development everywhere in the County.
- Expedite the review and approval process for new housing developments in order to reduce costs.

Future Land Use Goal

Achieve progressively better development through the consistent application of land use controls in accordance with the guidelines of the Comprehensive Plan. (See Chapter VII)

Objectives

- Capture a fair share of the growth currently being experienced by the Region that will occur in or adjacent to existing communities.
- Stimulate new centers of development, such as the Regional Park and Front Range Airport, that will add to the attractiveness of Adams County.
- Make use of vacant land already served with roads and utilities before developing large new tracts not currently ready for building.

Policies

- Direct growth to the extent feasible so that a desirable land use pattern, good roads and full services will be a reality in all future years.
- Use the Plan as the guide for direction in Adams County, and relate land use decisions to it.
- Amend the Plan when necessary so that its guidance will be kept current.

Residential Development Goal

Provide space in appropriate areas of the County for all types of residential development including rural residential, suburban residential and urban residential. (See Chapter VII)

Objectives

- Ensure that services appropriate to all types of residential use are available prior to development.
- Encourage attractive, innovative and energy-efficient designs for housing in new areas and in existing residential neighborhoods.

Policies

- Encourage new residential development to take place in areas that can be easily and economically provided with appropriate services.
- Reward developers who use site designs and structures with above average energy and water conservation features by waiving County permit fees.
- Reward developers who use innovative design techniques through flexibility of County regulations governing density, building setbacks and lot size.

Commercial Development Goal

Support commercial development in appropriate locations in the County that will provide residents with excellent shopping opportunities and add to local tax revenues. (See Chapter VII)

Objectives

- Strengthen existing commercial centers through expansion and redevelopment.
- Encourage new centers to develop at appropriate locations.
- Establish neighborhood centers in all large residential areas to provide convenient local shopping and save energy.

Policies

- Encourage high quality Activity Centers at selected major road intersections. Activity Centers should contain an integrated mixture of retail, commercial, office, service and multi-family uses.
- Encourage community shopping centers in areas designated in the Plan as Urban Residential. These centers will contain primarily retail businesses and services for nearby neighborhoods.
- Encourage small neighborhood businesses in Urban and Suburban residential areas that will meet the convenience needs of adjacent residents.
- Discourage the extension of existing commercial "strips" along County thoroughfares.

Industrial Development Goal

Expand and diversify the County's industrial base to increase employment opportunities for residents, to add to the tax base, and to enhance the image of the County as a location for high-quality business. (See Chapter VIII)

Objectives

- Establish a high quality, diversified Manufacturing Employment district along U. S. 85 between Commerce City and Brighton.
- Develop or redevelop portions of southwestern Adams County for quality Manufacturing Employment use.
- Establish an area for Manufacturing Employment adjacent to the County's Front Range General Aviation airport.
- Locate areas for Industrial Support activities that will not detract from the image of the County nor interfere with the economic feasibility of utility system extension.

Policies

- Encourage attractive, landscaped designs in all new industrial development.
- Require new industry to locate in areas where full services can be economically provided.
- Discourage Industrial Support uses adjacent to high traffic thoroughfares and in areas served by central water and sewer lines.

Airport Land Use Goal*

Ensure that general and commercial airport sites and the areas and ground transportation facilities surrounding them are planned to maximize the positive effects and minimize the adverse effects of locating airports in or adjacent to Adams County.

Objective

- To prepare a comprehensive land use plan and new zoning regulations for the site of the new international airport for the Denver metropolitan area that will replace Stapleton International Airport ("Area 1" on the attached map), and for a development area around the new airport site ("Area 2" on the attached map). The new comprehensive plan and zoning regulations will include (1) a determination of the alignment for the proposed E-470 highway and for ground transportation access to the new airport and (2) plans for the development area which will promote land uses compatible with the noise and other activity generated by the new airport.

Policy

- Adams County shall not rezone, grant variances, approve conditional uses or otherwise approve uses that are not as-of-right in Area 1 until the comprehensive land use plan and zoning regulations are approved, unless the Adams County Board of County Commissioners finds, with the advice of the Adams County Planning Commission, that the land under the existing zoning cannot be used for any purpose to which it is reasonably adapted. Adams County shall not rezone, grant variances, approve conditional uses or otherwise approve uses that are not as-of-right in Area 2 until the comprehensive land use plan and zoning regulations are approved, unless the Adams County Board of County Commissioners, with the advice of the Adams County Planning Commission, finds (1) that a change land use is in the best interest of Adams County and (2) that the change in use will not hinder the development of the new airport, and in particular, will not result in uses which would be incompatible with airport noise or which could interfere with optimum ground transportation access to the new airport.

Intergovernmental Cooperation Goal*

Adams County shall actively seek to coordinate planning with all municipalities, school districts, and special districts in the County, and with neighboring jurisdictions, in order to encourage planned growth and development, provide for the orderly extension of urban services, promote the economic vitality of the County and its cities, and enhance the quality of life for its residents.

Objectives

- Enter into intergovernmental agreements with all applicable municipalities in the County for joint planning in their respective growth areas.
- Develop joint land use and transportation plans to guide development in municipal growth areas.
- Formulate joint development policies and standards regarding new development in order to minimize impediments to annexation.
- Coordinate the phasing and financing of public improvements and the provision of urban services to new development.

Policies

- Encourage new urban development in the County to occur within incorporated areas.
- Allow new urban development in the unincorporated portions of the County but within defined municipal growth areas when there is consistency with jointly adopted plans and standards, and when there is reasonable assurance that the property will be annexed to the applicable municipality.
- Promote cooperation with other governmental jurisdictions in the planning process.

CHAPTER III

BACKGROUND

Chapter III contains three sections which "set the stage" for the remainder of the Plan. The first section covers existing land use, showing how the land is currently being used. The second section is a study of the County's people, based on data collected during the 1980 Census. It also contains estimates of how much the population will grow during the next twenty years. The third section is an examination of the local economy. It takes a look at where County citizens work and discusses the outlook for employment and tax base improvements in the future.

Existing Land Use

Adams County contains a total of 1238 square miles, of which the majority is crop or grazing land. Almost all of the urban uses are concentrated in the South Platte River Valley, which makes up the western twenty square miles of the County. The remaining fifty-two miles are drained by streams which are eventually tributary to the South Platte, but which intercept the main stream many miles to the north.

Land use is classified and mapped by planners in many parts of the country using a standard color code. Understanding this code enables anyone to see the land use pattern of a community by looking at a land use map. Generally, land uses are divided into residential, commercial, industrial, agricultural and public classifications. A heavier level of use is often indicated by a darker shade. Beyond this basic code, planners will vary classifications depending on what type of information needs to be shown.

Agriculture

Agriculture, in one form or another, uses over 90% of the land in Adams County. As pointed out in a later section of this Chapter, agriculture is also an important contributor to the local economy. Because of these facts, it is desirable to explore the details of agricultural land use as closely as available data will allow.

There are two published sources of information on agriculture: the U. S. Census of Agriculture (taken every five years) and the Colorado Department of Agriculture (annual). Differences in data collection techniques make inconsistencies inevitable, but combining these sources does give us a good

picture of how agricultural land is being used. The following table shows land use by crop type for 1978, the most recent Census year. Colorado Department of Agriculture figures are available for 1979, but 1978 was used to make the two sets as consistent as possible.

As the reader can see, agricultural land use is divided into three broad categories. Harvested crop land (irrigated and non-irrigated) accounts for about 440 square miles, over a third of the County's total 1238 square miles. Woodland and permanent pasture (rangeland) cover about 325 square miles, while fallow crop land covers 359 square miles. This fallow ground is almost entirely winter wheat land. Farmers in eastern Colorado and other High Plains areas alternate fields or strips of ground, planting one every other year. Resting the land improves fertility and allows soil moisture to build up to a point that a good crop can be grown.

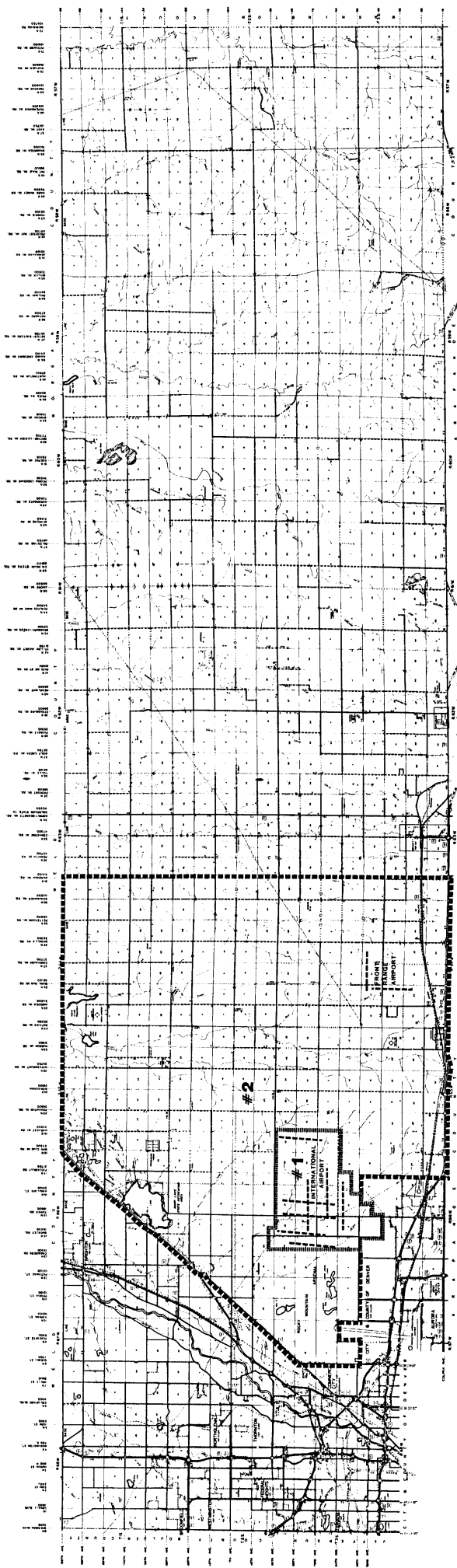
The quantity of irrigated land in Adams County is an issue which has received considerable attention. The 1979 Water Report prepared by the Planning Department estimated the amount of irrigated land in the County and the amount of water needed to sustain agricultural production. The staff used satellite photos, aerial photos and tax records to identify irrigated fields. They concluded that approximately 118 square miles of farm land were periodically or regularly irrigated. Of that amount, about half, or 37,760 acres, could be expected to be harvested in a typical year. The remainder was used as pasture, fallowed or suffered crop failure. The published figures for 1978 were 33,551 acres (Colorado Department of Agriculture) and 42,582 acres (U. S. Census). Both of these are of the same magnitude as the figure used in the Water Report.

Whatever the area, there can be no doubt of the value of irrigated crop land. The Colorado Reporting Service figures demonstrate that irrigated land consistently produces higher yields, more reliable production, and higher sales per acre than non-irrigated land. In addition, irrigation allows a number of crops to be grown in Adams County which would otherwise not survive. These include corn for silage (which supports local feed lot operations), sugar beets and truck crops.

The preceding map shows the location of dry land farming areas, irrigated areas and permanent pasture. As the reader can see, most irrigated land is located in the northwest section of Adams County where it is supported by an extensive network of canals. The central portion of the County produces wheat, while the eastern end is primarily in pasture.



II-1
AIRPORT PLANNING AREAS
ADAMS COUNTY COLORADO



LEGEND

- AIRPORT PLANNING AREA #1
- AIRPORT PLANNING AREA #2

ADAMS COUNTY COMPREHENSIVE PLAN
PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1985



Table III-1
Agricultural Land Use in Adams County
by Crop Type
1978

<u>Crop or Use</u>	<u>Colorado Dept. of Agriculture¹</u>		<u>U.S. Census of Agricul.²</u>	
	<u>Total Planted</u> (Acres)	<u>Irrigated</u> (Acres)	<u>Harvested*</u> (Acres)	<u>Irrigated</u> (Acres)
<u>Harvested Crop Land</u>				
Winter Wheat	230,000	3,000	174,257	
Corn (grain)	9,200	5,700	8,871	U.S. Census
Barley	12,000	3,500	11,264	does not
Sorghum	1,700	300	628	break out
Dry Beans	500	400	475	irrigated
Hay	17,500	13,900	23,331	land by crop
Silage (corn)	3,000	3,000	4,859	
Spring Wheat	1,000	100	NA	
Oats	2,800	100	1,099	
Sugar Beets	1,200	1,200	1,096	
Truck Crops	<u>2,351</u>	<u>2,351</u>	<u>2,351</u>	
Sub-Total	281,251	33,551	228,231	42,582
Woodland & Perm. Pasture	208,005		208,005	
Fallow	230,000		229,480	
Other Land **			<u>32,864</u>	
TOTAL	719,256		698,580	

*The U.S. Census of Agriculture reports harvested acres as opposed to acres planted. The Colorado Crop and Livestock Reporting Service estimated 230,000 acres were harvested in 1978, a figure very close to the 228,231 acres reported by the Census.

**The Census has two categories not used by the Reporting Service. One is "Crop land used only for Pasture", while the other is "House lots, ponds, roads, and wasteland".

¹Colorado Department of Agriculture, Colorado Agricultural Statistics, Bulletin 1-79, 1979.

²U.S. Department of Commerce, Bureau of the Census, 1978 Census of Agriculture, June, 1980.

Urban Uses

Residential

Although there are many types of dwellings, residential land use is primarily distinguished by density. At the lowest end are farmsteads usually standing in the middle of the farm property. They require almost no services, although minimal police, fire, postal and road maintenance are usually available. Next in line are rural subdivisions, averaging less than one house per acre. These areas are often designed to promote household self-sufficiency, relying upon individual wells and septic tanks for water and sewer service. Subdivisions of single-family detached housing have lots ranging from 7,000 to 20,000 square feet and densities above one unit per acre. These areas need water, sewer, police, fire and other urban services, and as a result are usually located within incorporated municipalities or service districts. Mobile home parks, townhouses and apartments are all types of higher density housing. Except for mobile home parks, they are always located in urban areas where the needs of the occupants can be met efficiently.

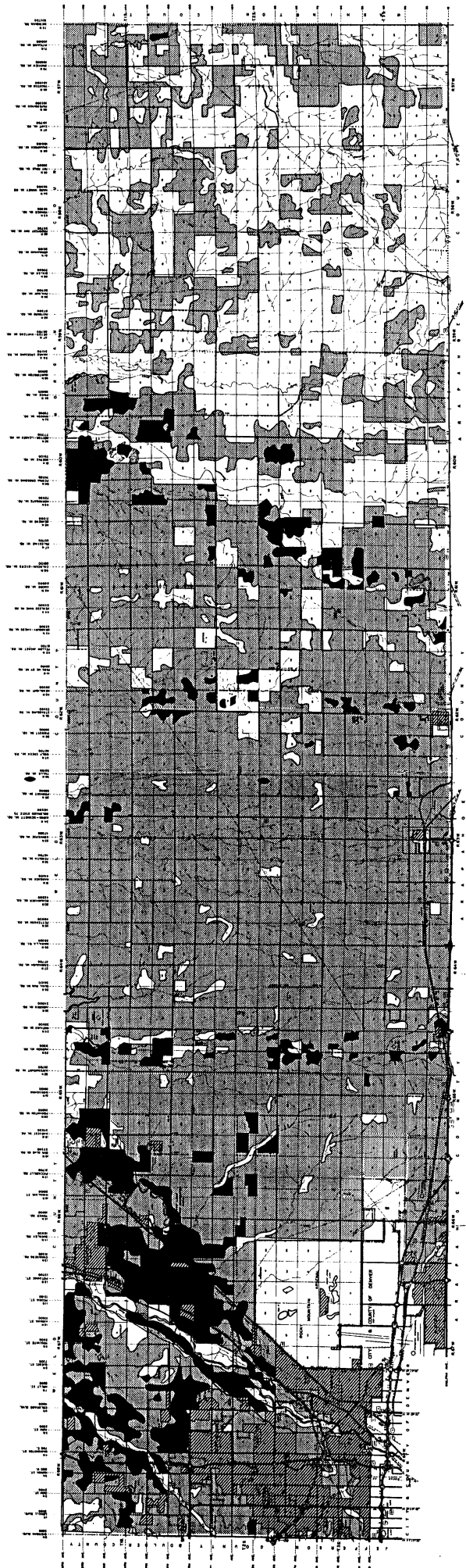
Adams County contains about 58,000 single-family houses covering 21,200 acres; 20,000 multi-family units covering 990 acres; and 12,000 mobile homes covering 2,300 acres. This total of 24,500 acres is equivalent to almost 38 square miles. The Existing Land Use Map shows that this housing is concentrated in the southwestern portion of Adams County and also near Brighton. Rural subdivisions are located in the northwestern corner, south of Brighton, and in other isolated areas.

Commercial

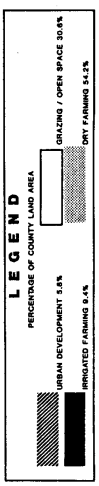
Commercial land use includes a wide range of retail, wholesale and service establishments. On the map, office complexes are included in the commercial category, even though the occupants may not be engaged in business activities.

Adams County is generally made up of suburban communities which have developed in the last thirty years. Because of this, commercial areas are usually linear "strips" such as Washington Street and Federal Blvd. or are concentrated around shopping centers like Northglenn Mall or North Valley Shopping Center. The only community with a traditional Central Business District is Brighton.

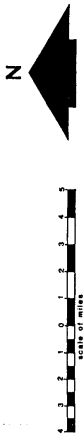
Commercial activity is often one of the most intense in the urban environment. Pedestrians, auto traffic and goods circulate within a fairly confined space. Urban services, particularly those of police, fire and traffic control are essential to the land use.

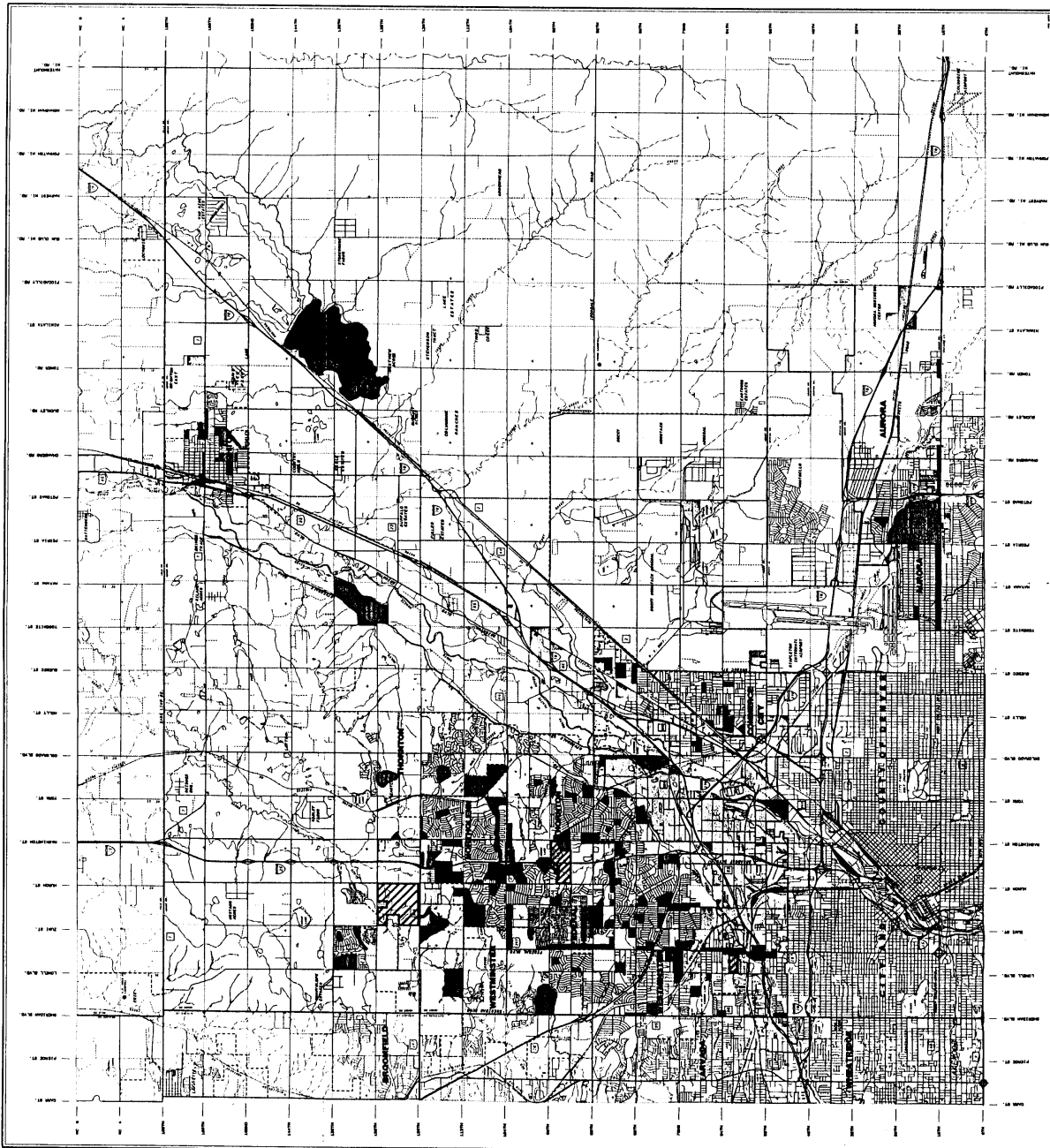


**AGRICULTURAL LAND USES
IN ADAMS COUNTY**
Source: Adams County Planning Department 1982
ADAMS COUNTY COLORADO



ADAMS COUNTY COMPREHENSIVE PLAN
PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1983





URBAN LAND USE

ADAMS COUNTY, COLORADO

III - 2

LEGEND

PUBLIC

COMMERCIAL - PLANNED

INDUSTRIAL

Industrial/Employment

This land use type ranges from "tech parks" to light industrial and warehousing districts, to heavy industrial and mining activities. Tech parks and light industrial facilities conduct their operations indoors with a minimum of noise, dust or odor. Traffic is concentrated at shift-change time but is usually light in-between. Heavy industry often uses large machinery and may conduct some operations outdoors. Certain amounts of noise, dust and odor associated with heavy industry make proper location important.

In Adams County, gravel mining and warehousing occupy far more land than other industrial types. Both of these are extensive activities, meaning that they cover large amounts of space without employing a great number of people. During the course of mining operation, large areas of land are unavailable for any other sort of use, even if they are not being mined or used for processing. Large areas of a site become either a dry, empty pit or a lake and most remain that way after reclamation unless outside material is brought in for fill.

Public/Semi-Public

This category of land use includes churches, schools, golf courses, parks and other activities of a social, usually non-profit, nature.

Open Space

Open space areas have been left in a natural state for various reasons. Floodplains, runway approaches, buffer zones and the Rocky Mountain Arsenal are examples found in Adams County. Open space has a low activity level and requires little maintenance. Being in a natural, undeveloped state, open space provides visual relief from the artificial, often monotonous urban environment.

Land Use Succession

Historically, the use of land progresses from least intense to more intense over time. Grazing land is broken and fenced for farming. Later it is sold for housing sites. After some time, houses at major intersections are often torn down to construct stores or other businesses. Whole residential districts may deteriorate and be replaced with business or industry. Occasionally the process works in reverse. This has happened in Adams County along Clear Creek and the South Platte River where

gravel mines, feed lots, and some industries have gone out of business. These areas await redevelopment to some new use, perhaps less intense than occurred there before.

Level of Development

The urbanized areas of Adams County cover approximately 143 square miles, or 11.6% of the total land area. How "developed" is that, and how much vacant land actually remains? To arrive at an estimate, the following acreages were calculated using detailed land use maps of the County and a 1980 study of land use in the Region by the Denver Regional Council of Governments (DRCOG).

The figure of 34.6% vacant or agricultural land in Table III-2 actually understates the amount of land available for development. In many developments, whether residential, commercial or industrial, there are numerous platted lots which can be built upon. A 1981 market survey in Adams County revealed a total of 35 "active" residential projects in which houses were being built and sold. These subdivisions contained a total of 9009 lots, of which 4,411 were still available. Forty-four hundred lots are equal to 7.6% of the existing single-family housing stock in Adams County. The oldest of these subdivisions was opened in 1972, but the great majority were started within the last three years. In addition to the lots available in these growing areas, there are usually about 500 lots scattered in older sections which can be built on. It is probable, therefore, that there are about 5,000 vacant residential lots in the urban area at any given time.

Land shown as developed for industrial use is more overstated than residential. As mentioned above, former mining areas have been classified industrial because they attract secondary uses such as landfills and scrap processing. However, much of the area is usually vacant and could be redeveloped for new industrial uses.

The area shown as containing commercial land use is fairly accurate. While shopping centers may contain vacant spaces, and business areas may contain empty lots, there is generally not a great deal of open commercial land in the urban area.

Another way to look at the level of development is to compare the urban density of Adams County with that of the City and County of Denver. Adams County has 246,000 people in an area of approximately 143 square miles, for a density of 1,713 people per square mile. Denver has 492,000 people in an area of 111.3 square miles, a density of 4,424 people per square mile. Denver is not a densely populated city like New York or Chicago with the majority of its citizens living in high-rise apartments. In fact, the residential pattern in much of the City is similar to that found in the urban parts of Adams County. The difference in

Table III-2

Urban Land Use Areas by Type

<u>Land Use</u>	<u>Acres</u>	<u>Square Miles</u>	<u>Percent of Total</u>
Residential			
Single Family	21,240	33.2	23.2%
Multi-Family	990	1.5	1.1
Mobile Home	2,271	3.5	2.5
Regional Commercial Center	258	.4	.3
Commercial	1,505	2.35	1.6
Office	38	.1	.04
*Public, Semi-Public	960	1.5	1.0
Industrial, Transportation and Communications	14,317	22.4	15.6
Parks, Open Space	4,540	7.1	5.0
Lakes	7,382	11.5	8.06
**Floodplains	<u>6,400</u>	<u>10.0</u>	<u>7.0</u>
Subtotal	59,901	93.6	65.5
Vacant or Agricultural	31,616	49.4	34.6
TOTAL	91,517	143.0	100.0

*Excludes Rocky Mountain Arsenal.

**Includes some agricultural and mining uses.

Source: Adams County Planning Department, 1982.

population density is primarily due to the complete use of available land. There is very little vacant area left in Denver. If the existing developed portion of Adams County were being fully utilized, a population of over 600,000 could be accommodated.

Population

Population information is essential to Comprehensive Planning. Population information can be used to determine the quantity of land and level of services needed to accommodate existing demand and projected growth. Population figures can be translated into indicators of development potential such as the number and type of residential units that will be necessary; the number of trips that will be generated; demand for water, sewer and other services; and even requirements for amenities. They can also be used to estimate revenues to pay for the required improvements.

Population figures are often expressed in terms of individuals. However, the overall total can be broken down into subgroups by factors such as age, sex, or race and origin. This type of population information can help to identify special planning needs particularly in the area of social services. The need for facilities such as schools or elderly housing is one example of how this information is used. The information can even target very specific planning concerns such as the number of elderly with income below the poverty level. Adams County Population by Race and Spanish Origin for 1980 is stated below. Figure III-1 below shows Age Groups by Sex in Adams County for the same year.

POPULATION BY RACE AND SPANISH ORIGIN

	Population	Percent
White	217,104	88.3 %
Black	6,307	2.6 %
American Indian	1,694	0.7 %
Asian	3,120	1.3 %
Other	17,719	7.2 %
Spanish Origin ¹	38,470	15.6 %
Total	245,944	100 %

¹Spanish Origin is an ethnic identification, not a race. Persons of Spanish Origin are included within three various categories of race.

FIGURE III-1
AGE GROUPS BY SEX IN ADAMS COUNTY, 1980

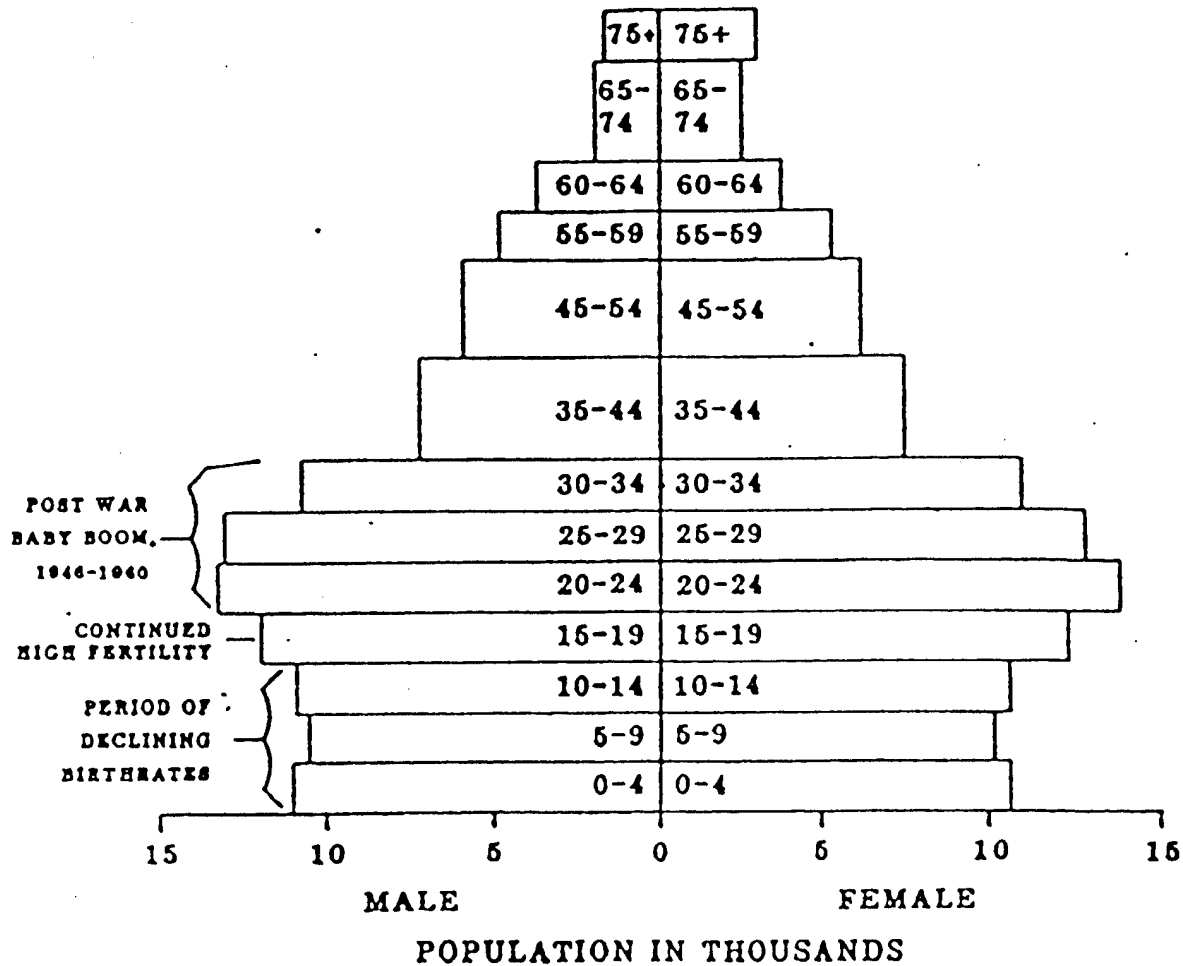


Table III-3
POPULATION OF CITIES IN ADAMS COUNTY

MUNICIPALITIES	1980	1985	All County Total
Arvada *	1,230	1,360	86,240
Aurora *	29,190	27,590	212,960
Bennett	940	2,070	
Brighton *	12,770	12,870	#
Broomfield *	5,470	6,730	23,990
Commerce City	16,230	15,920	
Federal Heights	7,850	9,490	
Northglenn	29,850	29,140	
Thornton	40,340	47,480	
Westminster *	32,050	36,300	60,200
UNINCORPORATED†	70,025	71,290	
COUNTY TOTAL		255,944	260,250
SIX COUNTY REGION	1,628,210	1,815,050	

*cities located in more than one county

total figure not available

†Box Elder 955, Strasburg 670, Watkins 300, East Plains 900

SOURCE: Denver Regional Council of Governments, 1980

Demographic information is very important to economic analysis and planning. Socio-economic indicators such as income and employment give a picture of the health of a regional economy. Statistics about the labor force and jobs are also useful for evaluating economic development programs and their chances of success. These indicators are also important for market analysis. Below is a table of 1970-80 Socio-Economic Characteristics for Adams County and the region, and a graph of the Adams County Employment by Sector.

Population is often aggregated geographically, usually on a jurisdictional basis. The figures for the cities in the County are given below. Most importantly, aggregated population and demographic information and trends are used for estimates, projections and forecasts for future planning. Population and Employment Distributions, and the Shares of Regional Growth, for the County for the years 1970 through 2010 follow. The map that precedes the table indicates the Regional Statistical Areas that are represented in the table.

Economic and Employment Analysis

The economy is one of the main forces which shapes a community. It determines the prosperity of its citizens, the type and degree of services provided by its government, its population growth, and, to a great extent, its physical layout.

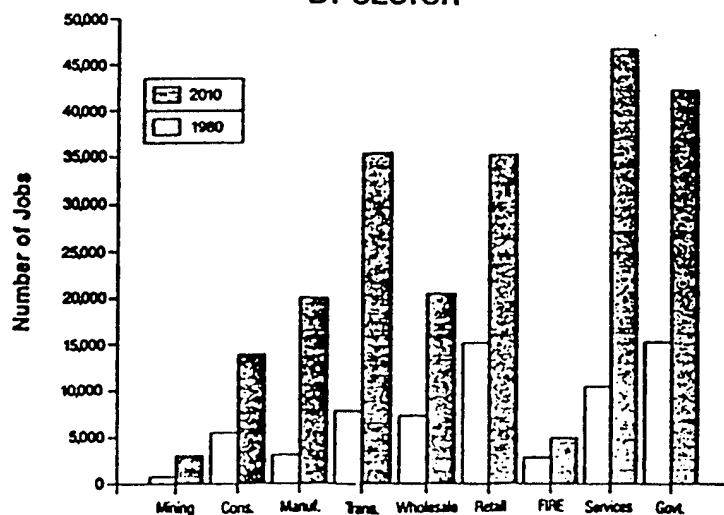
Table III-4
Socio-Economic Characteristics

DATA ITEM	ADAMS COUNTY			SIX COUNTY REGION		
	1980	1970	% CHANGE	1980	1970	% CHANGE
TOTAL PERSONS	245,944	185,770	32.4	1,618,461	1,235,927	31.0
TOTAL HOUSEHOLDS	84,219	50,017	68.4	608,402	394,479	54.2
HOUSEHOLD INCOME						
LESS THAN \$15,000	29,164	14,559	100.3	219,207	146,010	50.1
\$15,000 TO \$29,999	37,992	26,900	41.2	232,803	162,056	43.7
\$30,000 TO \$49,999	14,590	7,474	95.2	118,935	67,853	75.3
\$50,000 TO \$74,999	1,763	564	212.6	26,030	10,406	150.1
\$75,000 AND MORE	503	527	-4.6	11,711	8,753	33.8
MEDIAN HOUSEHOLD INCOME	19,511	20,828	-6.3	19,982	19,769	1.1
PER CAPITA INCOME	7,259	5,651	28.5	8,902	6,850	30.0
EMPLOYMENT STATUS						
PERSONS 16 YEARS AND OVER	177,573	113,642	56.3	1,230,589	845,327	45.6
IN LABOR FORCE	128,755	75,744	70.0	864,939	529,090	63.5
PERCENT OF TOTAL	72.5	66.7		70.3	62.6	
CIVILIAN LABOR FORCE	127,052	72,007	76.4	854,143	515,246	65.8
EMPLOYED	120,922	69,284	74.5	818,561	496,168	65.0
UNEMPLOYED	6,130	2,723	125.1	35,582	19,078	86.5
CIVILIAN UNEMPLOYMENT RATE	4.82	3.78		4.17	3.70	
INDUSTRY (1)						
AGRICULTURE AND MINING	3,738	2,165	72.7	27,574	12,477	121.0
CONSTRUCTION	10,163	5,249	93.6	58,392	30,801	89.6
MANUFACTURING	23,628	13,138	79.8	127,105	84,354	50.7
TRANSPORTATION-COMMUNICATION	13,695	7,624	79.6	71,221	39,601	79.8
WHOLESALE TRADE	8,376	5,373	55.9	44,215	28,838	53.3
RETAIL TRADE	21,654	12,155	78.1	136,388	84,461	61.5
FIN., INS. AND REAL ESTATE	6,518	3,816	70.8	63,901	32,903	94.2
SERVICES	27,189	15,566	74.7	241,090	150,006	60.7
PUBLIC ADMINISTRATION	5,961	4,198	42.0	48,675	32,727	48.7
OCCUPATION (1)	120,922	69,284	74.5	818,561	496,168	65.0
MANAGERIAL, PROFESSIONAL,						
TECHNICAL, SALES AND ADMIN.	59,638	33,350	78.8	509,222	293,168	73.7
SERVICE OCCUPATIONS	15,020	8,615	74.3	99,195	63,312	56.7
FARMING, FORESTRY, AND FISHING	1,809	1,383	30.8	7,851	4,477	75.4
PRECIS. PROD., CRAFT, REPAIR,						
OPERATORS, FABRICATORS, LABOR	44,455	25,936	71.4	202,293	135,211	49.6
YEARS OF SCHOOL COMPLETED						
ELEMENTARY - 0 TO 8 YEARS	14,400	14,090	-3.3	80,159	107,555	-25.5
HIGH SCHOOL-1 TO 3 YEARS	20,275	17,527	15.7	97,134	102,548	-5.3
HIGH SCHOOL- 4 OR MORE YEARS	57,185	35,821	59.6	318,425	224,410	41.9
COLLEGE - 1 TO 3 YEARS	24,897	11,147	123.4	206,581	99,512	107.6
COLLEGE - 4 OR MORE YEARS	14,161	7,438	90.4	246,086	111,409	120.9
MEDIAN EDUCATION	12.5	12.3	1.6	12.9	12.4	4.0

(1) Industry and Occupation Classifications of Employed Persons 16 years old and older by Residence

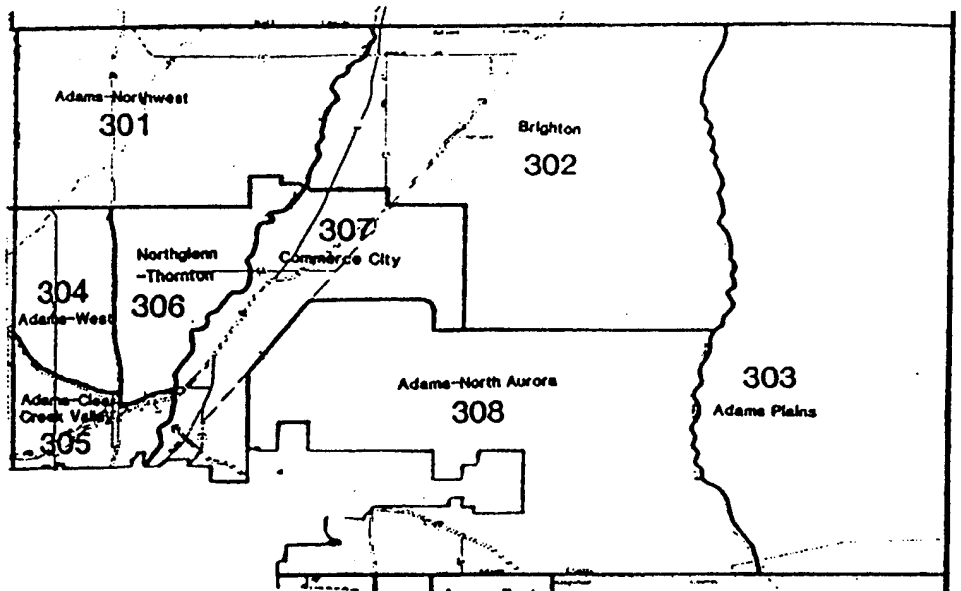
Source: 1980 Census Summary Tape File 3, 1970 Census 4th Count Tape,
Prepared by DRCOG December 1982

ADAMS COUNTY EMPLOYMENT BY SECTOR



Source: Denver Regional Council of Governments

Regional Statistical Area Numbers with Names



POPULATION DISTRIBUTIONS BY REGIONAL STATISTICAL AREAS

Regional Statistical Area		1970	1980	1985	1990	2000	2010
Number	Name						
ADAMS							
301	ADAMS-NORTHWEST	2413	12108	17463	28000	46900	65400
302	BRIGHTON	9721	15366	15982	30000	41400	55500
303	ADAMS PLAINS	2233	3218	5430	7600	12700	25500
304	ADAMS-WEST	39932	67774	73299	81200	88800	96700
305	ADAMS-CLEAR CREEK VALLEY	32166	32617	33258	33800	33900	33900
306	NORTHGLENN-THORNTON	40748	57856	59363	63900	75200	79900
307	COMMERCE CITY	29333	26345	25636	29900	36200	41300
308	ADAMS-NORTH AURORA	29224	30660	29819	36300	44500	52200
ADAMS COUNTY TOTAL		185770	245944	260250	310700	379600	450400
TOTAL ALL RSAs		1235927	1618461	1815052	2028900	2340800	2629900

EMPLOYMENT DISTRIBUTIONS BY REGIONAL STATISTICAL AREAS

		1976	1980	1990	2000	2010
ADAMS						
301	ADAMS-NORTHWEST	1973	3148	9900	19800	29900
302	BRIGHTON	4407	4755	7000	10000	13500
303	ADAMS PLAINS	651	537	2800	6100	9600
304	ADAMS-WEST	10789	15377	20400	27700	35000
305	ADAMS-CLEAR CREEK VALLEY	16627	20882	23500	28000	32800
306	NORTHGLENN-THORNTON	8198	10489	16100	24300	32100
307	COMMERCE CITY	12890	15515	20300	27100	33900
308	ADAMS-NORTH AURORA	10984	14952	27500	49000	62100
ADAMS COUNTY TOTAL		66519	85655	127500	192000	248900
TOTAL ALL RSAs		691471	863962	1206200	1466600	1720700

NOTE: Employment at the new International airport is shown in an Adams County regional statistical area. This does not imply that Denver will not annex the new airport.

TABLE III-5

SHARES OF REGIONAL GROWTH

*RSA	YEARS	POPULATION				EMPLOYMENT			
		1970	1980	1990	2000	1976	1980	1990	2000
		-1980	-1990	-2000	-2010	-1980	-1990	-2000	-2010
301									
302 ADAMS COUNTY		%	%	%	%	%	%	%	%
303 NORTHWEST		2.53	3.87	6.02	6.42	0.68	1.97	3.80	3.97
304 BRIGHTON		1.48	3.57	3.61	4.87	0.20	0.66	1.15	1.38
305 PLAINS		0.26	1.07	1.61	4.43	-0.07	0.66	1.27	1.38
306 WEST		7.28	3.27	2.41	2.76	2.66	1.47	2.80	2.87
307 CLEAR CREEK		0.12	0.30	0.00	0.00	2.47	0.76	1.73	1.89
308 NRTHGLN-THRNTN		4.47	1.47	3.61	1.61	1.33	1.64	3.15	3.07
COMMERCE CITY		-0.78	0.86	2.01	1.77	1.52	1.40	2.61	2.68
NORTH AURORA		0.38	1.37	2.61	2.66	2.30	3.67	8.26	5.16
TOTAL		15.74	15.78	21.88	24.52	11.09	12.23	24.77	22.39
OTHER COUNTIES									
ARAPAHOE		34.45	29.83	24.09	22.66	20.46	22.00	25.92	26.76
BOULDER		15.10	12.64	10.95	11.96	12.82	11.94	9.75	9.72
DENVER		-6.61	8.31	7.58	6.31	35.38	35.07	11.83	11.61
DOUGLAS		4.37	10.79	19.58	24.72	1.67	4.10	10.48	15.55
JEFFERSON		36.95	22.65	15.92	9.83	18.57	14.67	17.24	13.97
REGIONAL TOTAL		100	100	100	100	100	100	100	100

*Regional Statistical Area, Refer to Map

Source: Denver Regional Council of Governments

On the other hand, decisions by community leaders and public officials have a very significant effect upon the strength and makeup of the local economy. It is important to be aware of the economic consequences of policies controlling land use, roadway improvements, and the location of public facilities during the planning stages.

The purpose of this section is to provide County leaders with sufficient information to make decisions which will encourage economic growth in those areas most beneficial to the citizens of the County and the Region.

Employment Trends

Table III-6 shows how residents of Adams County have made a living during the past 20 years. For the most part, Adams County employment trends have reflected the national picture. Highlights of the 1960-1980 period can be summarized as follows:

- * Agriculture and Mining: There was a large decline in employment in this category between 1960 and 1970, but it held steady from 1970 to 1980. To some extent, farming employment declines have been balanced by modest increases in mining.
- * Construction: Contract construction has employed about 6% of the workforce nationally for the past 20 years. In Colorado and Adams County the percentage figure has been steady, but higher, reflecting Colorado's rapid growth and consequent need for construction workers.
- * Manufacturing: Nationally, manufacturing has experienced a slow and steady decline in importance, even though the number of people employed in industry has increased slightly. Manufacturing jobs represented 28% of the workforce in 1960 and dropped to 22% by 1980. Colorado and Adams County have never had a large industrial base, and have therefore not shown the same pattern as the U. S. as a whole. In 1960, 21% of the resident labor force of Adams County worked in manufacturing; in 1980 the figure was 19%. It should be noted, however, that the absolute increase in workers during this period was quite impressive, from 8,600 in 1960 to 23,600 in 1980.
- * Transportation, Communications and Utilities: The percentage of the labor force in this category has been quite consistent nationally and in Adams County during the past 20 years. The County has traditionally been strong in Transportation because of its large trucking line employment. This is reflected both in percentage figures (12% of the County resident labor force versus 8% nationally) and in growth of absolute number of employee (5,000 in 1960 versus 14,000 in 1980).

TABLE III-6
EMPLOYMENT TRENDS - ADAMS COUNTY RESIDENTS

INDUSTRY GROUP	1960		1970		1980	
	Number	% Labor Force	Number	% Labor Force	Number	% Labor Force
Agriculture, Forestry and Mining	2,064	5.16%	2,165	3.12%	3,738	3.09%
Contract Construction	3,870	9.68	5,249	7.58	10,163	8.40
Manufacturing	8,626	21.58	13,138	18.96	23,628	19.54
Transportation, Communication and Utilities	4,893	12.24	7,624	11.00	13,695	11.33
Wholesale and Retail Trade	8,825	22.08	17,528	25.30	30,030	24.83
Finance, Insurance and Real Estate	1,665	4.16	3,816	5.51	6,518	5.40
Services-health, education, professional and entertainment	7,473	18.70	15,566	22.47	27,189	22.48
Public Administration	2,558	6.40	4,198	6.06	5,961	4.93
TOTAL WAGE AND SALARY	39,974	100%	69,284	100%	120,922	100%
Military	N/A		N/A		1,708	
Self-employed and Unpaid Workers	N/A		N/A		5,536	

SOURCE: U.S. Bureau of the Census. The data result from County residents reporting their occupations during the decennial Census of Population for the years shown.

- * Wholesale and Retail Trade: People who distribute and sell goods have represented about 20% of the national workforce since 1960. In Adams County the figure has risen slightly from 22% to 25% over the same period.
- * Finance, Insurance and Real Estate: This is a special class of services that includes the banking, insurance and real estate industries. Nationally it has grown from 4% to 6% of the workforce during the last two decades. During the same period, Adams County's percentage has increased from 4% to 5%, while the growth in actual numbers has been from 1,600 to 6,500.
- * Services: This category includes teachers, hospital workers, ski resort workers and others who perform services instead of producing or handling goods. Nationally it has been the fastest-growing class of employment, rising from 22% of the workforce in 1960 to 29% in 1980. Adams County residents have lagged behind somewhat in the services "boom." Figures for the same period are 19% to 22.5%, although the growth in actual numbers of workers was substantial, rising from 7,400 in 1970 to 27,000 in 1980.
- * Public Administration: Employment in public administration has been very stable since 1960, representing 5.16% of all U. S. employees in that year and 5.27% in 1980. In Adams County, 6.4% of the residents worked in public administration in 1960, but that figure fell to 4.93% by 1980.

It is important to recognize that the data shown in Table 6 refer to Adams County residents. Many people living in the County work elsewhere while others who live in other communities travel to Adams County for jobs. Tables later in this section will show employment within the County.

Economic Base Analysis

One method of examining the economy of an area is by determining the economic base. This method assumes that the export portion of the economy provides the basis for economic growth in an area by bringing in wealth. Therefore, that portion of an area's economy which produces for export is considered "basic" industry, while that portion producing for local consumption is considered "non-basic" or "service" industry.

The Location Quotient Technique

The method used in determining the economic base for this study is the Location Quotient Technique. This technique assumes that the population of an area produces and consumes its proportionate share of all goods and services produced in the nation, and that the production by industries in excess of this proportion is for export. If one industry employs more people or

produces more in the local economy than the same industry at the national level, the excess is assumed to represent basic or export production.

While this technique is most easily understood as it relates to manufacturing and agricultural production, it can also be applied to such areas as wholesaling, retail trade and services. In order to compare the levels of production of the various industry groups, employment data were used as indicators. Employment provides a good measure of productive activity as it is available on a regular basis for both local areas and for the nation.

The employment data used in this study are from the County Business Patterns, 1980, which is published by the U. S. Bureau of the Census using Internal Revenue Service quarterly employer reports. The information reflects employment by place of work, rather than place of residence, as shown in Table III-6. Employer data are available in great detail for the County, State and Nation, but the figures do not include agricultural, government or self-employed workers.

The Study Area

An economic base analysis is most meaningful when performed for an economic region rather than limiting the study to political boundaries. For this reason, the Denver Standard Metropolitan Statistical Area (SMSA) was included in the base analysis. Base employment for the Denver SMSA provides a more accurate picture of the local economy than the Adams County figures alone. Much of the economic activity in Adams County is supported by industries in other parts of the Denver SMSA since many of the County residents commute to jobs in those areas, and vice versa.

Analysis

Careful review of the data in Tables III-7 and III-8 may confirm some suspicions about the Regional economy and Adams County's contribution to that system. It may also produce a few surprises. The following points are noted by Industrial category:

- * Agricultural Services: The Denver Metro Area neither exports nor imports these services. Adams County, however, has more than its proportional share of employment in this category and appears as 43% basic.
- * Mining: The Metro Area as a whole is 38% basic in this category, but Adams County alone has slightly less than the national average employed in mining. This is surprising because the County does support a healthy gravel mining industry.

TABLE III-7

EMPLOYMENT IN SELECTED INDUSTRY GROUPS BY PLACE OF WORK: 1990

	United States Employees	1	Colorado Employees	1	Denver, SUSA Employees	1	Alameda County Employees	1
<u>Agricultural Service, Forest Fish Hunting</u>	290,000	0.4	4,100	0.4	2,098	0.4	506	0.7
<u>Contract Construction</u>	996,000	1.3	37,600	3.6	14,396	2.1	590	0.8
<u>Manufacturing</u>	4,474,000	6.0	86,800	8.3	56,118	8.2	7,026	10.0
<u>Food and Kindred Products</u>	21,152,000	28.3	108,200	18.11	130,791	19.2	16,800	23.8
<u>Textiles and Apparel</u>	1,517,000	2.0	22,700	2.2	17,990	2.6	1,742	2.5
<u>Lumber and Wood Products</u>	2,137,000	2.9	4,100	0.4	3,064	0.4	574	0.8
<u>Furniture and Fixtures</u>	709,000	0.9	5,000	0.5	2,136	0.3	266	0.4
<u>Paper and Allied Products</u>	491,000	0.7	2,500	0.2	2,072	0.3	375	0.5
<u>Printing and Publishing</u>	656,000	0.9	2,000	0.2	1,856	0.3	375	0.5
<u>Chemical and Allied Products</u>	1,260,000	1.7	17,200	1.7	11,891	1.7	262	0.4
<u>Petroleum and Coal Products</u>	924,000	1.2	2,900	0.3	2,831	0.4	64	0.1
<u>Rubber and Plastic Products</u>	147,000	0.2	900	0.1	661	0.1	511	0.7
<u>Leather and Leather Products</u>	769,000	1.0	6,700	0.6	5,045	0.7	269	0.4
<u>Stone, Clay, and Glass Products</u>	226,000	0.3	3,800	0.4	3,661	0.5	60	0.1
<u>Primary Metal Industry</u>	633,000	0.8	8,800	0.8	4,859	0.7	800	1.1
<u>Fabricated Metals Industries</u>	1,171,000	1.6	7,900	0.8	1,796	0.1	404	0.6
<u>Machinery, Exc. Elect.</u>	1,676,000	2.2	16,500	1.6	14,317	2.1	777	1.1
<u>Electric and Electronic Equipment</u>	2,504,000	3.3	26,000	2.5	16,522	2.4	2,106	3.0
<u>Transportation Equipment</u>	2,027,000	2.7	15,200	1.5	9,219	1.4	3,000	4.2
<u>Instruments and Related</u>	1,856,000	2.5	10,600	1.0	11,341	1.7	2,608	3.7
<u>Miscellaneous</u>	643,000	0.9	21,500	2.1	13,183	1.9	60	0.1
<u>Administrative and Aux.</u>	438,000	0.6	4,600	0.4	3,660	0.5	316	0.4
<u>Transportation & Other Public Utilities</u>	1,311,000	1.8	10,100	1.0	8,819	1.3	1,500	2.1
<u>Trucking and Warehousing</u>	4,631,000	6.2	73,000	7.0	55,064	9.1	7,114	10.1
<u>Transportation by Air</u>	1,284,000	1.7	18,700	1.8	14,100	2.1	5,466	7.7
<u>Communication</u>	442,000	0.6	14,000	1.3	12,915	1.9	750	1.1
	1,319,000	1.8	24,100	2.3	17,233	2.5		
<u>Wholesale Trade</u>	5,216,000	7.0	77,000	7.4	58,491	8.6	7,889	11.2
<u>Retail Trade</u>	15,045,000	20.1	236,000	22.7	142,931	21.0	17,030	24.1
<u>Building and Garden Supp.</u>	535,000	0.7	9,400	0.9	4,660	0.7	876	1.2
<u>General Merchandise</u>	1,965,000	2.6	25,500	2.5	16,680	2.4	2,935	4.1
<u>Food Stores</u>	2,225,000	3.0	28,000	2.7	16,027	2.4	2,554	3.6
<u>Auto Dealers and Services</u>	1,745,000	2.3	27,400	2.6	15,846	2.3	2,214	3.1
<u>Apparel and Accessory</u>	944,000	1.3	11,600	1.1	6,981	1.0	911	1.3
<u>Furniture and Home Furnish</u>	577,000	0.8	8,800	0.8	5,516	0.8	473	0.7
<u>Eating and Drinking Places</u>	4,492,000	6.0	90,000	8.6	54,747	8.0	5,026	7.1
<u>Finance, Insurance, and Real Estate</u>	5,270,000	7.1	80,000	7.7	55,350	8.1	2,502	3.5
<u>Services</u>	17,195,000	23.0	247,500	23.8	160,087	23.5	10,699	15.1
<u>Hotels and other lodging</u>	1,086,000	1.5	22,400	2.2	9,566	1.4	601	0.8
<u>Personal Services</u>	953,000	1.4	13,800	1.3	8,950	1.3	783	1.1
<u>Business Services</u>	2,996,000	4.0	46,400	4.5	35,556	5.2	2,354	3.3
<u>Auto Repairs, etc.</u>	560,000	0.7	9,700	0.9	6,874	1.0	1,243	1.8
<u>Miscellaneous Repairs</u>	319,000	0.4	4,500	0.4	2,936	0.4	278	0.4
<u>Amusement and Recreation</u>	706,000	0.9	15,200	1.5	6,070	0.9	377	0.5
<u>Health Services</u>	5,258,000	7.0	64,500	6.2	40,737	6.0	2,791	3.9
<u>Legal Services</u>	503,000	0.7	7,400	0.7	5,477	0.8	155	0.2
<u>Educational Services</u>	1,245,000	1.7	10,000	1.0	8,004	1.2	419	0.6
<u>Social Services</u>	1,024,000	1.4	12,000	1.2	6,449	0.9	547	0.8
<u>Membership Organization</u>	1,214,009	1.6	14,700	1.4	9,457	1.4	639	0.9
<u>Miscellaneous Services</u>	925,000	1.2	20,600	2.0	15,931	2.3	556	0.8
TOTAL	74,036,000		1,040,000		681,168		70,735	

SOURCE: COUNTY BUSINESS PATTERNS: Colorado and U.S. Summary, 1990

TABLE III-8

EMPLOYMENT IN BASIC INDUSTRIES BY SELECTED INDUSTRY GROUPS
(LOCATION QUOTIENT TECHNIQUE)
1980

	DENVER MSA			ADAMS COUNTY		
	Non-Basic Employment	Basic Employment	Percent Basic	Non-Basic Employment	Basic Employment	Percent Basic
<u>Agricultural Service, Forestry, & Fisheries</u>						
Mining	2,698	0	0	289	217	43
Contract Construction	8,880	5,466	38	598	0	0
Manufacturing	41,062	15,051	27	4,216	2,810	40
Food & Kindred Products	130,791	0	0	16,800	0	0
Petroleum & Coal Products	13,838	4,152	23	1,394	348	20
Rubber and Plastic Products	661	0	0	146	365	71
Leather & Leather Products	5,045	0	0	269	0	0
Stone, Clay, & Glass Products	2,197	1,464	40	60	0	0
Fabricated Metals	4,854	0	0	582	218	27
Electric and Electronic Equipment	14,317	0	0	777	0	0
Transportation Equipment	9,219	0	0	1,928	1,072	36
Instruments and Related	11,341	0	0	1,762	846	32
	6,244	6,939	53	60	0	0
<u>Transportation & Other Public Utilities</u>						
Trucking and Warehousing	42,148	12,916	23	4,367	2,747	39
Transportation by Air	12,616	1,484	10	1,206	4,260	78
Communication	4,078	8,837	68	0	0	0
	12,407	4,826	28	750	0	0
<u>Wholesale Trade</u>						
Retail Trade	47,608	10,883	19	4,930	2,959	38
Building and Gardening	136,805	6,126	4	14,210	2,828	17
General Merchandise	4,660	0	0	511	367	42
Food Stores	16,684	0	0	1,861	1,074	37
Auto Dealers, & Service Stations	16,027	0	0	2,128	426	17
Furniture & Home Furnish	15,846	7	0	1,857	357	16
Eating and Drinking Places	5,516	0	0	473	0	0
	41,060	13,687	25	4,247	779	15
<u>Fin., Insur., & Real Estate</u>						
Services	48,517	6,833	12	2,502	0	0
Personal Services	156,680	3,407	2	10,699	0	0
Business Services	8,950	0	0	783	0	0
Auto Repair	27,347	8,204	23	2,354	0	0
Legal Services	4,812	2,062	30	483	760	61
Miscellaneous Services	4,792	685	13	155	0	0
	8,312	7,619	48	556	0	0

SOURCE: County Business Patterns: Colorado; U.S. Bureau of the Census, 1980
Adams County Planning Department, 1983.

- * Contract Construction: Both the Metro Area and the County are shown as having basic employment in construction. The Region as a whole exports construction services to mountain resort areas. Also, growth in the Metro Area has been substantial enough to support a construction industry larger than that found in most cities.
- * Manufacturing: While Adams County is thought of as containing a great deal of industry, it actually ranks fourth out of the six SMSA counties in manufacturing employment. Denver is first, followed by Boulder, Jefferson and Adams. Many of the industries in Adams County are highly visible and cover a great deal of land, but employ relatively few people. Industries in which Adams County has basic (export) employment include Petroleum Products (Commerce City refineries), Stone, Clay and Glass (concrete products manufacturers), Electronic Equipment (Western Electric), and Transportation Equipment (truck trailer manufacturers).
- * Transportation, Communication and Public Utilities: Denver Region employment in this category is 53% basic while in Adams County it is 39% basic. Denver County has 13,000 Air transportation jobs (Stapleton International Airport) and 15,000 jobs in Communications. Adams County is very strong in Trucking and Warehousing, with 5,500 jobs in that category. None of the other counties in the Region have comparable levels of Transportation employment.
- * Wholesale Trade: Wholesale Trade goes hand-in-hand with the Transportation industry. The Denver Region has 19% basic employment in this category while Adams County is 38% basic.
- * Retail Trade: Employment in Retail Trade reflects the distribution of goods to the consumer after they have entered a market area. The Region has only 4% basic employment in this category, indicating that relatively few people come in from elsewhere to shop. Adams County exhibits slightly more basic employment (17%), primarily on the strength of the building and gardening supply stores and auto dealerships located here. The County's basic employment in Retail Trade has dropped significantly during the last 15 years. Construction of I-25 and the Northglenn Mall in 1960 encouraged shoppers from northern Colorado and southern Wyoming to visit Adams County. Subsequent location of shopping centers in Greeley, Fort Collins, and Loveland has reduced the incentive for people in these cities to leave home to shop.
- * Finance, Insurance, and Real Estate: Denver is the banking and insurance center for the State, reflected in 12% basic employment in F. I. R. E. The economic benefits of this basic employment are concentrated in Denver County, which has 34,000 out of 55,000 jobs in the category.
- * Services: Employment in Services has expanded rapidly during the last 15-20 years, gaining in importance as Manufacturing has declined. Services are almost by definition non-basic because they generally produce nothing which can be exported

a great distance. Service employment for the Region, as a whole, is only 2% basic. However, striking patterns can be seen. Denver County provides the great majority of all business, health, legal, educational, social and membership service employment. Personal services, auto repair and amusement services are the only categories in which employment is spread fairly evenly among the SMSA counties. Adams County has basic employment only in auto repair, complementing its strong showing in the automobile-related areas of Retail Trade.

Several conclusions can be drawn from the Adams County employment figures in Table III-8. First, agriculture is still very important to the local economy. The County has basic employment in agricultural services and food products manufacturing, not to mention the people employed in farm work itself. A later section of Chapter III details the value of local farm products showing that this sector brings a great deal of wealth into the County.

Second, the County's industrial strength comes from businesses that have been here for a number of years. Western Electric (1970) is the most recent industry to create significant basic manufacturing employment in a new category. Others, such as the petroleum products and concrete products industries, have been here for many years. Most of the Region's newer "high tech" manufacturing has located in Boulder and Jefferson counties.

Third, much of Adams County's economic success can be tied directly to our excellent highway and railroad network. No other part of the Metro Area is as well served by transportation facilities. As a result, the County benefits from basic employment in Transportation Equipment, Trucking and Warehousing, Wholesale Trade, Auto Dealers, and Auto Repair Services.

Fourth, Adams County is not capturing very much of the strong regional growth in F. I. R. E. and Services. A great deal of this employment is concentrated in Denver County, but other centers have developed in Arapahoe, Jefferson and Boulder counties.

These points are important when looking at the future. Local officials can have some effect on economic growth through land use decisions, industrial revenue bonds, transportation improvements and other techniques. Some thought should therefore be given to policy options such as emphasizing traditional strengths, actively seeking economic diversity or maintenance of a "hands-off" attitude towards business growth. Later in this section Table III-10 presents employment projections which assume that in the future Adams County will capture the same share of employment in each category that it holds today. In areas of traditional strength, this assumption is likely to prove valid with or without local government action. County officials, however, may wish to tamper with historic trends and try

to attract a larger share of high wage-paying or high taxpaying employers. Several of the factors to consider are discussed below.

Providing Direction to the Economy

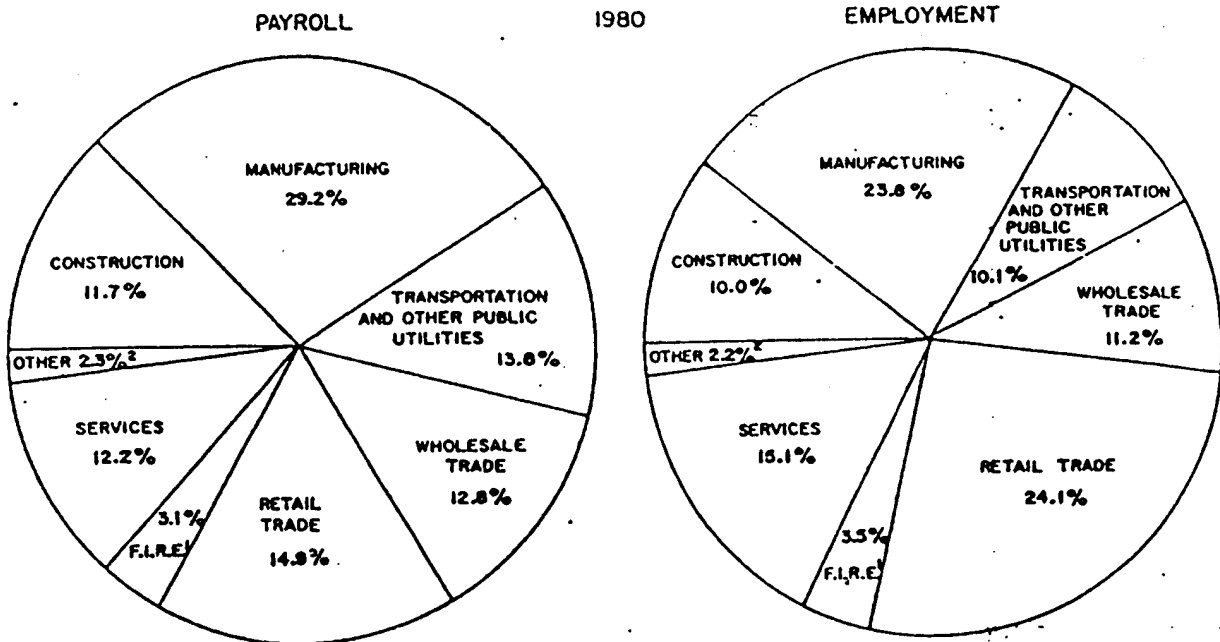
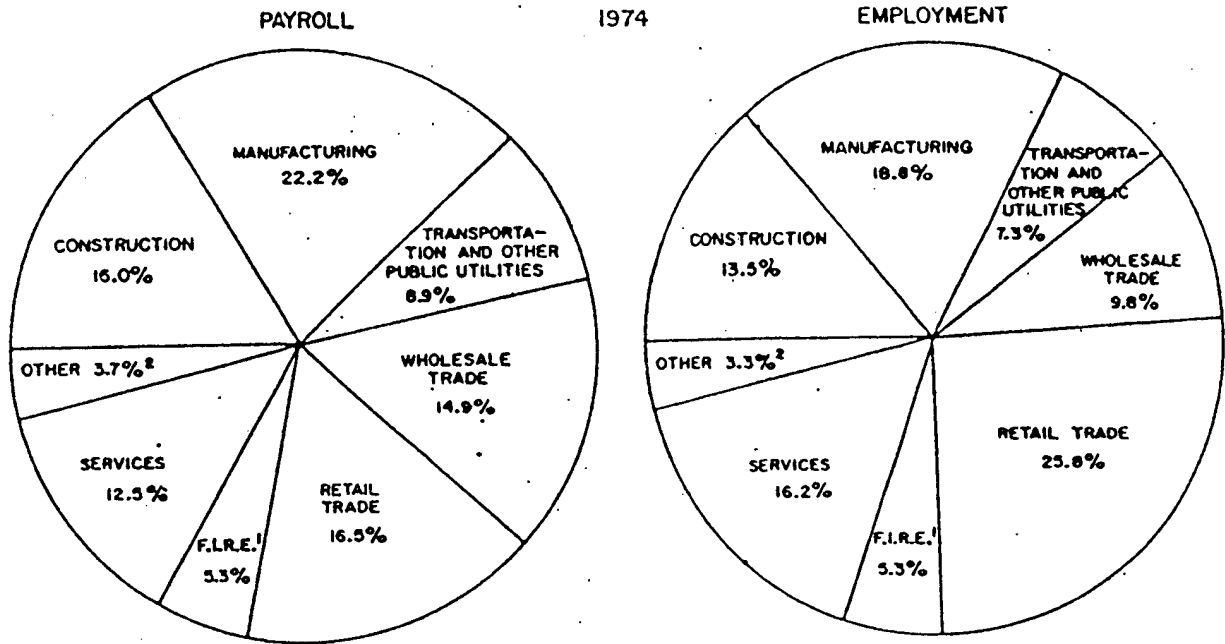
One way of determining the desirability of various industry groups is by examining the wages they pay. Figure III-4 depicts the six-year trend of employment and salary levels from 1974 through 1980. By comparing the percentages of total employment and total payroll, it is possible to determine which industries pay above or below the average wage in the County. For example, in 1980, Retail Trade employed 24.1 percent of the people working in the County, but it only accounted for 14.9 percent of the total payroll. From this it is obvious that Retail Trade pays wages well below the average of all employers. This is also true of the Services sector and Finance, Insurance, and Real Estate.

The Manufacturing sector, on the other hand, employs only 23.8 percent of the total work force surveyed, yet its payroll constitutes 29.2 percent of the County total. A similar relationship is apparent for Transportation and other Public Utilities, Wholesale Trade, and Contract Construction. These industries obviously pay above average wages to their employees.

There are other considerations in determining the most desirable industry mix for the County. One such consideration is the amount that each sector contributes to the County's tax base. This information is shown in Figure 5.

Residential property stands out immediately as the largest proportion of the total assessed valuation and as the fastest growing category. This is as one might expect in a suburban growth area during a period of rapidly increasing residential property values. The most stable and, after 1974, the smallest category was Agricultural Property, which remained in the range of 18 to 19 million dollars of assessed valuation throughout the period. The second largest category, Commercial Property, increased in value by over 142 million dollars (107 percent) during the study period. This category includes apartment complexes (except duplexes), retail and wholesale operations, office buildings, warehouses and trade terminals, and service facilities. The category entitled "State Assessed Property" includes railroads and public utilities, which are assessed by the State, but taxed by the County at the standard millage rate. The proportion allocated to the Industrial category is relatively small. This category includes only those properties involved in the manufacturing of goods. The assessment for industrial property exhibited a decline in value during 1979 due to the disastrous fire at the Conoco Oil Refinery which significantly reduced its value.

PERCENTAGE OF ANNUAL PAYROLL AND EMPLOYMENT
BY MAJOR INDUSTRY GROUP: ADAMS COUNTY
1974 AND 1980

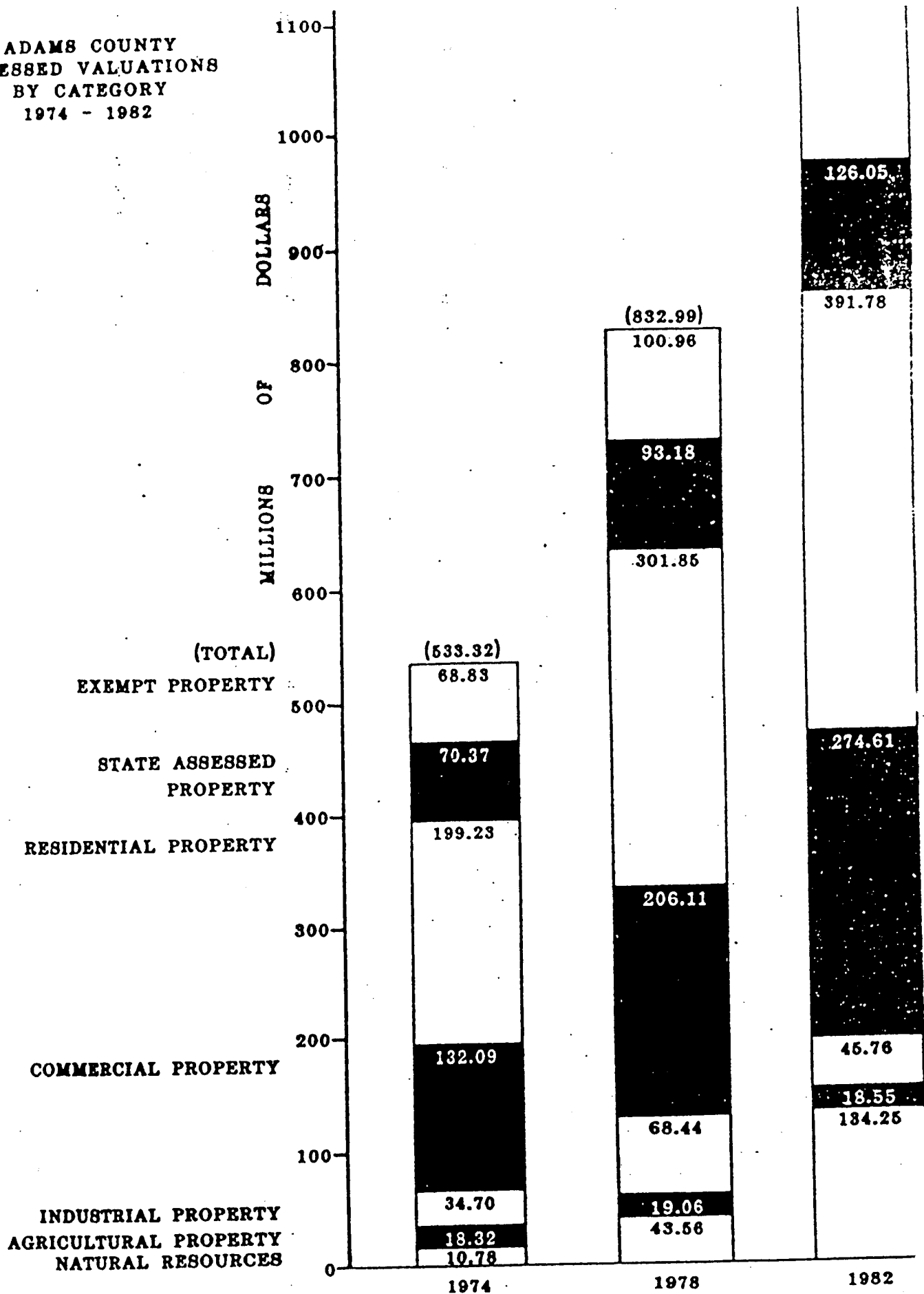


¹ FINANCE, INSURANCE, AND REAL ESTATE

² INCLUDES AGRICULTURAL SERVICES, MINING, AND NON-CLASSIFIABLE

SOURCE: COUNTY BUSINESS PATTERNS: COLORADO, 1974 AND 1980

ADAMS COUNTY
ASSESSED VALUATIONS
BY CATEGORY
1974 - 1982



SOURCE: ABSTRACT OF ASSESSMENTS AND TAX LEVIES:
ADAMS COUNTY, COLORADO, 1974-1982

The growth in assessed valuation by category generally parallels the growth of employment in the sectors of the economy to which they are related. The Industrial category accounts for a smaller proportion of the total employment, but, as previously indicated, manufacturing pays significantly higher wages than most of the commercial sector (Retail Trade; Services; or Finances, Insurance, and Real Estate). It is felt that the higher manufacturing wages easily outweigh the smaller contribution by industry to the taxbase, especially since manufacturing stimulates development in other areas of the economy. The Colorado Blue Ribbon Panel, in its report, estimated that three jobs are created in the services and trade sectors for each job in primary industry.²

Based upon the foregoing analysis, it is felt that the policies of the County should, as much as possible, encourage the continuation of those sectors of the economy which pay higher wages and, thus increase the standard of living within the County.

Employment Projections

Long-range projections of employment can be quite useful in the planning process, but they should be used with considerable caution. Levels of employment are determined by a large number of variables such as: growth of population and labor force, the national and local economy, energy and resource costs and availability, and the availability of capital for expansion. The variety of factors which affect employment increase the difficulty of preparing forecasts and decrease their accuracy, especially in high growth areas such as the Denver SMSA.

The most comprehensive effort to do regional and local employment projects was conducted by the Denver Regional Council of Governments during 1982. The Council obtained employment data by economic sector for all Urban Service Areas in the Region. These planning areas are described in the section on Population Projections. Council staff also prepared employment sector forecasts for the Region that showed expected growth or decline in various portions of the workforce during the next 20 years. Projections for Adams

County, done by Adams County Planning staff, are based on the assumption that the County will continue to reflect regional employment growth patterns in the future.

The first table is a 1980 employment profile of Adams County by sector and geographic area. The second table projects this "baseline" situation to the year 2000 using sector growth rates that are anticipated to be true for the Region as a whole. If valid, County employment would rise from 86,000 in 1980 to 118,000 by 1990 and 148,000 by the year 2000.

Table 1-9

EMPLOYMENT BY ECONOMIC SECTOR
GEOGRAPHIC AREAS IN ADAMS COUNTY

1980

Urban Service Area	Mining	Contract Construction	Manufacturing	Transportation	Wholesale & Retail Trade	Finance, Insur. Real Estate	Services	Government	Total Wage and Salary*	Agriculture	Military	Other	TOTAL EMPLOYMENT
Adams Non-Urban	59	228	332	130	438	24	114	533	1,858	462	51	202	2,573
Adams Urban	54	1,765	3,637	681	5,160	285	1,796	1,718	15,096	481	0	1,521	17,098
Arvada	0	39	97	0	60	92	60	0	348	21	0	46	415
Aurora	177	1,025	1,018	806	3,133	486	1,219	3,083	10,947	115	1,808	1,051	13,921
Bennett	0	3	7	0	43	3	35	105	196	0	0	34	230
Box Elder	0	0	0	2	8	4	0	0	14	38	0	29	81
Brighton	17	199	219	174	1,168	66	417	1,327	3,587	159	0	460	4,206
Broomfield	0	53	228	7	253	17	30	336	924	0	0	205	1,129
Commerce City	223	916	2,357	3,052	4,260	182	1,433	1,687	14,110	441	3	929	15,483
East Plains	0	13	0	0	9	0	2	37	61	51	0	45	157
Federal Heights	0	36	137	13	307	54	653	112	1,312	0	0	310	1,622
Northglenn	15	226	264	34	2,097	253	621	1,369	4,919	27	0	1,090	6,036
Strasburg	0	0	0	0	0	0	0	72	0	0	0	24	96
Thornton	267	286	884	556	2,494	403	1,337	1,474	7,701	343	18	1,473	9,535
Watkins	0	4	0	0	140	0	3	2	149	0	0	2	151
Westminster	18	593	4,973	133	1,991	737	1,943	1,604	12,072	27	3	1,379	13,481
TOTAL	830	5,426	14,153	5,580	21,561	2,606	9,663	13,539	73,366	2,165	1,883	8,800	86,214
Sector percent total employment in Adams County	1.0	6.3	16.4	6.5	25.0	3.0	11.2	15.7	85.0	2.5	2.2	10.2	100
Sector percent Denver Region	2.1	5.3	14.3	6.4	22.0	6.2	19.3	15.8	91.0	.7	1.3	6.6	100

*Total is slightly higher than shown in Table III-7 because it includes government workers.

SOURCE: Denver Regional Council of Governments

TABLE III-10

EMPLOYMENT SECTOR PROJECTIONS
ADAMS COUNTY AND THE DENVER REGION

<u>Sector</u>	<u>1980</u>	<u>Projected Change(%)</u>	<u>1990</u>	<u>Projected Change(%)</u>	<u>2000</u>
<u>Mining</u>					
Adams County	830		1,300		1,500
		54.1%		20.4%	
Region	18,100		27,900		33,600
<u>Contract Construction</u>					
Adams County	5,426		8,400		10,000
		54.5		19.6	
Region	46,200		71,400		85,400
<u>Manufacturing</u>					
Adams County	14,153		20,700		23,300
		45.9		12.7	
Region	124,300		181,300		204,400
<u>Transportation</u>					
Adams County	5,588		7,200		9,300
		29.6		28.7	
Region	55,400		71,800		92,400
<u>Wholesale and Retail Trade</u>					
Adams County	21,561		30,700		40,300
		42.2		31.3	
Region	191,500		272,400		357,600
<u>Finance, Insurance and Real Estate</u>					
Adams County	2,606		3,900		5,000
		48.8		29.7	
Region	53,900		80,200		104,000
<u>Services</u>					
Adams County	9,663		13,800		18,000
		42.5		30.8	
Region	167,800		239,000		312,800

Government

Adams County	13,539		17,000		21,900
		25.2		29.0	
Region	137,500		172,200		222,200

TOTAL WAGE AND SALARY

Adams County	73,366		103,000		129,300
		40.5		26.5	
Region	794,700		1,116,200		1,412,400

Agriculture

Adams County	2,165		1,900		1,600
		(12.1)		(17.6)	
Region	5,800		5,100		4,200

Military

Adams County	1,883		1,900		1,900
		0.0		0.0	
Region	11,100		11,100		11,100

All Other*

Adams County	8,800		11,600		14,700
		31.4		27.5	
Region	57,900		76,100		97,000

TOTAL

Adams County	86,214		118,400		147,500
		39.0		26.2	
Region	869,500		1,208,500		1,524,700

*Includes self-employed, unpaid family, and domestic workers.

SOURCE: Denver Regional Council of Governments.
Interpretation and display by Adams County Planning
Department.

Conclusions

This economic overview has brought out several important facts which bear on the Plan.

* The numbers of workers living in Adams County has increased tremendously, from 40,000 in 1960 to 128,000 in 1980. Likewise, the number of people working in the County increased from 25,000 in 1963 to 86,000 in 1980.

* "Basic" employment represents those industries or portions of industries which produce more goods or services than are consumed locally. The surplus is "exported" outside the area and its sale brings in cash. For instance, Coors Beer is brewed locally and sold all over the nation. Similarly, the Northglenn Mall "exports" retail goods to customers from as far away as Cheyenne. Important basic industries in Adams County include: Agriculture; Construction; Food; Petroleum and Coal Products; Stone, Clay and Glass Products; Electric and Electronic Equipment; Transportation Equipment; Trucking and Warehousing; Retail Trade; and Auto Repair Service.

* Adams County is currently a favorable location for trucking, warehousing, and wholesale establishments. The suburban cities in the County are attractive to retail business. Local officials can consciously promote or discourage various industries through zoning, utility extensions, financial assistance, and other techniques.

* As a rule of thumb, retail business is attractive to local governments because it pays high sales and property tax. Wholesale and manufacturing are attractive because they pay high wages which are multiplied in the local economy.

* The number of people working in Adams County should increase steadily through the planning period from 86,000 in 1980 to 148,000 in the year 2000. Competition for quality employers in the Metro Area will exist and local officials in the County will have to actively solicit and provide for desirable industries and businesses. The following objectives and policies express a direction for Adams County that will help attract quality employers.

Objectives

- Provide land and encourage utilities to be available for industrial expansion.
- Use appropriate public supports and stimuli to create an attractive business climate in Adams County.

- Encourage growth in those economic sectors which will enhance the appearance and image of Adams County and pay above-average wages.

Policies (from Adams County Economic Development, Inc.)

- Encourage the growth of employment opportunities which are compatible with local environmental standards.
- Encourage and assist the expansion of local industry.
- Encourage businesses not currently found in Adams County to locate or establish branch operations here.
- Encourage the creation of jobs most suited to the area's employment needs or potential.
- Encourage cooperative efforts of the public and private sectors in the pursuit of economic growth in Adams County.

Agriculture and the Economy

In the previous sections of this discussion we have focused on the industrial and commercial sectors of Adams County's economy because these areas employ the vast majority of the work force. However, no picture of the economy would be complete without attention to the value of agriculture. Agriculture has been a vital part of the County's economy since the settling of Colorado in the middle 1800s. Until the 1950s work on farms and ranches made up over one-fifth of the County's total employment. As farming became more mechanical and the size of farms increased, agricultural employment dropped to its present level of about 2% of the total.

The contribution that farming makes to the economy, however, has remained strong. Between 1971 and 1979, the value of crops produced increased from \$11.5 million to \$29.5 million. As is shown below, much of this value is recycled several times through the local economy making it much more important than the production figures indicate.

There are two major sources of information concerning farm production: the U. S. Census of Agriculture (conducted every five years), and the Colorado Crop and Livestock Reporting Service, (annual), published by the Colorado Department of Agriculture. Since data must be collected from a wide area, and because land ownership often crosses county lines, there are significant inconsistencies in the reported figures. When this problem is combined with the wide yearly fluctuations in crop and livestock production, it is almost impossible to detect trends. The following analysis, therefore, concentrates on the value of agriculture to the County in recent years and does not speculate how that may change in the future.

Table III-11
Crop Values in Adams County: Selected Years

Dollar Value (000)

<u>Crop</u>	<u>1971</u>	<u>1973</u>	<u>1975</u>	<u>1977</u>	<u>1979</u>	<u>% Change 1971-79</u>
Wheat	4,367	16,858	17,655	8,868	17,635	300%
Corn	1,650	3,165	2,285	1,640	3,565	116
Barley	1,249	869	1,216	422	1,237	0
Dry Beans	112	73	95	189	102	-8
Other Crops	4,101	6,387	7,970	7,383	6,643	62
All Crops	11,352	27,352	29,221	18,502	29,172	154
Livestock and Poultry Sales	N/A	N/A	N/A	N/A	49,085	
TOTAL VALUE					78,257	

Table III-12

Number and Value of Livestock in Adams County

Dollar Value (000)

<u>Stock</u>	<u>1971</u>		<u>1975</u>		<u>1979</u>	
	<u>No.</u>	<u>Value</u>	<u>No.</u>	<u>Value</u>	<u>No.</u>	<u>Value</u>
Cattle	71,000	12,780	52,000	8,060	62,500	25,937
Hogs	23,000	552	28,000	1,190	27,000	1,957
Sheep	3,500	100	2,500	94	1,300	103
TOTAL	97,500	13,432	82,500	9,344	90,800	27,997

Source for Tables: Colorado Department of Agriculture,
Colorado Agricultural Statistics, Bulletin 1-79, 1979.

Table III-13

1979 -Irrigated Crops

Acreage, Production, and % Total County Production

<u>Crop</u>	<u>Acreage</u>	<u>Production</u>		<u>% Total</u>
		Yield/Ac.	Total	
Winter Wheat	5,000	47 (29) *	235,000 bu.	5%
Corn (grain)	6,700	136 (55)	911,000 bu.	99%
Barley	3,600	72 (35)	259,000 bu.	50%
Sorghum	200	54 (23)	10,800 bu.	61%
Dry Beans	300	1,400 lbs.	4,200 cst.	100%
Hay	12,000	3.8 tons	40,000 tons	88%
Silage (corn)	3,600	18.5 tons	66,000 tons	100%
Spring Wheat	200	41 (20)	8,000 bu.	31%
Oats	600	60 (35)	36,400 bu.	84%
Sugar Beets	1,060	18 tons	17,100 tons	100%
Truck Crops	2,156			100%
TOTAL ACRES	35,416			

* () Average dry land yield of same crop.

Source: Colorado Department of Agriculture, Colorado Agricultural Statistics, Bulletin 1-79, 1979.

In Adams County wheat and cattle dominate, although hog raising and truck farming (other crops) are also important. Adams County has an extensive system of canals which carry irrigation water to farms, primarily in the West End. Since there is considerable demand for water for domestic and business use also, it is instructive to look at the value of irrigated land and crops relative to the whole agricultural picture.

The only crop yield which would not be substantially reduced by a loss of irrigation water is winter wheat; all other crops would be reduced or infeasible. Likewise, the feedlot industry, which contributes strongly to the value of livestock sold, relies on nearby sources of irrigated corn and hay for feed.

As was pointed out earlier, agriculture is generally a "basic" industry, and dollars from production and sale both circulate through the local economy. Some work in estimating the multiplier effect for agricultural production has been done at Colorado State University. These figures are presented on the following table.

Table III-14

Agricultural Production Multipliers

<u>Agricultural Activity</u>	<u>Business Activity Multiplier</u>
Livestock Processing	3.3
Dairy	2.4
Oats	2.8
Beef Cattle	2.3
Corn Silage	2.5
Swine	2.2
Sheep	2.1
All Hay	2.4
Corn	2.3
Beans	2.1
Sugar Beets	2.1
Wheat	1.5
Sorghum	1.4

Source: Colorado Agriculture: Business and Economic Activity
Forrest Walters and Gary Ramey, C. S. U., 1973.

According to the authors, the multiplier effect works like this: "Purchases of fed cattle (market ready) cause purchases of feeder cattle and breeding stock. The chain reaction of one dollar through-put in livestock processing ultimately leads to every sector of agriculture, including feed, labor, capital (banking), water, transportation, government services, and other services, causing total expenditures of \$3.30."

They go on to point out that wheat (the major crop in Adams County) would generate much more business activity if there were processing facilities in Colorado. Unfortunately, as much as 80% of our wheat is "exported to foreign outlets or shipped to out-of-state destinations." The only local benefits, therefore, come from sale of fuel, equipment, fertilizer, and seed. Farmers probably also spend much of their profits locally on the usual variety of consumer goods.

In conclusion, agriculture continues to be an important part of the economy in Adams County. Damage to this industry from poor land use or water allocation decisions could have a severe impact on many other economic sectors.

Sources:

- 1 Data on specific manufacturer's employment are from Directory of Colorado Manufacturers, 1977, College of Business and Administration, University of Colorado, Boulder, 1977.

- 2 Private Choices, Public Strategies: Growth, Development, and Investment: Colorado, 1980-2000, Vol. II: Appendices: The Blue Ribbon Panel, 1980.
- 3 Employment and Population Projections for the Denver Region 1980-2000, Denver Regional Council of Governments, 1982.

CHAPTER IV

RESOURCES

The natural resources and characteristics of Adams County are often taken for granted by the average citizen. Yet factors such as soils and climate have shaped settlement patterns and agricultural practices, and have sometimes caused problems for the uninformed. Natural resources are also important to business. Productive soils, gravel mines, and oil and gas wells play a large role in the local economy and are likely to continue to do so.

Chapter IV discusses soils, plants, and wildlife, three important County resources. For more information on subsurface resources, see the Adams County Mineral Extraction Plan.

Soils

General Overview

Proper soils are important for foundations, road building, agriculture, septic tank use, landscaping, underground utilities, water absorption, and tree cultivation. Soils in Adams County have been studied and classified by the U. S. Soil Conservation Service from the surface to a depth of five feet (60 inches). This valuable information was published in SCS Soil Survey of Adams County, Colorado, 1974.

Soils develop in three ways. They are 1) formed in place from parent material, 2) formed from wind-blown deposits, and 3) formed from alluvial (water-borne) deposits. All three of these types are represented in Adams County. "Soils that have profiles almost alike make up a soils series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Soils of one series can differ in texture of the surface layer and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such a difference, a soil series is divided into phases."¹

In Adams County many soils are suitable for farming or other purposes if relatively flat. On steeper slopes, however, wind and water erosion severely limit their potential. Some alluvial soils are very fertile, but if they stay wet much of the year or flood frequently, they will not support crops. The soil mapping units, therefore, take into account soil type, slope, wetness, and other factors which affect use. Two maps in this section

illustrate those soil factors most related to planning decisions. A description of the soil properties is included in the text.

Agricultural Fertility

The section on Economy (Chapter III) in this study indicates the importance of agriculture in Adams County. As the world becomes more populous and the U. S. exports more food, this contribution to the local economy will increase. Good farm land, unlike gas, oil, or coal, is a renewable resource. With good management, some soils in Adams County can produce regular crops of dryland wheat, barley, or rye indefinitely. When irrigation water is available, the variety and value of crops which can be grown increases dramatically.

Surface water rights are separable from farm land, and deep aquifer water may not last indefinitely. The Agricultural Suitability Map is not therefore based upon existing irrigation practices. Soils labeled as "prime" farm land can be expected to produce a positive economic return in years with near normal precipitation. Soils labeled as "variable" farm land may produce good crops or they may be limited to range use. As an example, the Weld-Deertrail complex contains excellent Weld soils and very poor Deertrail soils. In some cases dryland wheat may be grown, while in others the presence of too much Deertrail soil may prevent economic cropping. Soils labeled as "poor" have almost no agricultural value, although they may sometimes be used for grazing. This classification is not intended to ignore the economic value of grazing. Adams County contains a great deal of high-quality range land that will sustain beef production indefinitely. Most of the "variable" soils are excellent for grazing.

The Agricultural Suitability Map indicates that most of the soils in the western one-third of Adams County are well suited for crop land. The percentage diminishes as one moves east so that less than 50% of the soils can be considered good in the Badger and Muddy Creek areas. The western part of the County contains Nunn, Dacono, Platner, and Truckton soils which have supported intensive production of vegetables, sugar beets and corn in years past. Agriculture continues to be important in this area, but much of the best crop land has been urbanized. Further east the good soils are predominantly Weld, Ascalon, and Adena sandy loams which support dryland crops or are spray-irrigated from wells. Poor soils throughout the County tend to be associated with watercourses. In some cases the limitations are caused by wetness, in others by excessive slope. Stream valleys also contain gravelly soils and several clay soils which are not suitable for cultivation.

Development Suitability

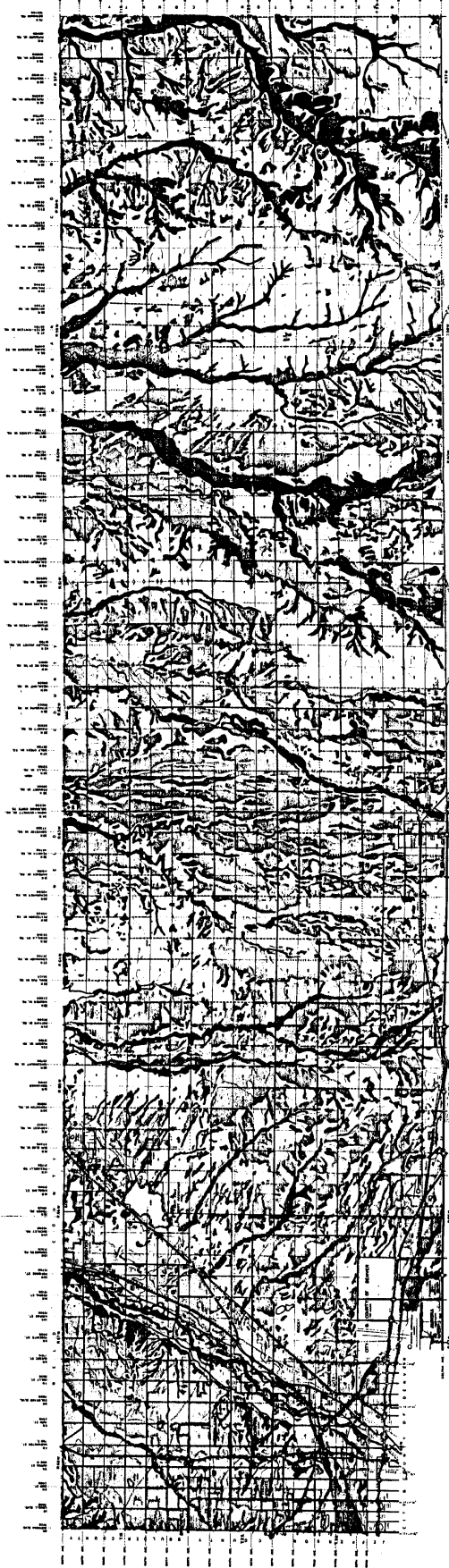
Some soils in Adams County have excellent development suitability and offer few limitations to construction of buildings, roads, reservoirs, or other major structures. Other soils require careful engineering or excavation to be useful. In a few areas, soils are totally unsuitable for development, usually because of wetness or flood hazard.

In those rare cases where totally new areas are scheduled for urbanization, development should be directed towards the most suitable soils. Where there are existing investments in roads, sewer and water systems, and other public facilities, however, it may be more economical to overcome soil limitations through sound engineering and construction practices.

The Development Suitability Map indicates areas which have development limitations and the reasons for those limitations. The problem soils can be generally grouped into four types:

- 1) Renohill, Terry, and Ulm soils are derived from fractured shale and sandstone parent material. This material lies from 12 to 48 inches underground and poses a threat to foundations, basements, and utilities because of its instability;
- 2) Samsil and Samsil/Shingle are clay soils with a high shrink-swell potential. These soils must be kept at a constant moisture level to prevent expansion or contraction of the soil causing damage to building foundations. Arvada, Dacono, Deertrail, Heldt, Platner, Nunn, and Ulm soils have clay subsoil layers of varying thickness. These layers also have a high shrink-swell potential which can require some building modifications;
- 3) Loamy Alluvial Soils along watercourses generally have seasonally high water table problems. Even when these soils are above the 100-year flood plain they may be unsuitable for buildings with basements;
- 4) Gravelly Shale, Gullied Land, Rough Broken Land, and Terrace Escarpments are actually land forms rather than soil types. They are unsuitable for development because of their rough and unstable nature.

It is unfortunate that most of the local soils having poor development suitability also have limited or variable agricultural potential. From a planning standpoint it would be desirable to urbanize those areas not suitable for food production, leaving prime farm land undeveloped. There are, however, several soils with good building properties that are not classified as good farm land. These include Blakeland, Valent, Wiley, and Stoneham, plus several soil complexes which contain these types.



IV-1

AGRICULTURAL SUITABILITY
 Source: United States Department of Agriculture Soil Conservation Service

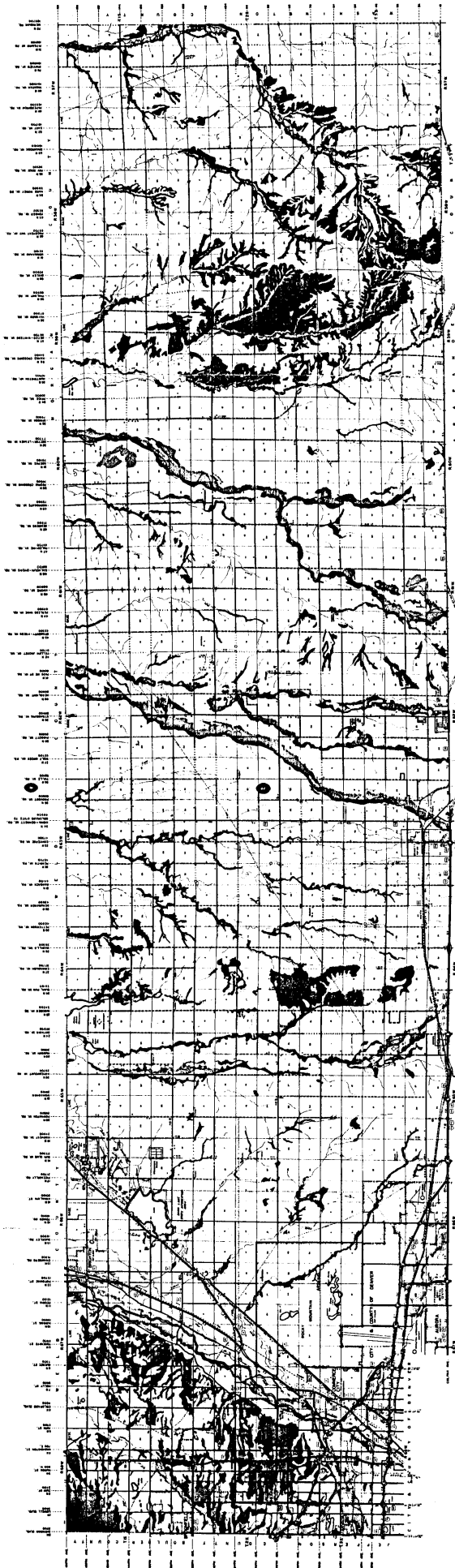
LEGEND



ADAMS COUNTY COMPREHENSIVE PLAN

PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1983





DEVELOPMENT SUITABILITY
 Source: Adams County Planning Department/Soil Conservation Service 1980



ADAMS COUNTY COLORADO

LEGEND
 POOR - SHALLOW WATER TABLE
 OR MOD. LAND SURFACE
 POOR - FRACTURED SHALE AT DEPTH, MOD. SPRING, S. WELL
 GOOD

ADAMS COUNTY COMPREHENSIVE PLAN
 PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1983



The Development Suitability Map is not intended to be a substitute for field surveys and test borings. Soils can vary widely, even within SCS mapping units, and each building site must be investigated thoroughly before construction begins.

Erosion Potential

Adams County has prepared a set of "Erosion and Sediment Control Design Criteria" for inclusion in the Subdivision Regulations. In addition, the County has also prepared fragile soils regulations to be included in the Zoning Regulations. The design criteria seek to minimize soil erosion and associated water pollution that often accompany land development. Certain soils in Adams County, notably Adena, Colby, Heldt, Samsil, Shingle, Arvada, Renohill, and Wiley have relatively impermeable clay close to the surface. This impermeable layer causes rapid runoff on sloping land, thereby accelerating downstream erosion. Sandy soils will also erode quickly under running water, but their permeability retards surface flows except under heavy rainfall conditions.

Many soils in Adams County are also subject to wind erosion when their grass cover is removed. This is a common problem in the eastern part of the county where eroded places are referred to as "blow-outs." Prevention of wind erosion is primarily a matter of good conservation practice. Farmers and Soil Conservation Service personnel realize that Dust Bowl conditions are possible at any time on the High Plains without sound land management.

The U. S. Soil Conservation Service has designated certain soil class conditions for its federal mapping program. In Adams County, soils that have been designated as Class VI and VII are referred to as "fragile soils" and have been recognized through the County's Zoning Regulations. Certain procedures are required for approval before ground can be broken out (plowed) in these areas defined in the soil survey of Adams County, Colorado (1974). Traditionally, these lands have been used for grazing purposes because plowing would lead to severe erosion problems damaging private and public property and negatively affecting human health levels. The State Dust Blowing Act, passed in 1954, deals with damages from soil erosion; whereas the "fragile soils" concept deals with preventing soil erosion before it happens. It is encouraged that these lands be retained as permanent pasture through compliance with the federal guidelines or utilized in conjunction with conservation plans required by the Adams County Zoning Regulations.

Stormwater Disposal

The permeable soils in Adams County are tremendously helpful in filtering and disposing of stormwater. Most of the soils formed from wind or alluvial deposits are sandy and well-drained. Even soils with a silt or clay layer near the surface often have well-drained subsoils. Only areas with fractured shale/sandstone subsoils and areas with a seasonally high water table are unsuitable for subsurface disposal.

The advantages of subsurface disposal are:

- 1) Cost - Detention ponds and percolation pits reduce the need for expensive stormwater collection systems. Extensive culverts are not required because runoff is contained on-site.
- 2) Water Quality Improvement - Eighty-seven percent of Adams County rainstorms produce less than a half inch of runoff from paved surfaces. Yet this stormwater, particularly the "first flush" after a rain begins, carries many pollutants to streams and lakes. Permeable soils can filter these pollutants before the water migrates to surface bodies.
- 3) Ground Water Recharge - Allowing water to seep in rather than run off makes it available to well users. The large alluvial gravel deposits in Adams County act as a storage reservoir to hold water for later use. Surface water, by contrast, is rapidly lost downstream.

Conclusions and Recommendations

Soils are a renewable resource in Adams County which can be damaged or used unwisely through poor planning. A great deal of agricultural potential has already been lost to urbanization and considerable development has occurred on poorly suited soils. The objectives and policies, as listed in Chapter II, will help balance the needs of a growing population with the need for sound development and sustained agricultural production.

Source:

- 1) U. S. Department of Agriculture, Soil Conservation Service in cooperation with Colorado Agricultural Experiment Station Soil Survey of Adams County, Colorado by John J. Sampson and Thomas G. Barber, Washington, D. C., U. S. Government Printing Office, 1974. Much of the information in this section is taken from this reference. Quote from Page 1.

Plants and Wildlife

Adams County lies within the High Plains ecosystem which is typified by blue grama and buffalo grass in upland areas, wheatgrass and bluestem in valleys, and cottonwood/willow stands along some watercourses.¹ Native animals include rabbits, mice, moles, antelope, skunks, coyotes, weasles, deer, bobcats, prairie dogs, ferrets, and many types of birds. Agriculture, irrigation, and human settlement have so altered the native environment, however, that few natural areas remain. One of the largest is the Rocky Mountain Arsenal which has not been farmed since 1942 and has returned to native grasses and animals.

Plant Communities

Plant communities in Adams County can be divided into four types, based primarily on available moisture and human activity.

Cultivated Lands

Cultivated lands include sod farms, irrigated farms, and dry farms. They can be characterized as monocultures because individual fields, which are often quite large, usually contain only one plant species. Uncultivated areas along ditch and road banks, fence rows, and fallow fields contain a wide variety of weeds. Crop lands provide a critical food source for wildlife, particularly migratory birds.

Uplands Range

Range areas in Adams County are common and are closer in species composition to native communities than other areas. Lightly grazed prairie will contain a mixture of tall grasses and short blue grama and buffalo grass. Heavier grazing eliminates the tall grass and causes the short grasses to increase. Overgrazing weakens the short grasses and allows the introduction of annual weeds. Range areas are critical to the survival of many native animals, particularly the prairie dog, antelope, and blackfooted ferret which is a prairie dog predator.

Flood Plains

Along watercourses and around the edges of some lakes is a distinctive plant community of great variety. Native trees were primarily cottonwood, willow, and box elder, with scattered thickets of plum, chokecherry, and hackberry. Several non-natives, particularly Russian olive, have adapted and spread into flood plain areas without human assistance.

Flood plain plants are critical to the survival of many birds and animal species. Trees and shrubs provide the only nesting cover available in Adams County outside of residential

areas. Flood plains have been used for agriculture, gravel mining, and industry for many years so there are relatively few areas which have not been disturbed. Fortunately the original plant community recovers quickly after farmland is abandoned or mining ceases.

Urban Residential Land

Adams County was settled by a variety of people, many of whom were from eastern or midwestern states. They brought with them many eastern tree and shrub species, plus a desire for green lawns and gardens. Today much of the water used in urban areas goes to irrigate non-native plants. In older areas this vegetation is often quite dense and supports human-tolerant animal species such as squirrels and songbirds.

Endangered Species

Many of the animal species in Adams County have already been mentioned. Except for antelope, rabbits, and prairie dogs, few of the land species are seen. Birds, on the other hand, are visible and numerous in many parts of the County. Several endangered species which may exist here should be mentioned.

Black-Footed Ferret

This prairie dog predator lives in short grass prairie areas. The decline in prairie dog habitats sharply reduced the numbers of both species, but the ferret was more severely affected because its numbers were never large and because it appears less tolerant of man than the prairie dog.

Peregrine Falcon

The American peregrine rests in cliff areas and preys on small birds. Although it is doubtful that any peregrines nest in Adams County, the abundant bird population here may attract individuals that are feeding.

White Pelican

White pelicans may be found at several reservoirs in Adams County, but probably do not nest here. They are not endangered nationally, but are rare in Colorado.

River Otter

River otters were once common in many North American rivers, including the South Platte. Trapping and habitat encroachment have considerably reduced their numbers and range. It is possible that otters exist in the South Platte in Adams County since they are occasionally sighted downstream in Weld County.

Barr Lake

Barr Lake State Park southeast of Brighton is important to a large and varied waterfowl population which either nests in or migrates through Adams County. Species include ducks, geese, herons, cormorants, white pelicans, bald eagles, and peregrin falcons. The Lake provides cover and nesting space for many of these birds while the surrounding agricultural areas provide food for others. Other lakes and ponds in the County also attract waterfowl, and provide hunting dens.

Fish Populations

Fish populations in Adams County are dependent upon two key variables discussed in detail in another section of the Plan: water quantity and water quality. The South Platte River and many lakes in the County will support healthy fish populations if a minimum water level is maintained and water pollution is controlled. For the most part fish in the County are warm water species such as bass, sunfish, catfish, perch, carp, dace, and suckers. Several species of trout, which are cold water fish, can also be found in the South Platte and in ponds where they have been stocked. There are no species considered endangered which live in Adams County waters.

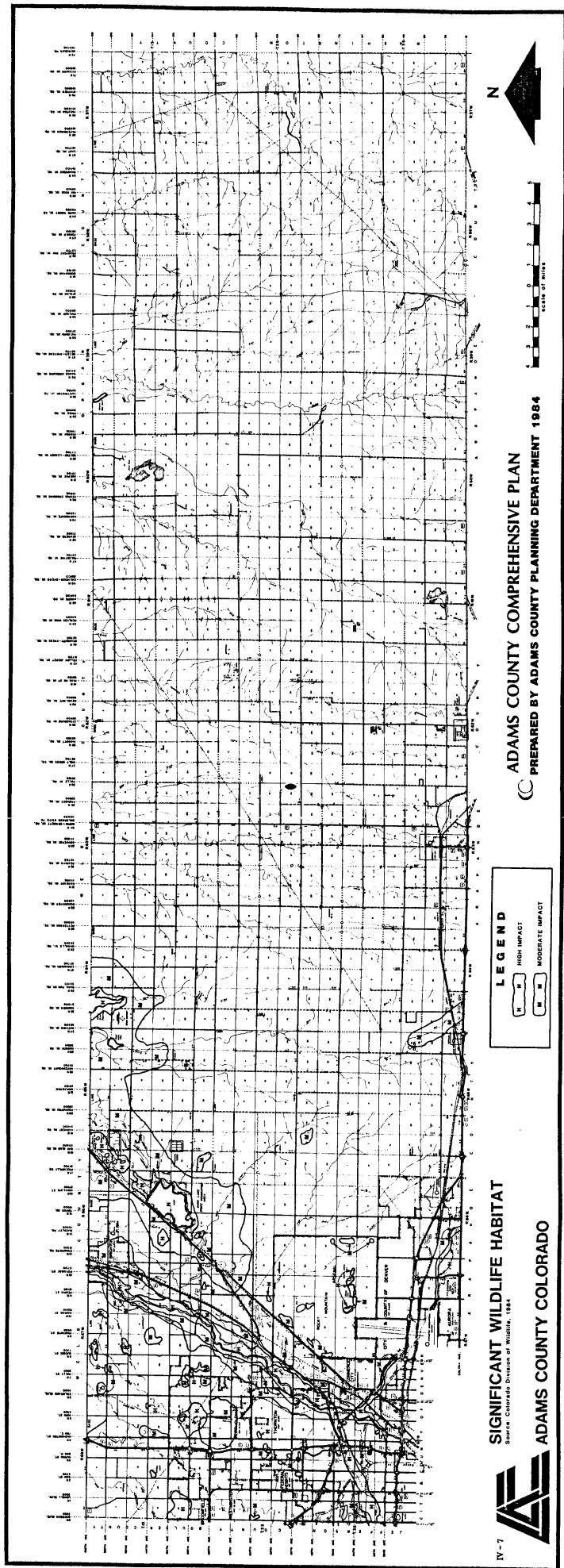
The healthy condition of fish populations in Adams County is quite remarkable. Until the late 1960s the South Platte was essentially "dead" because of urban runoff and point source pollution. Barr Lake, which is fed from the South Platte via the Burlington Ditch, was also heavily polluted. Since that time gradual improvements have been made, reaching a point that regenerative fisheries have been established in both the River and Barr Lake.²

Conclusions

Healthy wildlife populations are a benefit to Adams County. They help stabilize the ecosystem, provide enjoyment to observers, and represent measurable assets for hunters and fisherman. Wildlife needs food, cover, safe places to reproduce, and a relatively clean environment. The objectives and policies, as listed in Chapter II, will help enhance wildlife resources in Adams County.

Sources:

- 1 Environmental Impact Statement on Management Plan for Wastewater Sludge by Metropolitan Denver Sewage Disposal



IV-7



SIGNIFICANT WILDLIFE HABITAT

Source: Colorado Division of Wildlife, 1984

ADAMS COUNTY COLORADO

LEGEND

HIGH IMPACT
MODERATE IMPACT

ADAMS COUNTY COMPREHENSIVE PLAN

PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1984

District No. 1. Denver: Engineering Science, Inc., 1976.
Much of the information on the natural environment of Adams County was taken from this report.

- 2 The numbers and diversity of fish in the South Platte were demonstrated in samples taken by U. S. EPA, Colorado Department of Health, and Colorado Division of Wildlife staff in November 1981. The health of Barr Lake fish has been repeatedly demonstrated by creel surveys of fisherman using the State Park.

Chapter V

MAJOR GROWTH FACTORS

Transportation

The significant growth that is forecast for Adams County in the near future will require that the capacity of the transportation system be expanded to accommodate development. DRCOG forecasts that in the next 25 years the County population will increase by 73% to 450,400, and the number of people employed in the County will reach 248,900. The results of recent transportation plans and studies that were done to anticipate deficiencies need to be reflected in the Adams County Comprehensive Plan at this time. A timely update is the first step in an effective, coordinated, forward-looking plan for system improvement. Where the Plan anticipates development, a supporting transportation network can be provided for mobility and access. The benefits are efficient movement of people and goods, coupled with increased communication and access to services and amenities.

The existing system in the County is basically formed by the Township, Range, Section grid. Property lines tend to fall along section lines in undeveloped areas, and later subdivision boundaries reflect this. Arterial routes tend to follow the section lines which are spaced at mile intervals. Modifications to the grid are caused by geographic and physical constraints. In the County the major barriers to the continuity of the section-line grid are the South Platte River Corridor, Clear Creek, Barr Lake, the Interstates, the Rocky Mountain Arsenal, and the diagonal roadways and rail lines that follow the waterways. Geographic Subareas which have distinct characteristics are shown in Figures 1 - 4, which include the Southwest Area, Platte Corridor, Northwest Area and the Aurora Area.

Among the current Subarea issues is how to provide a transportation system that will support the land uses surrounding the new airport, and how to provide regional access especially from the currently urbanized areas. One major obstacle is the Rocky Mountain Arsenal which lies between the site and the majority of the existing urban areas. Of course, the impact that the new airport site will have on E-470 cannot be overemphasized, and a final alignment between I-76 on the north and I-70 on the south awaits airport site designation. The needs of the transportation industry as it relates to the airport, be it trucking, railways, and other air facilities are also important. The Airport Planning Area is not shown in the Figures. A transportation system plan for the area will be prepared as part of the Airport Land Use Plan, in 1987.

PLATTE CORRIDOR ISSUES

- *BARRIER TO GRID CREATED BY S. PLATTE RIVER
- *DIAGONAL REINFORCEMENT BY U.S. 85, I-76 & ADJACENT RAIL LINES
- *AWKWARD INTERSECTIONS BETWEEN DIAGONAL & PREDOMINANT GRID
- *REGIONAL EAST-WEST DISCONTINUITY BECAUSE OF BARRIERS & SHORTAGE OF RIVER CROSSINGS
- *PHYSICAL CONSTRAINTS TO E-470
- *BARRIERS CREATED BY BARR LAKE & ROCKY MOUNTAIN ARSENAL
- *BRIGHTON & COMMERCE CITY GROWTH AREAS

FIGURE 1

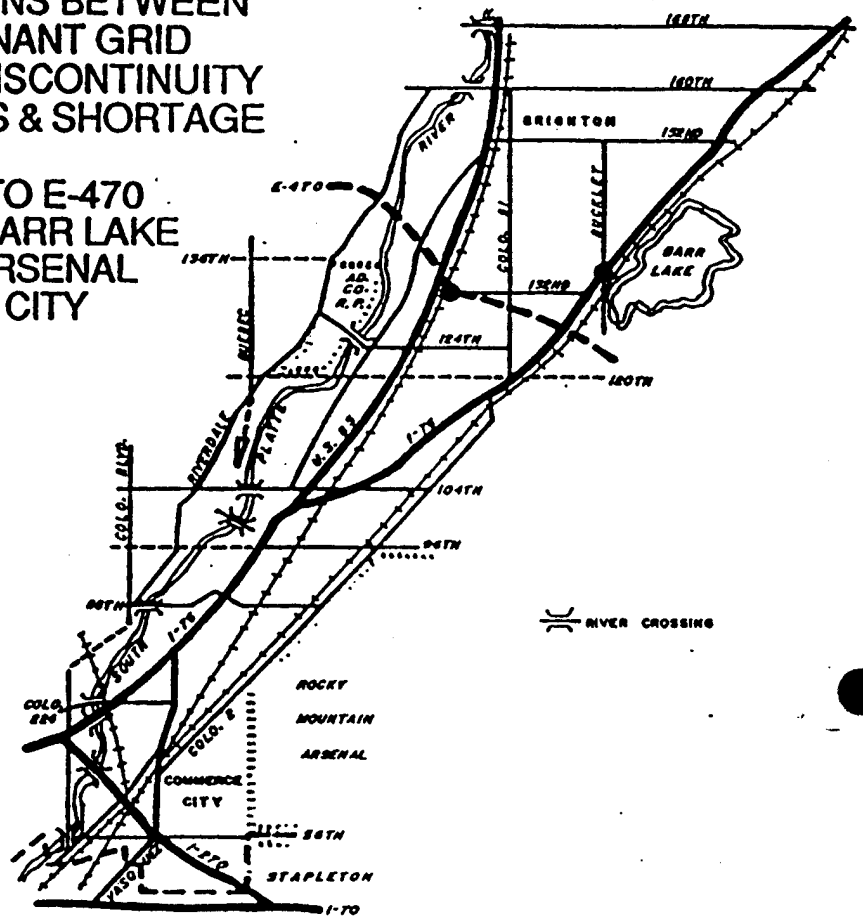


FIGURE 2



SOUTHWEST AREA ISSUES

- *OLDER DEVELOPMENT STANDARDS
- *BARRIERS TO EAST-WEST CONTINUITY CREATED BY CLEAR CREEK & I-76 DIAGONAL
- *CONCENTRATION OF RAIL FACILITIES
- *HEAVY VOLUME OF TRAFFIC BECAUSE OF PROXIMITY TO DENVER CENTRAL BUSINESS DISTRICT
- *CONCENTRATION OF INTERSTATE INTERSECTIONS
- *WILL REMAIN COUNTY RESPONSIBILITY RATHER THAN BEING TAKEN OVER BY MUNICIPALITIES

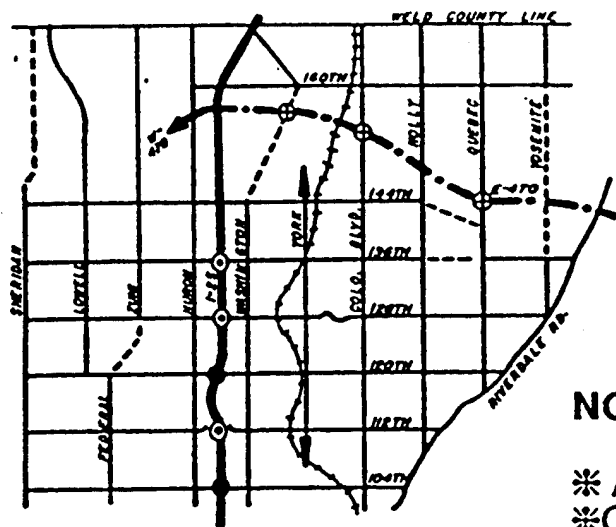


FIGURE 3

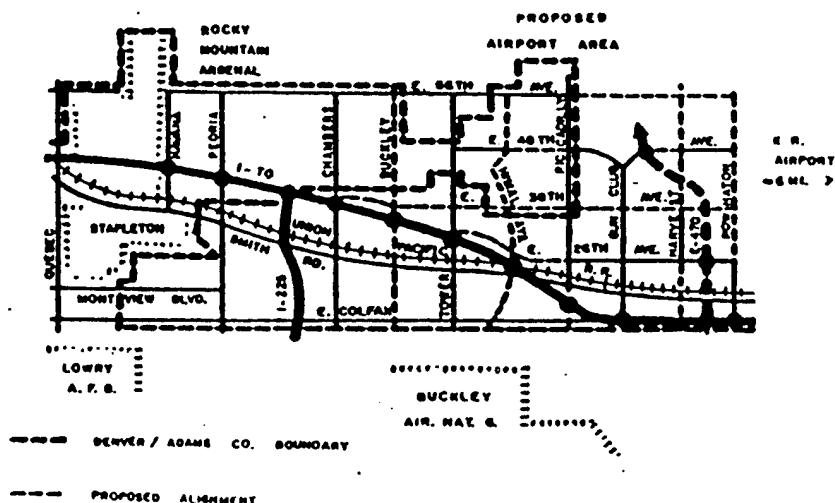
NORTHWEST AREA ISSUES

- * AREA OF NEW DEVELOPMENT PRESSURE
- * OVER 50 % OF THE ARTERIALS UNIMPROVED
- * RESPONSIBILITY FOR FINANCING OFF-SITE IMPROVEMENTS
- * PROPOSED INTERCHANGE LOCATIONS AND ADJACENT LAND USE
- * POTENTIAL ANNEXATIONS IN MUNICIPAL GROWTH AREAS
- * E-470, ALIGNMENT & FINANCING
- * W-470, ALIGNMENT & FINANCING
- * MULTI-JURISDICTIONAL COOPERATION

AURORA AREA ISSUES

- * ISOLATED FROM OTHER DEVELOPED AREAS IN THE COUNTY BY STAPLETON, DENVER, & ROCKY MOUNTAIN ARSENAL
- * ANTICIPATING IMPACT, AND PLANNING FOR NEW AIRPORT SITE, AND THE SURROUNDING LAND USES
- * EXTENSIVE AURORA ANNEXATIONS
- * ACCESS TO FRONT RANGE AIRPORT, INCLUDING LINK TO NEW AIRPORT

FIGURE 4



On a County wide basis, transportation concerns include the following:

- (1) Long term deficiencies of Interstate 25:
 - Options are being considered to increase accessibility with interchanges, and increase capacity by adding high occupancy vehicle lanes.
- (2) North-south alternatives to Interstate 25:
 - Discontinuity at 120th Avenue, west of I-25. To the North, Lowell and Huron are expected to dominate, whereas to the south Federal and Pecos are major arterials.
 - East of I-25 there is a problem of alignments of section line roads as they approach the River, with its associated diagonal alignments of roadways and rail lines. Alignments for the Quebec Parkway and Colorado/York need to be finalized. I-70 also creates a barrier to the flow of traffic into Denver.
- (3) East-west discontinuity:
 - As development occurs in the northwest and in the new airport area, east-west traffic will increase compounding the existing insufficiency. Barriers to continuity include the US Highways and Interstates, the River and its limited crossing points, the Rocky Mountain Arsenal, and Barr Lake. In addition, the confluence of transportation network elements, including rail facilities, makes the area south of 92nd/96th very difficult to cross.

The roadway network can be thought of as a hierarchy of functionally classified streets ranked in order of importance. Streets can be differentiated according to their predominant purpose, their ability to move traffic through an area or their ability to provide access to adjacent land uses. To maximize efficiency and minimize infrastructure costs, the goal is to concentrate traffic on a limited arterials system. In general, major arterials constitute 5 to 10% of a network and carry 30 to 40% of the traffic.

A description of characteristics of the typical hierarchy follows.

Regional Thoroughfares (Freeways, Expressways, Principal Arterials)

Primary Function - Traffic Movement

General Characteristics - Inter-regional and inter-city, metro-wide; .5 to 3 mile spacing in urban areas; mainly continuous grid; located mainly in path of community separations and often defines boundaries of development, often commercial corridor.

Design and Service Characteristics

Freeways:

Volume/Lane/Hour: 2,000
Speed: 50 - 55 mph
Through Lanes: 4 - 8
Ideal right-of-way: 200 - 300 feet
Access Control: 1 mile minimum Interchange spacing at major cross streets; minor cross streets terminated; no private access.

Expressways:

Volume/lane/hour: 1,100 - 1,500
Speed: 40 - 55 mph
Through Lanes: 4 - 6
Ideal right-of-way: - 150 - 300 feet
Access Control: 1/2 to 1 mile interchange/ intersection spacing at intersections at major cross streets; minor cross streets terminated; few private access points allowed.

Principal Arterials:

Volume/lane/hour: 750
Speed: 25 - 40 mph
Through Lanes: 4 - 6 Urban, 2- 4 Rural
Ideal right-of-way: 120 -160 feet
Access Control: 1/8 to 1/2 mile at-grade intersection spacing; private access limited,

Minor Arterial

Primary Function: - Traffic Movement
Secondary Function: - Access to Abutting Property
General Characteristics: - Inter-city and inter-community; .5 to 1 mile spacing in urban areas; continuity extended from principal arterial grid; tend to form neighborhood boundaries.

Design and Service Characteristics:

Volume/lane/hour: 600
Speed: 25 - 35 mph
Through Lanes: 2 - 4
Ideal right-of-way: 80 - 120 feet
Access Control: 1/8 to 1/2 mile at-grade intersections spacing; some restrictions on private access.

Collectors:

Primary Function: - Collect traffic from local area and channel onto arterials.

General Characteristics: - Within communities; .25 to .5 mile spacing; continuous within neighborhoods, may extend several miles.

Design and Service Characteristics:

Volume/lane/hour: 500
Speed: 25 - 30 mph
Through Lanes: 2
Ideal right-of-way: 60 - 80 feet
Access Control: 1/8 mile minimum intersection spacing, some minimum restrictions on private access

Locals:

Primary Function: - Direct access to abutting property
General Characteristics: - Within neighborhoods; 300 - 800 feet; not necessarily continuous with grid

Design and Service Characteristics:

Volume/lane/hour: N/A
Speed: 10 - 25 mph
Through Lanes: 2
Ideal right-of-way: 50 - 80 feet
Access Control: 1/8 mile minimum intersection spacing, no restrictions on private access

Traffic is distributed on the roadway links of the arterial system according to the origins and destinations of trips. Trip distribution is related to the type of land uses that the system serves. For example less intense uses such as residential areas generate more dispersed trips, whereas commercial areas concentrate trips and increase traffic volume.

In the County, the system is related to urban land uses in two patterns. The first is in undeveloped or sparsely developed, areas that are in the path of municipal growth, and will be urbanized in the next 20 to 30 years. The role of, and cost allocation to the various parties, such as the County, the cities, and the developers, needs careful examination. Which entity will take care of construction, improvements and maintenance, which standards will be used, and the phasing of development all have to be considered. The second area, the older urbanized area, has older standards for right-of-way and construction. Infill development and redevelopment must be fitted into an already existing pattern. Also, the financial burden is different as development agreements rarely exist to help improve the developed areas retro-actively.

The extent of developer participation in paying for the transportation system is a major issue of the 80's. As public funding dwindles, there is an increasing need for the private sector to help pay some of the expenses for development related

impact on the community. Up until now, developers in the County usually paid only for the roadway system within the subdivision boundaries, construction of adjacent roadways, and off-site improvements only if they were needed to provide access to the location. However, there is no way to avoid off-site impact of development because the system is not self contained, and there are trips generated to other parts of the system. A process that involves traffic impact studies and development impact fees is a comprehensive and more equitable way to have the community assess transportation system development costs. A related issue is some type of value capture at interchange locations on limited access roadways where the value of land is dramatically increased by its location at a major access point. Allocation of these points in a transportation plan and their impact on privately financed facilities such as E-470 are issues worth addressing.

The impact of the transportation system is measured not only by financial costs, but in terms of environmental costs as well. The very southwestern portion of the County is an example of the fact that transportation systems because of their nature and scale, can be disruptive on the environment, be it natural or man made. The most obvious impact is visual. The system can tear through the urban fabric and natural setting of communities. It is difficult to merge an efficient system into a cohesive community. Also, the visual impact can be important because the transportation network often provides the first impression of a community. Designed as a system intended to promote community development, it can instead make it difficult for a community to function. Mitigation measures such as landscaping and buffering requirements are often necessary.

The impact on the physical setting in which the system exists also needs to be mitigated. Topography, drainage, and soils are all factors. The changes anticipated on wildlife, vegetation and erosion potential are other factors. There can also be a conflict with open space, as is the case of W-470. Often open space offers the last undeveloped corridors between urban areas, so there is pressure to use it for transportation. Pollution is another well know result of transportation. Air pollution is a cost of the intense use of the automobile. Lastly, noise pollution is a price paid, especially along high speed facilities. For example, noise barriers are planned along part of U.S. 36 because development is not set back far enough. Also, noise impacts are one of the leading evaluation criteria being considered in development of the new airport.

Rather than continuing to spread out transportation facilities that are expensive to maintain and have the other negative impacts, an economical alternative is to increase the carrying capacity of the existing system. Reducing the volume of daily trips is one goal. Land uses that integrate uses or place a variety of uses in close proximity can be designated. Another method is to increase the occupancy of vehicles from more than one person all the way up to buses and fixed guideway

alternatives. At this time the feasibility of HOV (high occupancy vehicle) lanes is being examined for corridors along I-25 and U.S. 36.

Another reason to carefully consider and incorporate transit into the transportation plan is the need for affordable service for the non-driver. Non-drivers including youths, the elderly and handicapped, or households that do not have access to more than one vehicle, need mobility and access also. In addition to transit, the system should provide routes for non-motorized transportation including pedestrians, bicycles and wheelchairs. Paths, sidewalks and ways to access properties in safety need to be added to the overall plan. These other modes are also important for recreational access where motorized traffic is inappropriate.

A discussion of multi-modal transportation would not be complete without mention of other means of transportation. Railroad facilities are plentiful in southwest Adams County and ways must be found to work with the railroads, especially at the points where the roadways intersect the rail lines. Industrial land uses, mineral resources mining, and construction of new development all contribute to truck traffic in the County. A method must be utilized to provide mobility for the trucking industry while mitigating impacts it may cause. Some of the special considerations are the type of neighborhoods through which they pass, the road surface, dust abatement if they travel on gravel roads, and roadway design standards on routes used by trucks, to ensure function and safety. The last transportation mode is air travel. Airport area planning is addressed in other parts of the Comprehensive Plan.

Transportation Plans are only as good as the way in which they are actually implemented. Planning takes place for different time frames. The Comprehensive Plan has a long range time frame. The County Department of Highways and Engineering, and Development Review section of the Planning and Development Services Department are faced with immediate concerns. A planning gap tends to fall between the short and long range time frames. Engineering design standards and land use regulations are the logical link. They specify how the system will actually be developed. Also, the County resource allocation process is very important to implementation. The Capital Improvements Program, and the program prioritization that is involved in the process, are essential to good planning. However, the process should not be confined to capital improvements but should look to all system priorities that are essential to the future.

To conclude this section a list of key issues for current planning has been included:

- The alignments for 96th Avenue and Quebec Parkway.
- Alignments to be determined as identified on the Transportation Map.
- Airport Area Transportation Plan.
- E-470, alignment, financing and phasing, and possible continuation to the west as W-470.
- Increasing the capacity of I-25 and U.S. 36 with HOV alternatives.
- Development Impact Fee system.
- Coordinated planning with municipalities.

Stapleton International Airport

Stapleton International Airport is the most important public air transportation facility in the Rocky Mountain Region. Stapleton is a major "Hub", or connecting point, in the nation's airport system, with approximately 60 percent of the passengers making connections from one flight to another. Stapleton's role as a hub in the national airport system, combined with Denver's rapid population and employment growth during the past two decades, have led to Stapleton becoming the fifth busiest airport in the nation in terms of passenger traffic.

The airport is a major economic asset to the region, directly employing 21,000 persons in 1985. In addition, approximately 119,000 jobs are indirectly generated by airport activities. These include jobs created by firms which provide goods and services to the airport, tourism and travel dependent jobs, and jobs in firms dependent on access to a major airport.

Stapleton's success has led to increasing strains on the airport's ability to accommodate air traffic demand. The Denver metropolitan region has recognized for several years that there is a need for new airport facilities, and that the region's economic growth and prosperity are inextricably linked to providing those facilities.

On January 28, 1985, Adams County and the City and County of Denver signed a memorandum of understanding regarding the location, configuration and use of a new airport to be built in Adams County. This agreement ended several years of conflict between Adams County and Denver over plans to expand Stapleton onto the Rocky Mountain Arsenal, a proposal which Adams County strenuously opposed due to increased noise impacts to County residents. The agreement signalled a mutual commitment between Adams County and Denver to move forward as partners in solving the problem of locating a new regional airport. The agreement calls for enforceable assurances that noise and other adverse

impacts will not harm Adams County communities, and for the close down of the existing Stapleton to air traffic.

The Memorandum of Understanding set in motion an airport planning process and provided the basis for continued negotiations between Adams County and Denver towards concluding a binding and detailed intergovernmental agreement regarding the construction of a new airport. The new airport is expected to be open by 1995.

Adams County Airport

The Regional Airport Systems Plan prepared for the Denver Regional Council of Governments recognizes the need for additional general aviation "reliever" airports in the Denver Metro Area. These airports are called relievers because they can take some of the slower corporate and private air traffic away from Stapleton International, increasing its ability to handle commercial planes. More time is often required for a single-engine plane to land than a wide-bodied jet, and the primary responsibility of the hub airport in a regional system is to accommodate air carriers.

The Adams County Board of Commissioners recognized the need for reliever airports and constructed Front Range Airport in the south central portion of the County. The Federal Aviation Administration has been enthusiastic about the project and has provided funding for eighty percent of eligible costs.

The airport is located four miles east of Watkins, just north of Interstate 70. Access to the facility is by Manila Road which runs to the east of the site and has an interchange on I-70.

The airport has been designed to ultimately handle a maximum of 580,000 aircraft operations per year and to accommodate 1,100 based aircraft. Most of the based aircraft and the aircraft operations will be of the small, singleengine type, but a significant number of these are expected to be larger business or even air cargo aircraft. The runway will be constructed to routinely support aircraft weighing 70,000 pounds (DWG). Airports with these capacities are designated "Basic Transport Airports" by the FAA.

Front Range Airport is expected to generate considerable growth in the Watkins-Bennett area. A business-industrial park expected to develop adjacent to the site will increase employment and boost the economy of the County. Many of the tenants of this park will be airport-related industries whose products are high in value and low in weight. The park will also be a convenient location for business offices which require quick access to air transportation.

The development around the County airport must be carefully planned because both the Airport and future residents and property owners need to be protected from incompatible uses. Water and sewer systems and fire and police protection will have to be provided for airport-related development. These services will require capital investments which are currently beyond the means of the existing rural communities.

In July, 1982 the Airport Master Plan Study, Front Range Airport, by Isbill Associates, Inc. was published. This Plan will guide development of the Airport as it grows towards its ultimate design during the next 20 years. Implementation of the Plan is the responsibility of the Airport Authority which can issue revenue bonds, apply for FAA grants, and contract for construction of facilities.

Surrounding the Airport is an Airport Influence Zone (AIZ) encompassing 81 square miles, 63 in Adams County and 18 in Arapahoe County. The AIZ was established by the Adams County Commissioners to protect the Airport from incompatible land use and to guide all new development, whether or not it is directly associated with the Airport.

The AIZ is established in two phases. The Preliminary AIZ, which was adopted in April, 1982, halts most development within the zone for up to nine months while a land use plan is prepared. The Final AIZ which was adopted in August, 1983 specifically identifies the types of development which will be allowed near the Airport, plus the types of development which will be encouraged in the rest of the AIZ. These uses are recorded in the form of a land use plan and are adopted by the County Planning Commission and Board of County Commissioners.

Conclusions

Adams County receives economic benefits from having convenient access to Stapleton International and it suffers from the aircraft noise the facility generates. Likewise, Front Range Airport presents new opportunities and poses new problems. Careful planning will be necessary to receive the fullest benefit from the money spent on both of these facilities.

Sources: _

1. City and County of Denver, New Airport Master Plan Study, Briefing Paper Number 2: Forecasts and Airport Requirements, Denver, Colorado, April 1986.
2. Booz-Allen and Hamilton, Inc., The Regional Economic Impact of Stapleton International Airport and Future Airport Development: Summary Report, Bethesda, Maryland, September, 1986.

Water Supply and Sewage Treatment

Colorado's High Plains, which include Adams County are characterized by a semi-arid climate and an average annual precipitation level of 12-14 inches of moisture. When one considers that the County's annual evaporation rate is 55 inches per year, it becomes obvious that other sources of water are necessary for urban development and many types of agriculture. If water were not stored naturally in the mountain snowpacks and the County's underground aquifers, dry land farming would be the County's only form of agriculture, and urban development would be severely limited. The availability of potable water is a prime requisite for population and economic expansion.

Sewage treatment capability is also necessary for urban development. Water alone can sustain farming and rural subdivisions using septic tanks, but sewer lines are needed at higher densities. The effluent from subdivisions, apartment complexes, and offices would overwhelm a septic system, and industrial effluent, often untreatable by biological means, would pass through a septic tank untouched. Sewage treatment plants and collection lines are expensive to install. Where these facilities are already available, urban development can take place immediately without the need for costly utility "groundwork". Because of this, existing sewer service is also an important growth factor.

Overview

Adams County is reasonably well located in relation to water resources, and the topography poses few problems. With the mountains nearby and the South Platte River running through the western end, the County is in a good position with respect to overall water availability; but the fact that it is located downstream from most of the Denver urban area tends to lower local surface and near-surface water quality. Because of this location, many portions of the County rely totally or partially on upstream jurisdictions for available supplies.

History

The historical development of Adams County's economic base, population, and population characteristics closely resembles the historical development of its water resources. The largest proportion of Adams County's total land area - 55.4% - is devoted to dryland farming, or the raising of crops which are capable of thriving exclusively on the natural precipitation falling in the County. Almost another third, or 30.6%, of the County's area is kept in a natural "range" state for livestock grazing. Only 9.4% (around 118 square miles) of Adams County's total land area is irrigated for the raising of crops. The majority of the

irrigated land is intensively farmed each year, and produces some 10 major crop types. Most of this land was selected in the latter 1800s and early 1900s in conjunction with the planning of a vast network of irrigation canals and reservoirs branching from Clear Creek and the South Platte River. There were other successful diversions from Big Dry, Ralston, Woman, and Boulder Creek to the west, but attempts at diverting the intermittent streams in eastern Adams County proved uneconomical because flows were too sporadic.

Today, irrigation is managed by a number of ditch companies, several of which have service areas considerably larger than merely western Adams County. The larger companies include the Farmers Reservoir and Irrigation Co. (FRICO), Farmers Highline, Burlington-Wellington, Fulton, Brighton, Brantner, Henrylyn, Colorado Agricultural and the Lower Clear Creek Canal. A number of smaller irrigation companies such as the German, Allen, Rocky Mountain, Fisher, Community, and Thompson operate in the County as well. In total, there are somewhere in the neighborhood of 200 miles of larger and smaller canals, carrier ditches, and laterals in Adams County, and more than 80 storage reservoirs. About half of the canals are fed by high reservoirs located above the County which enable pre-planned flow scheduling between the operating companies and their users. The other half are operated on a "run-of-the-river" basis whereby their flows increase and decrease in accordance with the fluctuating stream heights found at their headgates. Run-of-the-river ditches have tended to promote the construction of individual on-farm storage reservoirs to enable flow regulation at those locations.

Urban Water Use

Only 5.7 percent of Adams County's total land area, or about 45,000 acres is in urban use. This is about half as much land as is currently irrigated. The rule-of-thumb among water supply planners is that each acre foot of water (326,000 gallons) annually requires about one acre foot of water (326,000 gallons) annually to provide an adequate water supply. In intensively developed areas the annual water use is higher, but the countywide average is about 333,000 gallons per acre, very close to the rule-of-thumb. This works out to 138 gallons per capita per day, a figure which is also in line with other urban areas. The highest per capita water use is found in industrial areas because heavy business use inflates the figures. Brighton citizens have also used a great deal of water, possibly because most connections were not metered until 1981.

Management Methods

A potable water supply and its recycling back into streams may be managed by a number of different techniques; many of these are used in Adams County. Water and sanitation districts have been established in unincorporated portions of the County as a

result of the direct property taxation powers that the Colorado legislature has provided this type of organization. Municipal water and sanitation departments are also common, as are non-taxing mutual water companies, water users' associations, and mobile home park systems. Some of the systems were originally independent, providing all of their own facilities and services, and subsequently began to merge with adjacent systems. Others began on the basis of inter-system contracts and arrangements, and have begun to plan and construct their own facilities since.

The biggest "disconnection" in recent years has been Northglenn's separation from Thornton's water system and the Metro sewage treatment system. The biggest "connection" was Thornton's agreement to sell water to Westminster sufficient to serve 20,000 people. Westminster is a wholesale customer of Thornton's under contract to buy 3 million gallons of water per day.

There have been more sewage treatment than water supply inter-system arrangements in Adams County for several reasons: 1) sewage treatment is more sophisticated and expensive than water supply; 2) there have been federal incentives to create fewer, larger, more strategically located sewer plants; and 3) the creation of the Metropolitan Denver Sewage Disposal District #1 (Metro) in 1961. Metro acts as the exclusive sewage treatment agency for almost half of Adams county's population, and it also acts as the final treatment agency or the overflow treatment agency for three local plants. The largest regional water source is the Denver Water Board which supplies much of the unincorporated southwestern corner of Adams County. Approximately 16% of all the water consumed in Adams County in 1981 was provided by the Denver Water Board. Thornton supplies several areas outside its city limits, while Westminster supplies the City of Federal Heights and Shaw Heights. Both Shaw Heights and Federal Heights also use their own deep well water resources.

Potable Supply Systems

There are currently 35 potable water supply systems in Adams County which serve 25 or more homes. These systems provide water for 91 percent of the County's population and a high proportion of its businesses and industries. Of the 35 systems, seven serve not only Adams County residents, but also residents of adjacent counties. Listing systems unfortunately does not tell the full story. Within Adams County there are seven water management agencies distributing Denver Water Board (DWB) water exclusively, and four others (Arvada, Broomfield, South Adams Water and Sanitation District and Crestview Water and Sanitation District) utilizing DWB water supplementation. The City of Federal Heights distributes Westminster Water. In other words, there are really a total of 41 potable water management agencies.

Recently, two smaller water systems, Town and Country Mutual Water Co. and the Sable Water District have dissolved. South Adams Water and Sanitation District is now serving the area served by Town and Country, and the City of Aurora took over the Sable Water District service area in August 1982.

Four Adams County water and sanitation districts currently exist only on paper. They are (1) the Box Elder Water and Sanitation District, (2) the First Creek Metropolitan District, (3) the Green Valley Metropolitan District, and (4) Barr Lake Village Metropolitan District. The First Creek and Green Valley Metropolitan Districts were granted approval in July, 1982. Both Districts will obtain their water from the Denver Water Board. They are located south of 64th Avenue between Buckley Road on the west and Picadilly Road on the east. The southern boundary is Denver's city limits. The Box Elder and Barr Lake districts propose using well water. They were formed several years ago but have never developed.

Existing Systems

The 35 larger water systems serving Adams County are outlined in Table V-1. The organizations which operate these systems are listed in Table V-2. The wastewater service areas are shown on Map V-2. There are a number of differences among various types of agencies. Special districts are formed by petition of the majority of landowners in a proposed service area. If the petition is approved by the County Commissioners and the District Court, a Board of Directors is elected by the area residents. Municipal water departments, on the other hand, usually are formed and managed by city council unless separate Boards are established by the councils for this purpose. Both districts and municipalities share financing advantages over private water agencies. Special districts possess direct property taxation authority over district residents through the County Treasurer's Office. Similarly, municipal water departments share portions of the taxation and financing advantages of their parent governments. Having these taxation advantages makes both entities eligible for bond financing for long range improvements. In contrast with governmental systems, privately operated systems usually subsist on the basis of tap fees and service fees. Since their financial bases are less dependable than those of the governmental systems, the private operators tend to make improvements on a "pay-as-you-go" basis.

Water Use

Table V-3 represents the annual water use of the larger potable supply systems in Adams County. Residents and businesses use about 15.4 billion gallons of water annually, or an average of 42 million gallons daily. Since the population served by the 35 systems is estimated to be 252,000, the use indicated is 172 gallons per capita per day (GPCD).

Table V-1
Population and Taps Served by
Water Supply Systems in Adams County, 1982

<u>System</u>	<u>Population</u>	<u>Residential Taps</u>
1. Denver Water Board	14,099	4,305
a. North Washington W & S	9,000	2,800
b. Berkeley W & S	2,500	940
c. North Pecos W & S	1,668	251
d. North Lincoln W & S	525	191
e. Northgate W & S	18	2
f. Mile High WUA	388	121
g. Fitzsimons Army Hospital	NA	NA
h. Rocky Mountain Arsenal	NA	NA
2. Aurora	30,000	8,937
* 3. Arvada	1,200	400
4. Brighton	13,000	3,183
* 5. Broomfield	5,600	1,388
6. Federal Heights	8,000	3,972
7. Northglenn	30,000	7,400
8. Thornton	62,000	12,400
9. Westminster	33,000	7,300
10. Bennett	1,200	400
11. Strasburg	800	263
. South Adams W & S	24,000	6,000
13. Crestview W & S	18,000	3,996
14. Shaw Heights	5,300	1,526
15. Hillcrest MHP	1,500	603
16. Eastwood Estates	875	350
17. Wikiup MHP	815	326
18. Mountain View	286	56
19. Green Acres MHP	515	206
20. Hi-Land Acres	372	124
21. Shady Meadows MHP	325	130
22. High Plains WUA	250	82
23. Westlake	247	66
24. Hazeltine Heights	195	65
25. Advanced MHP	175	70
26. North Washington WUA	138	46
27. A.A. MHP	123	49
28. Eastlake	106	62
29. Weisner Estates	91	26
30. Brighton MHP	80	32
31. Burr J. MHP	78	31
32. Cottonwood MHP	75	30
33. Peak View MHP	68	27
34. Aurora MHP	63	25
35. Prairie View	45	15
TOTAL	252,491	66,533

e Denver Water Board Water

Source: Adams County Planning Department from interviews.

Table V-2
Organizational Types of Potable
Water Distribution Agencies in Adams County

I. Government Agencies

A. Local Governments

1. Special Districts (15)

a. Combined Water and Sanitation Districts (12)

1. North Washington W. & S. D.
2. Berkeley W. & S. D.
3. North Pecos W. & S. D.
4. South Adams County W. & S. D.
5. North Lincoln W. & S. D.
6. Northgate W. & S. D.
7. Crestview W. & S. D.
8. Shaw Heights W. & S. D.
9. HiLand Acres W. & S. D.
10. Eastlake W. & S. D.
11. Westlake W. & S. D.

b. Water Only Districts (1)

1. Hazeltine Heights

c. Sewer Only District (1)

1. Bennett S.D.

2. General Purpose Governments (10)

a. Municipalities (10)

1. Denver
2. Aurora
3. Arvada
4. Thornton
5. Westminster
6. Broomfield
7. Brighton
8. Federal Heights
9. Bennett (water only)
10. Northglenn

B. Federal Agencies (2)

1. Fitzsimons Army Hospital
2. Rocky Mountain Arsenal

II. Private Agencies and Organizations (20)

A. Homeowners Associations and Mobile Home Parks (16)

1. Hillcrest MHP
2. Eastwood Estates
3. Wikiup MHP
4. Green Acres MHP
5. Shady Meadows MHP
6. Advanced MHP
7. A.A. MHP
8. Brighton MHP
9. Burr J. MHP
10. Cottonwood MHP
11. Peak View MHP
12. Aurora MHP
13. Weisner Estates Subdivision
14. Barr Lake MHP
15. KOA MHP
16. Prairie View Subdivision

B. Private NonProfit Corporations (4)

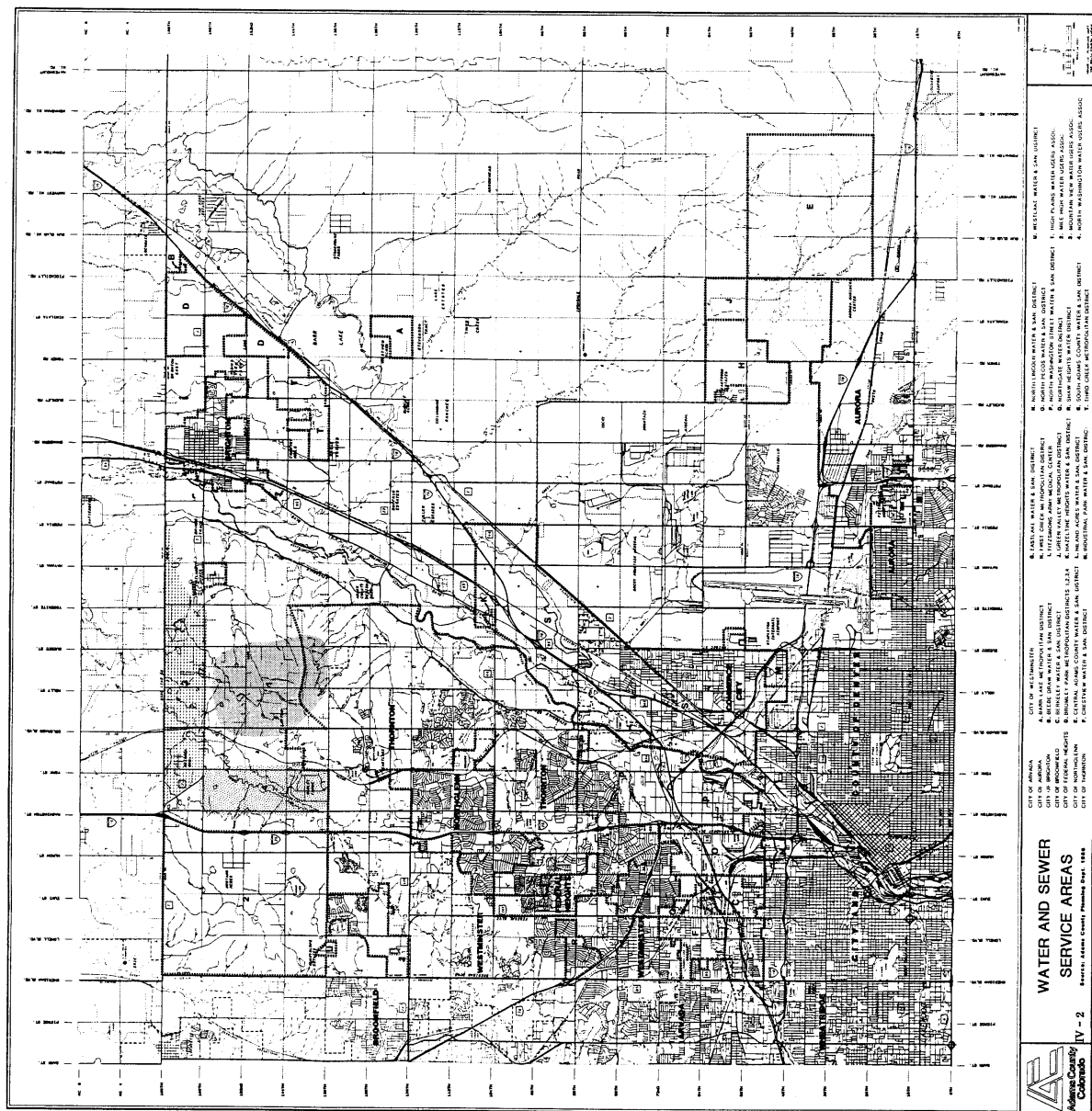
1. Mountain View W.U.A.
2. Mile High W.U.A.
3. High Plains W.U.A.
4. North Washington W.U.A.

Source: Adams County Planning Department.

Table V-3
Water Use by Supply Systems in

Adams County, 1981

<u>System</u>	<u>Total Water Use (MGY)</u>	<u>Per Capita Use (GPCD)</u>
1. Denver Water Board		
a. North Washington W & S	963	293
b. Berkeley W & S	124	136
c. North Pecos W & S	85	140
d. North Lincoln W & S	47	245
e. Northgate W & S	.82	125
f. Mile High W.U.A.	7.60	54
g. Fitzsimons Army Hospital	86.69	NA
h. Rocky Mountain Arsenal	35.50	NA
2. Aurora	1,844.60	168
* 3. Arvada	71.86	164
4. Brighton	993	209
* 5. Broomfield	344	168
6. Federal Heights	515.50	177
7. Northglenn	1,629	149
8. Thornton	3,149	139
9. Westminster	1,710	142
10. Bennett	64	146
11. Strasburg	37	151
*12. South Adams W & S	1,023	117
13. Crestview W & S	821	125
14. Shaw Heights	255	132
15. Hillcrest MHP	68.44	125
16. Eastwood Estates	39.92	125
17. Wikiup MHP	37.18	125
18. Mountain View	8.17	78
19. Green Acres MHP	23.50	125
20. Hi-Land Acres	20.04	148
21. Shady Meadows MHP	14.83	125
22. High Plains WUA	9.72	107
23. Westlake	16.42	182
24. Hazeltine Heights	11.41	160
25. Advanced MHP	8.00	125
26. North Washington WUA	5.72	114
27. A.A. MHP	5.61	125
28. Eastlake	4.48	116
29. Weisner Estates	4.15	125
30. Brighton MHP	3.55	125
31. Burr J. MHP	3.55	125
32. Cottonwood MHP	3.42	125
33. Peak View MHP	3.10	125
34. Aurora MHP	2.87	125
35. Prairie View	2.05	125
TOTAL	14,102.8	Average Use 153



Per capita use ranges from a low of 54 gallons in the Mile High Water Users Association to a high of 293 in the North Washington Water and Sanitation District. Among the larger municipal systems, those with universal metering, lawn watering restrictions, and progressive rate structures appear to use the least water per capita.

Wastewater Recycling Systems

Western Adams County contains more surface water than any other comparably-sized area along the Front Range. Unfortunately, these resources have been contaminated by piped-in and drained-in pollution from sources in the Denver Metro Area to such an extent that they are often not considered suitable for recreation or fishing. In addition, the public is refused access to many of the reservoirs, gravel pits, and River shoreline areas. In the past decade water quality has improved considerably, a public Greenway has been constructed along the South Platte in Denver, and canoeing, kayaking, and fishing uses have all increased. In the future, recreational use of surface water will probably continue to increase in Adams County. The key to recreation, whether boating, fishing, or just looking, is good water quality supported by effective sewage treatment.

Management

Like water supply systems, wastewater collection and treatment systems are often divided into "functional specialty" organizations. Some districts and cities provide wastewater collection alone, while other organizations such as the Metropolitan Denver Sewage Disposal District specialize primarily in treatment. In the past, this division of labor led to such poor coordination between collectors and treaters that the two ends of the system often expanded according to quite different time schedules. The situation improved dramatically with implementation of the Clean Water Plan for the Denver Region. The Denver Regional Council of Governments (DRCOG) was designated to administer the Plan, which was adopted in 1978. Since DRCOG is made up of representatives of all local governments in the Region, coordination is to be expected.

In establishing the network of responsibility, DRCOG divided the Denver Region into eight basins according to topography and the existing routes of wastewater collection lines. Within each of the eight basins, the municipal treatment agencies were appointed members of a River Basin Association to cooperate in accomplishing the goals of the Plan.

Different portions of Adams County are located within four of the eight wastewater management basins in the Metro Area: the Coal Creek, Big Dry Creek, South Platte, and Plains Area Basins.

Wastewater treatment systems are located in each basin. These basins and their designated management agencies are listed in Table V-4. Table V-5 is an overview of the existing systems. Southeast Westminster is served by a collection system that feeds into Metro, as is the southern portion of the South Adams County Water and Sanitation District. Northern Westminster has a complete collection and treatment system operated by the City; the northern portion of the South Adams District is also served by a separate plant operated by the District.

Table V-4

Wastewater Management Basins and Agencies
Serving Adams County, 1982

<u>Management Basins</u>	<u>Wastewater Management Agencies</u>
1. Big Dry Basin	City of Broomfield City of Westminster City of Northglenn
2. South Platte Basin	City of Brighton South Adams County Water and Sanitation District Metro Denver Sewage Disposal District #1
3. Clear Creek Basin	City of Arvada
4. Sand Creek Basin	City of Aurora - Sand Creek Plant

Source: Adams County Planning Department from interviews.

Table V-5

Population and Taps of Wastewater Treatment Systems

Serving Adams County, 1982

<u>Systems</u>	<u>Population</u>	<u>Residential Taps</u>
Metro Central STP	161,193	40,281
Aurora	30,000	8,548
Arvada	1,200	400
Thornton-Federal Heights	70,000	16,466
S.E. Westminster - Shaw Heights	28,300	6,585
Crestview - Northgate	18,000	4,000
North Washington W & S	9,000	2,900
Berkeley W & S	2,500	940
North Pecos W & S	1,668	251
North Lincoln W & S	525	191
North Westminster	10,000	3,385
Brighton	13,000	3,583
Broomfield	5,600	1,388
Northglenn	30,000	7,400
Bennett	1,200	400
Strasburg	800	267
South Adams W & S	24,000	6,000
Eastwood Estates	875	350
Hi-Land Acres	250	100
TOTAL	246,918	63,154

Source: Adams County Planning Department from interviews.

CHAPTER VI

PUBLIC FACILITIES

One of government's important functions is to assure that its citizens have necessary facilities and services, even though the actual providers may be public employees, private corporations, or service districts. The role of government is to review what is needed, assess what is presently being provided, and develop the means for correcting any deficiencies that are uncovered. The planning process must include a review of urban services, because urban development requires adequate police and fire protection, schools, parks, and waste disposal. Comprehensive planning does not encompass all public services and facilities, only those essential to urban growth. The Plan seeks to insure that these prerequisites can be made available before an area is recommended for development.

This Chapter briefly discusses the fire protection and educational services provided through the municipalities and districts in the County. The Chapter then continues with a more lengthy discussion of the Parks, Open Space and Trails Plan.

Fire and Emergency Medical Service

Fire and emergency medical service in Adams County is a complex system of interrelated agencies and jurisdictions. Fire districts and ambulance companies, whether volunteer or paid, each have their own history and organization which reflect the special character of the communities they serve. In recent years, a great deal of effort has gone into forming a communications system to lower emergency response times and assist districts in supporting each other. This system makes the whole much stronger than the sum of its parts.

County Fire Departments

There are two types of fire departments in Adams County. Fire Districts cover both rural and developed areas, while city departments are only responsible for fires within their municipal boundaries. Map VI-1 shows fire district boundaries and the location of all stations, both district and city department.

School System

Adams County's public education needs are met by twelve separate school districts. Four of these districts are located entirely within the County, although they may take students from

other counties on a contract basis. The remaining districts include areas from more than one county, and five of these are based in other counties.

All of Adams County's school districts are accredited by the Colorado Department of Education. These districts provide a wide variety of curricula depending on the district's size and enrollment. In urban areas curricula include alternative and vocational/technical schools and in rural areas, agricultural programs.

All but four of the County's school districts experienced a decline in enrollment between 1979 and 1980. This is consistent with a decline that has taken place state-wide during the 1970's due to decreasing family sizes. As is pointed out in the population section, this trend is expected to level off before 1990. Table VI-1 lists the districts as well as important information about each. Map VI-2 shows the school district boundaries.

Parks, Open Space and Trails Plan

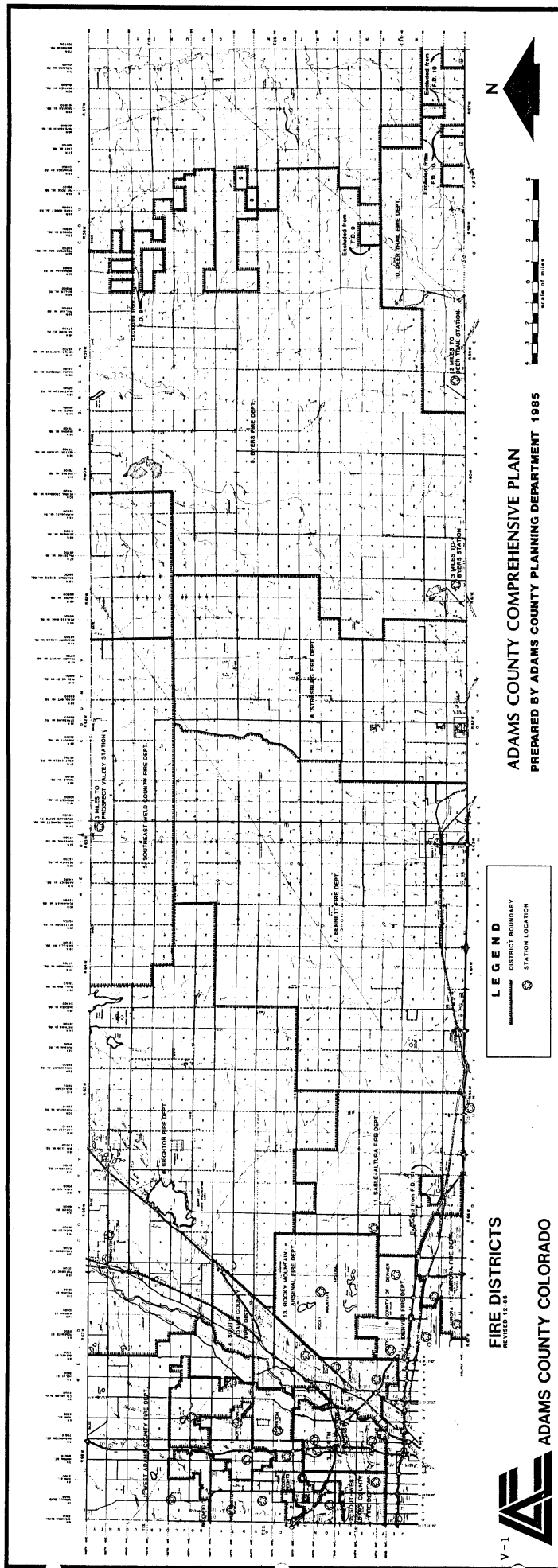
Western Adams County, with the exception of Brighton, is part of the Denver Metro Area in which communities share many common boundaries, and jurisdictional lines have little effect on people's recreation habits. An individual's neighborhood park may be located just down the street from his home, but in a different city. He may regularly use regional facilities provided by Adams County, Wyland Hills Recreation District, the State of Colorado or the City and County of Denver. It is the intent of the Plan to analyze what exists today, regardless of jurisdictional boundary, and to measure that against the needs of the County's whole population. This effort will tell us where we are, and point directions for the future.

The following is a summary of the Adams County Parks, Open Space and Trails Plan (P. O. S. T.). Readers who desire a complete analysis of all recreation facilities should refer to the full Plan.

Parks

Introduction

Parks and recreation facilities are amenities offered by a number of governments, special districts, and private enterprise. They are important to residents because they provide places for both active recreation and social activities. Parks also make aesthetic contributions to neighborhoods and improve property values.





SCHOOL DISTRICTS
REVISED 12-85

ADAMS COUNTY COLORADO

LEGEND

— DISTRICT BOUNDARY

ADAMS COUNTY COMPREHENSIVE PLAN

PREPARED BY ADAMS COUNTY PLANNING DEPARTMENT 1985

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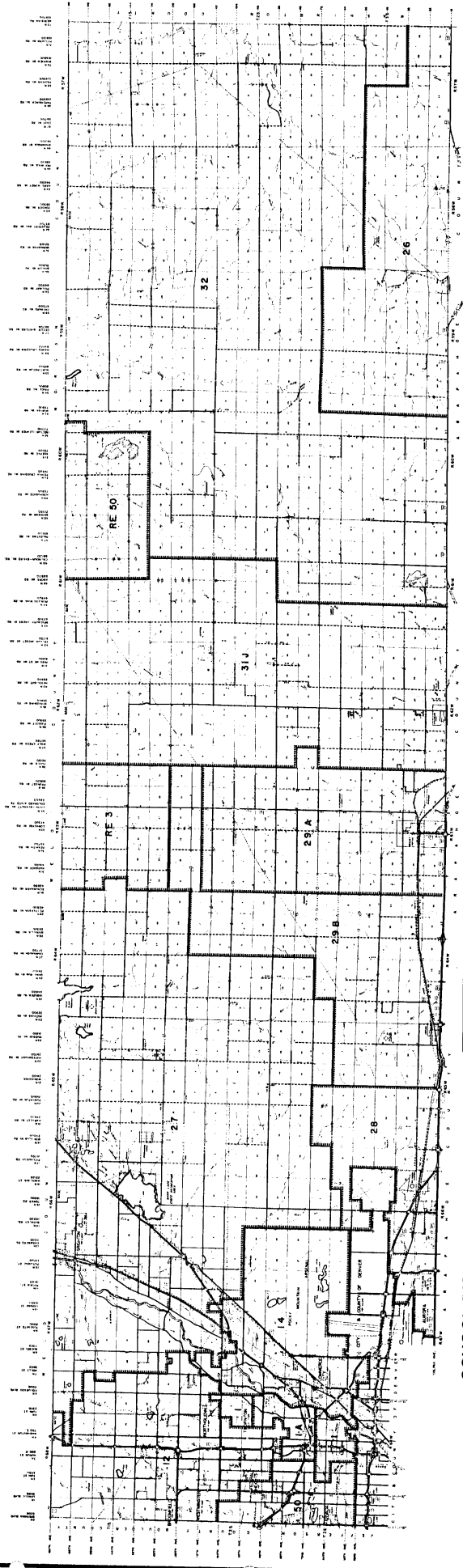


Table VI-1

SCHOOL DISTRICTS SERVING ADAMS COUNTY

SCHOOL DISTRICT NAME	NO.	NUMBER OF SCHOOLS BY TYPE				TOTAL ENROLLMENT			ADAMS COUNTY ENROLLMENT 1980
		ELEMENTARY	JR. HIGH	HIGH	OTHER	1971	1979	1980	
ADAMS COUNTY									
HARPLETON	1	6	2	2	11	7,287	5,030	4,997	4,997
NORTIGLENN/ THORNTON	12	19	6	2	12	16,115	18,762	18,443	18,443
ADAMS COUNTY	14	8	2	1	11	8,289	6,028	5,848	5,848
BRIGHTON	273	5	2	1		4,048	4,175	4,242	4,198
BENNETT	293	1	1	1		442	549	573	443
STRASBURG	313	1	1	1		351	430	422	252
WESTMINSTER	50	17	4	2	13	17,137	12,577	12,577	12,562
ARAPAHOE COUNTY									
DEER TRAIL	263				14	189	159	159	10
ADAMS/ ARAPAHOE	283	28	6	3	11 12	19,003	22,500	22,922	4,961
BYERS	323	1			14	365	342	340	72
WELD COUNTY									
KEENESBURG	RE-3	3			15	1,563	1,307	1,281	8
MORGAN COUNTY									
WIGGINS	RE-50	1	1	1		515	460	456	14

- 1 - Alternative Schools for "Special Needs" students
- 2 - Vocational/Technical Schools
- 3 - Career Enrichment Park: Provides Vocational/Technical, language and other courses with limited numbers of students
- 4 - Consolidated Schools: Elementary, Jr. High, High School
- 5 - Consolidated Junior/Senior High School

Source: Survey by Adams County Planning Department, 1982.

Tables VI-2 and VI-3 provide a summary of parks and recreation facilities available in the County for both incorporated and unincorporated areas.

Private Recreation

Private enterprise operates for profit various facilities which provide recreation for the public. Common examples are bowling alleys, golf courses and health clubs. Several years ago a private operator recognized the County's deficiency in softball facilities and constructed a complex of four fields which is rented to different teams for league play. The advantage of private recreation is that it relieves some of the burden on local government and can exist without tax support. The biggest disadvantage is that facilities are located based on their potential for profit-making, not on recreation need.

A brief survey of the private-for-profit recreation facilities in Adams County revealed four softball diamonds, four roller skating rinks, nine bowling alleys (188 lanes), three golf courses, six health clubs, and two campgrounds. There are also a growing number of video arcades that provide entertainment for children and teenagers.

Only one of the health clubs is a contemporary "full service" establishment. The rest are more traditional figure salons that do not offer a wide range of activities like racquetball, swimming, and tennis. Adams County has an urban population of 250,000 and it appears that several more large, modern clubs could be supported.

Other potentially profitable operations that have not been tried in Adams County are an amusement park and an equestrian center. The County has prepared a Master Plan for the Regional Park that identifies spaces for both these facilities, if private investors can be found. The Hyland Hills Water World park made money in 1982 and demonstrates that a high volume recreation center can be successful in Adams County.

Open Space

Open Space can contain parkland, trails, wildlife habitat, unusual topographic features, scenic vistas, floodplains, and historic sites. It is open space because it is intentionally designated free from urban development, now and in the future.

It is very difficult to quantify the need for open space. One reason is that the purposes for designating open space are diverse. The objective may be to preserve an area in its existing state, it may be to reserve an area for future development as an active park, or it may be simply to maintain an opening between neighborhoods or communities for social definition.

Table VI-2

CLASSIFICATION		NAME AND LOCATION	PARK INVENTORY AND CLASSIFICATION	SERVICE AREA (MILES)	ACREAGE
			PROVIDER	FACILITIES OFFERED	
COUNTY PARKS					
D		Rotello Park Coronado Parkway and Nueva Vista Drive		Tennis, picnicking, barbeque, trail, fishing	1 40
P & SA		Clear Creek Clear Creek west of York Street		Proposed: picnic, trail head, horse staging area, fishing dock, stairway to Clear Creek trail head	1/2+ 7
D		Twin Lakes 70th Ave. and Broadway		picnic, trails, fishing, lake, barbeque	1 15
N		Coronado Coronado Parkway and Welby Road		Picnic, adjacent to trails	1/2 1
D		Engineers Lake Hwy 224 and South Platte River		Proposed: trail, fishing docks	1+ 19
D		Siegrist Hwy 224 and South Platte River		Proposed: undeveloped	1+ 9
N		City View Cleo Street and City View		Proposed: Basketball, playlot, picnic, barbeque, benches	1/2 4
N		Campbell Memorial South 4th Avenue and Southern Street Brighton		Open turf, ball diamond, picnic,	/2 13
R		Regional Henderson Road and South Platte River		Golfcourse, fairgrounds, picnicking, play apparatus, trails, open space. Proposed race track, amusement park, pedestrian center.	1 hr. 1150

N	Steele Street	Proposed parking, trail head, horse staging area, pavillion, restrooms, picnic	1/2+	4
	Steele Street and 78th Avenue			
D	Rendezvous Recreation Area	Parking, trail junction, picnicking, benches, Vasquez Bridge, canoe landing and Engineers Lake and Stegrist Park	1+	Unknown
	Confluence of Clear Creek and South Platte River			

PARKS CLASSIFICATION KEY

<u>Symbol</u>	<u>Classification</u>	<u>Acreage</u>	<u>Service Area by Miles</u>
Playlot	Playlot	2500 s.f. to 1	1/4
N	Neighborhood Park	2-10 acres	1/2
D	District Park	10-30 acres	1
C	Community Park	100-400 acres	3-5
R	Regional Park	250+	1 hr. driving
P & SA	Parkway & Special Area		varies
VP	Vest Pocket Parks	2500 s.f. to 1	varies

NOTE: This classification is primarily based on acreage and facilities offered.

+ = Indicates may have somewhat larger service area due to location on trail, or a special facility such as a swimming pool

Table VI-3
PARK AND RECREATION SPACE INVENTORY

Planning Area	Recreation Space (Acres)	1980 Need*	2000 Need*
West Adams Urban	Parks Developed: 154 Undeveloped: 4 Schools 91 Total 245	420	550
Arvada	Parks Developed: 5 Undeveloped: Schools 4 Total 9	12	20
Aurora	Parks Developed: 61 Undeveloped: 14 Schools 38 Total 213	290	400
Bennett	Parks Developed: 8 Undeveloped Schools 15 Total 23	20	80
Brighton	Parks Developed: 75 Undeveloped: 12 Schools 70 Total 157	140	300
Broomfield	Parks Developed: 12 Undeveloped: Schools 17 Total 29	50	160
Commerce City	Parks Developed: 66 Undeveloped: 9 Schools 68 Total 143	260	440
Federal Heights	Parks Developed: 192 Undeveloped: Schools 4 Total 196	80	120
Northglenn	Parks Developed: 110 Undeveloped: 300 Schools 55 Total 465	300	300
Thornton	Parks Developed: 85 Undeveloped: 170 Schools 100 Total 355	410	900
Westminster	Parks Developed: 134 Undeveloped: 256 Schools 96 Total 486	410	750

* Based on a standard of 10 acres per 10,000 persons.

The following list of open space functions was developed by Seymour Gold and thoroughly covers the subject. Not all of these functions apply to Adams County, but many can be used to help define which areas should remain open.

Table VI-4
Functions and Classifications of Open Space

Managed Resource Production

- Agricultural Production
- Mineral production
- Forest production
- Energy production

Environment and Ecological Balance

- Fish and wildlife refuges
- Watershed areas
- Significant geological features
- Visual corridors and viewpoints

Public Health and Safety

- Flood control and water supply
- Waste disposal areas
- Airshed quality improvement
- Geological hazard zones
- Fire hazard zones
- Airport flight path zones

Community Development and Social Welfare

- Parks and recreation areas
- Historic preservation districts
- Cultural and archeological sites
- Public and institutional building sites
- Land use buffers

Urban Form

- Growth control
- Circulation corridors
- Utility corridors
- Future expansion reserves

Source: Recreation Planning and Design, Seymour M. Gold, 1980.

It is the purpose of the Plan to provide a rational basis for the preservation and acquisition of open space areas. The Plan can guide land purchase, zoning, transfer of development rights, public land dedication requests and other methods for maintaining open space. The following discussion uses Gold's classification to structure the use of Open Space in Adams County.

Managed Resource Production

Adams County presently uses a temporary open space designation of sorts to protect gravel deposits prior to mining. The Mineral Conservation zoning overlay has worked effectively in retaining land along Clear Creek and the South Platte River in an undeveloped state. After mining is complete, portions of the property may be developed. The gravel pits themselves, however, are filled with groundwater and are suitable for recreation or wildlife habitat. They may become permanent open space with new and beneficial functions.

An agricultural open space designation has been applied to most of eastern Adams County. It is called Agriculture-Production in the Future Land Use Plan (Chapter VII) to indicate that its purpose is to preserve commercial farming.

Environment and Ecological Balance

There is relatively little open water or wetlands in Adams County, but areas that do exist are generally very productive fish and wildlife habitat. The State has already made the largest water body in the County, Barr Lake, into a Park. Adams County can use land use controls to keep the area within one-half mile of the Park open. In this case open space will probably include various recreation facilities such as golf courses and riding trails.

Other candidates for environmental open space are Horse Creek Reservoir, Boot Lake, Ladora and Derby Lakes on the Rocky Mountain Arsenal, many of the gravel lakes along Clear Creek and the South Platte, and the irrigation ponds of the northwestern part of the County. The Living Springs area north of Strasburg may also be given consideration. Adams County is cooperating with the State Division of Wildlife to identify critical wildlife habitat. These areas will be studied for inclusion in the open space system.

Although watersheds and geological features are often included in open space, they are generally not of critical concern in Adams County. The primary geological attraction is the Front Range which can be seen from almost everywhere in the County.

Public Health and Safety

Several of the public health and safety categories apply to Adams County and have resulted in permanent open space. Foremost are the 100-year floodplains along County water-courses which are legally protected from development. Fortunately, the floodplains often coincide with gravel conservation and wildlife habitat, providing a persuasive rationale for long-term protection.

There are a number of former waste disposal areas where development should be controlled for some years to come due to the production of methane gas. Several other areas are located on the Rocky Mountain Arsenal and contain hazardous waste that could be difficult to eliminate, even if the installation is returned to private hands. Methane control is handled by means of a Flammable Gas Overlay zone that requires monitoring and remedial efforts to be taken before a site is reused. Former landfill sites are identified on a separate map kept for that purpose and have not been made part of the permanent open space system. Hazardous waste disposal sites have been identified and mapped by the U. S. Army as part of a process to determine which ones can be cleaned up. If it is found to be impractical to decontaminate some of the disposal sites these areas will be made part of the permanent open space system.

There are several airport-related open space areas that affect Adams County. Aircraft operations require "clear zones" off the end of all runways to ensure safety, and aircraft noise makes it desirable designate open space to avoid conflicts with people on the ground. The Plan shows several open areas near the proposed Front Range general aviation airport at Watkins. If the Rocky Mountain Arsenal is redeveloped for private uses, an open space area will be designated to minimize effects from Stapleton International's north-south runways which extend into Adams County.

Community Development and Social Welfare

Parks and recreation areas can sometimes function as open space if they are fairly large and located in a manner that contributes to an overall open space system. The County's Regional Park and Northglenn's Stonehocker Park are examples of parkland that functions as open space.

A large canal that carries water much of the year can also become part of the open space system if an undeveloped strip is maintained along both banks. If the canal is covered in places or crowded by buildings it cannot act as an open space corridor. The Niver, Highline and O'Brian Canals appear to be candidates for open space designation.

The Colorado Historical Society has located twenty-nine sites in Adams County noted for their historic significance. Some of these sites could be designated as open space to preserve them and add points of interest to the open areas. The following sites appear to be appropriate for inclusion in the County's open space designation:

- 1) Cline School - East 78th Avenue and York Street, Welby; used as a school from 1884-1955.
- 2) Barr Lake - Southeast of Brighton, originally called

- Oasis Reservoir; settlement established in 1881.
- 3) Baker's Crossing - Tennyson and 53rd; original bridge and ferry crossing at Clear Creek, 1863.
 - 4) Fort Vasquez #1 - confluence of Clear Creek and South Platte River; no remains left, established in 1832.
 - 5) Stone House - (Hood Ranch), Barr Lake near I-76; built in 1900.
 - 6) State Fish Hatchery - 6100 E. 88th Avenue; first hatchery established in Colorado, 1881-1963.
 - 7) Riverside Cemetery - a large historic cemetery along the South Platte River in Commerce City.

There are also several historic cemeteries near the South Platte that are natural inclusions in the greenbelt along the River. In addition, there is a large archeological site on the north side of the Rocky Mountain Arsenal. If this area is eventually redeveloped, the site could be preserved using an open space designation.

Community development and social welfare can be broadly defined to include protection from visual pollution. There are several limited access highways that provide most visitors and many residents with their "impressions" of Adams County. These highways are elevated slightly above surrounding terrain and give the traveler a panoramic view as the scenery passes by. Unfortunately, some of the County's most visually unattractive land uses lie adjacent to major roads, creating an unnecessarily poor image.

This situation can be improved by designating scenic open space corridors along I-25, I-270, I-76, and U. S. 85. This action will not take land from property owners along the highways, but it will allow Adams County to require special landscaping or screening improvements as part of the development of frontage areas.

Urban Form

The west end of Adams County contains all or portions of nine municipalities and five distinct unincorporated communities of more than 2,000 people each. It would be impossible to visually separate all of these entities using open space designations. In fact, there is no clear evidence that these communities wish to preserve their identities through development control. Some open space areas preserved for other reasons act as visual boundaries. For instance, the South Platte River clearly separates Derby/Irondale from Welby. The Plan map shows areas that have been designated to remain open for resource control, environmental, and public health reasons. If extensions or additions are desired by a particular community to enhance its

identity, it will be the responsibility of those affected to develop a means for keeping the area free of development.

Recommendations

From the previous discussion, it can be seen that Adams County already uses open space in several different ways. It is recommended the County establish a formal open space system that may include County acquisition. This could be particularly desirable where the open space will serve several functions. For example, in the South Platte River Corridor open space can keep development out of the floodplain, preserve wildlife habitat and provide passive recreation opportunities.

A list of criteria, shown in Table VI-5 is recommended for determining whether or not a proposed area should be designated as open space. Preference will be given to areas meeting several criteria.

The Trails and Open Space Plan map designates various areas as Open Space. The designation is the same as that used on the Future Land Use Plan in Chapter VII. Because the map scale is small, it is impossible to accurately show the boundaries of the areas intended. The following list and figure will help guide interpretation of the Plan.

<u>Open Space Category</u>	<u>Plan Boundary</u>
Lake or wetland	150 feet beyond normal pool elevation, measured horizontally.
Barr Lake State Park (Wildlife Habitat)	One-half mile beyond Park boundaries, except to the northwest where the boundary is I-76.
Unimproved 100-year Floodplain	Floodplain boundary as defined by the Urban Drainage and Flood Control District.
Improved floodplain or floodplain for which there is an approved channelization plan	20 feet beyond channel right-of-way.
Designated irrigation canal	20 feet beyond canal right-of-way.
Publically-owned open space parcels	Parcel boundaries.

Table VI-5

Criteria for Land Selection as Open Space

Physical Features or Natural Attributes

- Unusual land forms
- Unusual vegetation
- Scenic vistas
- Scenic backdrop
- Historical buildings, sites, landmarks
- Wildlife habitat
- Hazards, including floodplains
- Geology
- Sense of remoteness near an urban area
- Water availability
- Linkage between existing or potential open space land
- Deposits of valuable minerals, gravel, and clay

Use Potential

- Proximity to population
- Ease of access
- Ease of maintenance, policing, and preservation of natural resources
- Opportunity for multiple recreation uses
- Trail potential

Overall Land Compatibility

- Compatibility with adjacent lands and surrounding area

Other Open Space in a given locale

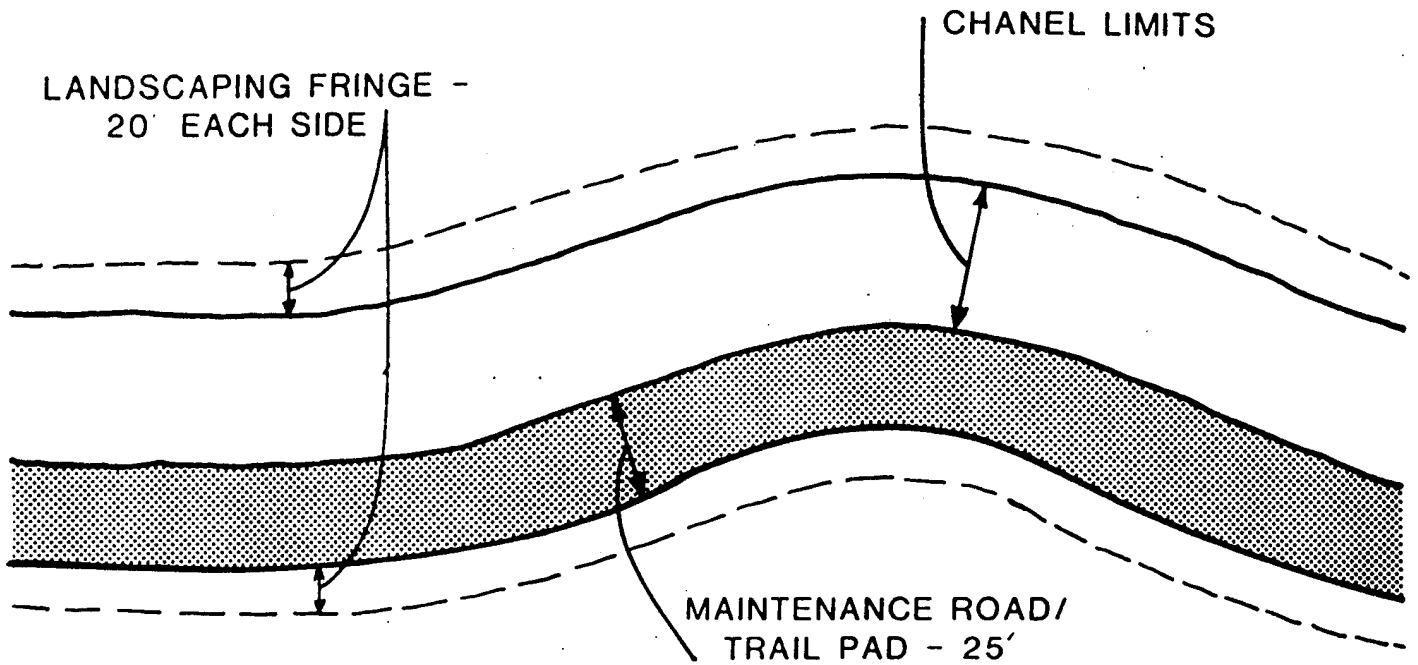
Desires of citizens

Cost of Land

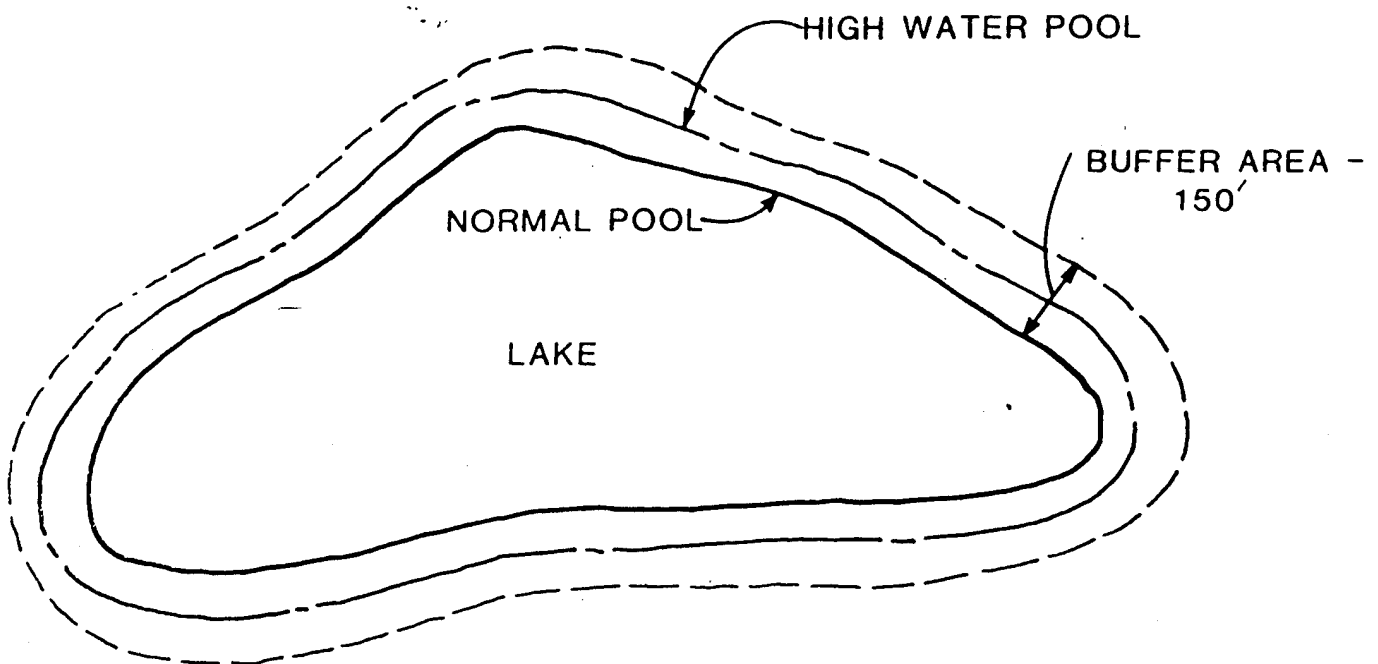
- Availability of funds, terms of sale, projected costs of maintenance and policing

FIGURE VI-1

TYPICAL OPEN SPACE DESIGNATION BOUNDARIES



IMPROVED CHANNELS AND IRRIGATION CANALS



WATER BODIES

Scenic open space along
limited access highways

50 feet minimum, or as
required for building
setback by Adams County
Zoning Regulations

Trails System

Introduction

Interest in the creation of state, regional, and local trails systems has come from a number of directions. Equestrians, hikers, and cyclists have regularly expressed the desire for facilities that would allow them better recreational opportunities. Statewide trails construction received a boost in 1972 with passage of the "Recreational Trails System Act". The State legislature funded this matching grant program from 1972 through 1977 that resulted in construction a number of trails. Since that time the State has provided trails planning. The Division of Parks and Outdoor Recreation published the "State Comprehensive Outdoor Recreation Plan" (SCORP) in 1980 and a "State Non-Motorized Trails Plan" in 1981. The SCORP addresses outdoor recreation planning on a regional basis. Adams County is included in Region 3, which encompasses the Denver area.

The Federal government has also provided some trails money through the Heritage Conservation and Recreation Service (HCRS). Adams County's Clear Creek Trail was partially funded by this now-defunct program.

The Denver Regional Council of Governments (DRCOG) published the "Denver Regional Bicycle Transportation Plan" in 1980 as an element of the "Regional Transportation Plan". The need to promote bicycle commuting was identified in 1979 when DRCOG completed the Region's portion of the State Implementation Plan for the federal Clean Air Act. The rationale is that the use of bicycles for short shopping and work trips can help reduce air pollution.

There is little doubt about the demand for trails facilities. A State survey conducted in 1979 indicated 42.4% of the population cycles, 50.2% hikes, and 18.6% rides horses. Even allowing for overlap in user groups, there are probably one million potential trail users in the Region, with 150,000 of them living in Adams County.

Local governments have also been active in trails and recreation planning. Westminster, Aurora, Thornton, and Northglenn have completed master plans during the past few years. Jefferson County to the west also has an adopted Open Space Plan. There have been some efforts to coordinate trail alignments and

construction standards, but very few trails have actually been linked.

Local government trail construction in the Region has met with mixed results. The Greenway Foundation in Denver has used over eleven million dollars in public and private money to construct a greenway along the South Platte River, one of the finest urban trails in the United States. The City of Aurora has incorporated trail construction and maintenance into its Capital Improvement and Budget process, ensuring that trails will be a regular and accepted part of the city environment in the future. A less fortunate example is the Washington Street bikeway in Northglenn that was underdesigned, poorly constructed, and has not been maintained.

Trail Classification

Trails have a number of different functions that help determine where they should be located and how they should be designed. The following discussion lists trail type by function, pointing out the sorts of users each can be expected to attract and some of the design requirements that must be incorporated to make the trail successful.

Access Trails

The primary function of a trail may be access to a park, natural area or scenic feature. A trail of this type should be attractive and integrated into its environment. An important design consideration is to tailor the trail to users who are appropriate to the recreation area being served. For instance, an active park is suitable for jogging and bicycle riding: the access trail should be hard-surfaced, fairly wide, and designed with gentle curves and grades. A nature preserve, on the other hand, is not suitable for runners: an access trail in this environment should give hikers an opportunity to observe nature and ecological processes without appearing to intrude. Such a trail should be surfaced in "natural" materials such as wood chips and may be narrow and contain sharp turns. It is often accompanied by interpretive signs explaining natural features and processes. Whenever possible, access trails should be "looped" so that the user can return to the point of entry without doubling back.

Recreation Trails

The primary function of a recreation trail is to provide an attractive facility for people who wish to take long hikes, go jogging, cycle or ride horses. The trail should be relatively long and accessible from a number of points along its route. Ideally, the trail should pass through or close to residential areas so that users do not have to travel a long way to reach the trail. Recreation trails may be urban in character, like the

Greenway, or rural in character like Aurora's Highline Canal Trail. Urban trails should be hard-surfaced and designed for heavy use. Rural trails should also be partially surfaced for bicycle and hiking use, but may also have a dirt pathway for horseback riders.

Destination Trails

A destination non-motorized trip is one taken to work, to shop, to the library, or some other specific point. The most common type of trail that aids destination trips is the sidewalk because it serves a frequent point of origin, the individual home. Unfortunately, sidewalks often end at the edge of a subdivision, leaving a potential walker or cyclist without a safe means of completing a trip. Destination trails should function in the same manner as the County's arterial roads, providing the connection between residential areas and other parts of the community. The most desirable situation is a trail that leads to the same destination as an arterial road, but by a different and more scenic route. Second best is an off-street path in the same right-of-way as the road. Last is shared space or a striped lane on the roadway itself with signs indicating that the street also serves as a trail. In any event, functional travel trails must be planned based upon origins and destinations. Trails that do not start where people live and do not lead to work, school, or shopping will not be successful. Wherever possible trails should serve different functions so that users can travel the same trail for both transportation and pleasure.

A number of trails have been built by the County and several of its municipalities. Their location and extent can be seen on the trails map. In addition, a list of existing and planned trails is included in Table VI-6.

Implementation

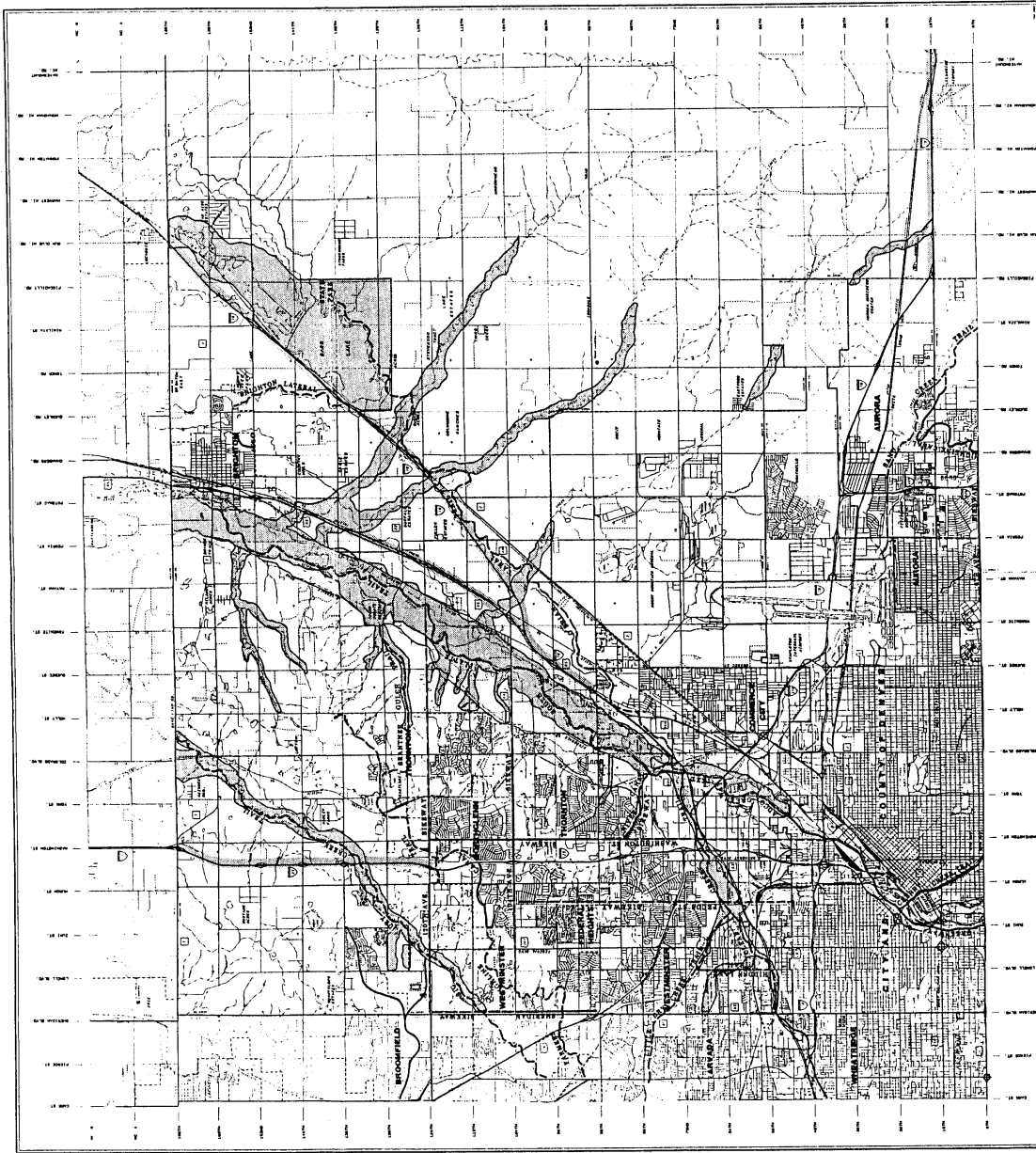
Parks

During the course of this study it became evident that there is much that can be done at the County level to coordinate and improve parks planning. Following is a list of steps that should be taken during 1983-84 and 85 to begin implementation of the Plan.

1. Complete more detailed studies of the unincorporated areas in Adams County that were identified as deficient in parks. The studies should locate park sites, list facilities and name the agencies responsible for construction and maintenance (district, city, private, school, or County). (1983-84)

Table VI-6
COUNTY TRAILS INVENTORY

Name	Existing	Planned
Clear Creek Trail	North Broadway to South Platte River	Through west Adams County to Jefferson County trail system.
South Platte River Trail	Clear Creek north to Steele Street	Along South Platte to Weld County Line
Niver Canal Trail	1.5 Miles from Washington Street east to Clear Creek Trail	
Highline Canal Trail	About 1.5 miles in Northglenn	From Arvada through Westminster, Northglenn and Thornton
O'Brien Canal Trail	16 Miles from Commerce City to Barr Lake	
Big Dry Creek Trail		From Jefferson County through northwestern Adams County
Brantner Gulch Trail		From east to west connecting South Platte River Trail to Highline Canal Trail, north of 120th Avenue
Greenway Extension		3.2 miles along South Platte River connecting Clear Creek Trail to Denver
Bikeways		
Washington Street	From 88th Avenue to 120th Avenue	From Denver to 120th Avenue
Pecos Street		From Denver to 104th Avenue
Sheridan Boulevard	From 88th Avenue to 104th Avenue	From 88th Avenue to 120th Avenue
104th Avenue	From Pecos Street to Colorado Boulevard	From Highline Canal Trail to South Platte River Trail
120th Avenue	From Zuni Street to Huron Street	From Sheridan Boulevard to South Platte River Trail



TRAILS AND OPEN SPACE

ADAMS COUNTY
COLORADO

V - 3

EXISTING TRAIL

PLANNED TRAIL

OPEN SPACE

2. Develop a Parks and Trails Capital Improvements Program (CIP) that lists and sets priorities for County projects over the next five years. (1984-85)
3. Develop and adopt park development standards to guide both government and private park development. The standards should address off-street parking, screening, and guidelines for facility placement, such as the north-south orientation of tennis and volleyball courts. (1984)
4. Establish policies for the use of land dedication fees for park development. These should include guidelines for deciding whether the County should accept land or money for parks in any given case. (1983)
5. Encourage private developers to construct and maintain parks to serve the future residents of their developments.
6. Request that Hyland Hills extend its jurisdiction east from Huron Street to the South Platte River, north of Highway 224 and south of the Thornton city limits (Welby area). This action would take in the remaining unserved population in southwestern Adams County. Irondale can be served by Commerce City through annexation, and new development in the "growth fringe" around Thornton, Westminster and Broomfield can be served by metropolitan districts or municipalities. These actions would relieve the County of responsibility for neighborhood and community parks, permitting concentration on projects with County-wide benefits. (1984)
7. Continue the cooperative recreation planning efforts started by this Plan.

Trails

Adams County will take a lead role in construction of a trails system and will strongly encourage other jurisdictions to complete their respective portions of designated trail routes. Base funding should come from a consistent yearly amount from the General Fund, recommended to be a minimum of \$100,000. This will allow some construction to take place every year, thus keeping momentum going and public interest in the trails program at a high level. Additional funds can come from contributions through the Trails Foundation, and from the Conservation Trust Fund. It is recommended that at least half of the Trust Fund money be used for trails construction, and that all of this source be used for capital improvements until the basic unmet needs of the County have been satisfied. Detailed priorities and construction costs will have to await development of a Capital Improvement Program. In the meantime, several consensus projects can be listed in general order of ranking:

1. Greenway Extension from Denver to Clear Creek along the South Platte River - 1984.
2. O'Brian Canal Connection from the east side of the South Platte River to the O'Brian Canal. During 1984, design solutions to several barrier points on the O'Brian Canal will be developed. At the same time an easement to use the maintenance road along the Canal for trail purposes will be negotiated. During 1985 construction will begin that will lead to eventual full development of the Canal trail for hiking, cycling, and horseback use as far as Barr Lake.
3. Extension of South Platte Trail north toward the Regional Park. During 1984 Adams County will negotiate with various landowners and the City of Thornton to locate a trail route along the South Platte from its present terminus at Steele Street to 88th Avenue. Construction could begin in 1984 or 1985, depending on funding.
4. Pecos Street Bikeway from 104th Avenue to Denver. Adams County, Thornton, and Federal Heights will need to officially recognize this north-south bikeway before action can be planned. Improvements will probably be limited to signs and lane striping and could be implemented as soon as there is agreement on the route.
5. Minor Connections, various areas in Adams County. The trail system, in both incorporated and unincorporated areas must be examined for connecting possibilities between different trail segments and between parks and trails. Making critical linkages improves usage and promotes the concepts of "network" and "system" with the public. An intensive study of opportunities should be undertaken during 1983, and a priority list for construction developed.

Trail Access Points

Adams County is in the process of developing several trail access points that provide parking, storage areas for horse trailers, landscaping, litter barrels, and picnic tables. Existing and planned access parks include Clear Creek Wayside, Steele Street, Twin Lakes and Engineer's Lake. Other access points will need to be developed at 88th Avenue (South Platte Trail), Washington Street (Clear Creek Trail), and a point near Metro Sewer or York Street for access to the Greenway Extension. As other trails are developed, access points will have to be incorporated in the detailed plans.

Open Space

The County should begin to establish a formal open space network such as those found in neighboring counties. Open space

may be acquired through land dedication, purchased by County general revenue funds, or by other options just discussed.

One of the areas of prime concern is the South Platte River Corridor. There is an abundance of wildlife in this area and the river also could be developed to function as a scenic-recreational corridor. There are various mined gravel pits that could be left in a natural state for wildlife, or be developed for passive recreation such as nature observation and education, or fishing. The following steps are suggested to meet these ends.

1. Develop an open space inventory of all potential open space areas. (1983)
2. Develop and adopt open space standards to guide government and private open space development.
3. Establish County policies and priorities for open space preservation (1984) including guidelines for the use of County monies for deserving areas. (1984)
4. Develop an Adams County Open Space System and identify funding mechanisms. (1985)

CHAPTER VII

FUTURE LAND USE PLAN

Chapter VII is a synthesis of the conclusions reached in the various elements of the Comprehensive Plan. The preceding studies of land use, roads, utilities and other components of urban development, plus the goals that Adams County has set for itself, has led to a picture of the future we desire. The picture, in turn, will be used to guide land use decisions as they occur.

The Future Land Use Plan divides the County into categories that indicate what "uses" or activities should take place in different areas. The time element of the Plan must be kept in mind, because the land use expectations extend only 20 to 25 years into the future. An area that has been shown on the Plan in agricultural use may eventually urbanize. On the other hand, growth may not be as rapid as is currently anticipated and areas shown on the Plan in residential use may remain rural. To help compensate for changing conditions the Plan will be revised every five years to keep it up-to-date.

Land Use Designations

Urban Categories

For all of the following, central utilities and urban services must be available prior to development.

Suburban Residential

Portions of Adams County containing established neighborhoods of single-family housing and local business are designated Suburban Residential. Development of vacant parcels within these areas and on adjacent land must be in keeping with the pattern already established. Uses considered compatible with Suburban Residential are:

- * single-family attached and detached housing with densities from two to five units per acre.
- * churches, schools, parks and other community facilities.
- * neighborhood shopping centers no larger than three acres in size and individual businesses, provided that vehicle access is from collector or larger streets.

Proposals for development within designated Suburban Residential areas must reflect these general uses or be able to be screened sufficiently that no degradation of the existing neighborhood occurs. New areas of Suburban Residential development may be added to the Plan if they meet the character of the uses described above.

Mixed Use Urbanization

The Plan identifies a number of large vacant areas in which full urbanization is expected. For the most part these areas will be residentially developed at overall densities ranging from five to 15 units per acre. Adams County also encourages a mixture of non-residential uses to be incorporated in all projects in which transportation and land use compatibility can be assured. The goal is to create neighborhoods in which residents will have the opportunity to shop and work within walking and cycling distance of their homes. Uses compatible with Mixed Use Urbanization are:

- * single family attached and detached housing.
- * manufactured housing (mobile and modular units).
- * multi-family housing up to a density of 30 units per acre, provided that the overall development within which it is located averages no more than 15 units per acre. Multi-family housing must have direct access to collector or arterial streets.
- * churches, schools, parks and other community facilities.
- * neighborhood shopping centers no larger than 10 acres in size, providing such centers have direct access to arterial streets.
- * freestanding neighborhood commercial establishments, providing such uses have direct access to collector or larger streets and are designed to be compatible with surrounding residences.
- * employment uses such as professional and business offices, medical/dental clinics, research and training facilities, and electronic equipment assembly which can be integrated harmoniously into a residential environment. Criteria for compatibility include conducting all operations indoors, an absence of noise, dust or odor emissions, a minimum of heavy truck traffic to the site, direct access to arterial streets, sufficient off-street parking to avoid neighborhood impacts, and attractive buildings and landscaping in keeping with the surrounding area.

Activity Center

An activity center is a major concentration of development that requires good road access and high visibility to thrive. Activity centers occur in three types of areas; along commercial "strip" boulevards, within a one-quarter mile radius of urban freeway interchanges, and in downtown central business districts. Activity centers are typified by high land values, intense use of every available building site and heavy volumes of circulating traffic. Uses compatible with Activity Center are:

- * multi-family housing, provided that outdoor common use facilities are located in the interior of the site or away from arterial streets.

- * shopping centers and free-standing commercial establishments.
- * travel trade services of all types (hotels, restaurants, etc.).
- * offices.
- * light manufacturing in which operations are conducted indoors.
- * wholesaling and distribution operations.
- * community facilities.

Building successful activity centers is very important to the economic health of Adams County. Proper development of new centers is critical because of the very limited opportunities still available at major interchanges. Site plans with a building Floor Area Ratio (FAR) of .5 or more are encouraged as a means of promoting high intensity use in Activity Centers. The County may also avoid potential land use and traffic conflicts in emerging centers by doing a general development plan for the whole area prior to accepting proposals for construction on individual sites. Addition of a new activity center to the Plan will require that it meet at least the following two criteria: be adjacent to the intersection of two arterial streets or a freeway interchange, and have a minimum of 50 acres available for development.

Manufacturing Employment

The category of Manufacturing Employment is designed to accommodate processing, fabricating and warehousing activities. Industry requires good rail and road access, flat building sites, central utilities and specialized fire protection. The Plan designates a number of areas which meet these criteria today or can readily be provided with services by extension from existing systems. More than enough vacant land has been allocated for industrial growth than is projected to be needed in Adams County during the next 20 years. Uses compatible with Manufacturing Employment area:

- * manufacturing activities of all types conducted indoors.
- * manufacturing with some operations conducted outdoors (e. g. metal and wood truss construction, casting of large concrete products, assembly of shipping crates, etc.) provided these activities are screened from public view.
- * warehousing and distribution of all types
- * offices, either free-standing or associated with an industry on the same site.
- * service businesses which support industrial activity such as machinery repair, fuel sales and parts supply houses.

Designation of a new area for Manufacturing Employment will require that it meet several criteria: direct access to arterial streets (rail access is desirable but not required), provision of central water and sewer service, fire protection adequate to

fight industrial fires and a response time of 15 minutes or less, and at least 50 acres available for development.

Industrial Support

Industrial Support is the principal use of land to support activities taking place in remote locations. Industrial Support operations serve industry by providing space for storage of equipment, sorting of materials or disposal of waste. Characteristics include large land requirements, low capital investment, minimal on-site employment, little need for permanent structures and minimal utilities requirements. Several examples will serve to illustrate the role of Industrial Support businesses.

Offsite Activity

Electrical Generation
Construction Equipment
Auto Repair
Steelmaking

Oil and Gas Well Drilling

Industrial Support Use

Fly Ash Disposal
Storage Yard
Used Parts Salvage
Scrap Collection and
Processing
Well Casing Storage

The Plan does not identify specific areas for the future expansion of Industrial Support uses. It is recommended that they be permitted in Manufacturing and Agriculture-Holding Zone areas by Conditional Use Permit or Certificate of Designation. The latter would be used only for landfilling or processing of materials that pose environmental hazards. Industrial Support activity is necessary for the health of many businesses which are important to the County's economy. Nevertheless, it must be recognized that uncontrolled location of these uses can have a number of detrimental effects. The following criteria are proposed to guide the granting of Conditional Use permits. Favorable locations include:

- * Sites abutting active railroad lines, particularly leased space in the right-of-way where permanent structures will not be built and temporary storage of material unloaded from rails cars is a reasonable use.
- * Sites in which water and sewer service will be difficult to provide. For example, a portion of an industrial area may be too low to serve without a sewage lift station and could be used for open storage or processing.
- * Sites which have poor access to the County's arterial road system but are in an area that is generally industrial in character. This criteria applies only to long-term storage operations, such as junk yards, that do not generate a great deal of traffic.
- * Sites which are not visible from the County's major roads.
- * Sites which will not adversely affect the value or use of adjacent property.
- * Sites which can be effectively screened and landscaped.

Rural Categories

Rural Residential

The category of Rural Residential is designed for subdivisions which have a density of less than one unit per acre, use well and septic systems, and are located in agricultural areas. The Plan identifies all existing Rural Residential areas but does not specifically designate new sites for development. Generally, Rural Residential use will be considered in Agriculture-Holding Zone areas, but not in Agriculture-Production, nor in areas that have been given an urban designation. Siting should be based upon the following criteria:

- * Fire response time of 15 minutes or less.
- * Police response time of 30 minutes or less.
- * Water resources sufficient to serve each home plus 5,000 sq. ft. of exterior landscaped area for 100 years at average annual pumping rates.
- * Development at a gross density of less than one dwelling unit per acre.
- * The subdivided portion of the development does not consume land classified as "Suitable" for agriculture by the U. S. Soil Conservation Service. Homes may, however, be clustered on the poorer soils of a site with suitable soils left open for continued production. Suitable soils are identified by the following Soil Conservation Service mapping codes: AsB, DaA, DaB, N1A, N1B, NuA, NuB, P1B, SnA, SnB, VoA, and WmB. In general these are Ascalon, Dacono, Nunn, Platner, Satanta, Vona, and Weld loam soils.

The last criteria needs some explanation. Map IV-1 Agricultural Suitability, indicates that soils in Adams County range from being quite good for both irrigated and dry farming to marginal or unsuitable for crops. Although conversion of good farmland for urban purposes is inevitable, there is no justification for premature or unnecessary loss of the best soils, particularly in very low density developments. Housing can be directed to marginal land or clustered in one area to permit continued production of another, economically farmable area.

Agriculture-Holding Zone

All agricultural land west of Hayesmount Road plus agricultural land to the east that lies within the Front Range Airport, Bennett and Strasburg Growth Area is designated Agriculture-Holding Zone. It is available for conversion to urban or Rural Residential use if the various criteria discussed above are met.

Agriculture-Production

All land east of Hayesmount Road not within the three east Adams County Growth Areas is designated Agriculture-Production. Neither urbanization nor rural subdivisions will be permitted. This policy is intended to preserve a large area of the County for long-term agricultural production and to prevent police, fire and school service demands from increasing in areas where they will be difficult and costly to provide.

Special Categories

The Plan contains a special designation for areas that will remain permanently undeveloped.

Floodplain

All 100-year floodplains along County watercourses are protected from development by the Zoning Regulations. Streams may be modified by channeling, but some portion will always remain a floodplain. The Plan shows the existing 100 year flood limits and indicates where channelization has been proposed.

Open Space

The Plan proposes that certain areas be left open or landscaped in order to protect the County's valuable scenic assets. These "buffer areas" should be incorporated into the site plans of proposed developments so that buildings and scenic features complement one another. Requirements are: lake front - 150'; hiking trail corridors - 20' on either side of the trail; major highways (U. S. 85, I-25, I-76, U. S. 36) - 50' or the building setback required by the County Zoning Regulations; Barr Lake State Park - one-half mile around the Lake except to the northwest where the open space boundary is I-76.

Recreation

Adams County has a number of active recreation areas such as the Regional Park which will remain open and available for use by the public.

Relationship to Land Use Controls

The Plan is a positive document that expresses a consensus of expectations and assumptions about the future of the County. That consensus can be modified as needed according to procedures outlined in Chapter IX. Regulations are legal controls that spell out in enforceable terms many of the expectations of the Plan. The two viewpoints, promotional and regulatory, are

brought together in the Adams County Development Review Manual that details all of the procedures used by the County to control land development. The following is only a summary of how the Plan relates to other County regulations. Specific questions should be answered by reference to the Manual.

Zoning Regulations

The Zoning Regulations divide the County into districts that spell out the uses that will be allowed in each. There is a definite correspondence between the zone districts and the Plan categories, although the Plan descriptions are less specifically written because they are not legally enforced. The following is an outline of the general correlation between Plan and Zoning categories. It is not intended to be inflexible; any use allowed by the Zoning Regulations that meets the spirit or intent of a Plan category would be in keeping with the purpose of the Plan.

<u>Plan Category</u>	<u>Zoning Regulations District</u>
Floodplain, Open Space, Recreation	Flood Plain Overlay, Mineral Conservation Overlay A-3, A-2
Agriculture - Holding Zone and Production	A-3, A-2
Rural Residential	A-2, A-1
Suburban Residential	R-1-A, R-1-C, C-0, C-1, C-2, P. U. D.
Mixed Use Urbanization	R-1-C, R-2, R-3, R-4, C-0, C-1, C-2, C-3, C-4, P. U. D.
Activity Center	R-2, R-3, R-4, C-0, C-1, C-2, C-3, C-4, C-5, I-1, P. U. D.
Manufacturing Employment	C-4, C-5, I-1, I-2, P. U. D.
Industrial Support	I-2, I-3

Subdivision Regulations

The basic function of the Subdivision Regulations is to control the division of land into legal parcels and streets. It is the most important means that the County has of ensuring that improvements to the local and regional road network will meet the needs of a growing population. Local traffic circulation is one of the elements of urban design that contributes to good Urban Residential or Activity Center development. The Subdivision Regulations allow the County to require that local streets are properly constructed with regard to width, layout, sight distances, pavement thickness, and other factors. Regional transportation routes are identified in the Plan, and the Subdivision Regulations are used to acquire right-of-way and obtain improvements to these routes from developers.

The Subdivision Regulations are also used to require drainage improvements and reduce soil erosion as development occurs. These controls indirectly support those portions of the Plan relating to water quality enhancement.

Urban Growth Areas

Concept

Adams County is 72 miles long from east to west and 18 miles north to south. This enormous area (1,238 square miles) makes geographic distinctions very important. The Plan contains detailed recommendations for several growth areas, but others may be added as required. It should be noted that these growth areas do not have definitive boundaries. Some property may be annexed by adjacent cities, some may be served with utilities but not annexed, and some may remain rural. Land values, development trends and political issues in each area, however, will be strongly affected by urban growth.

Western Adams County

Four growth areas in western Adams County have been mapped and planned in some detail. A fifth, the First Creek area just north of Aurora, has been identified but not given special consideration. After completion of an "E-470" freeway location study and a decision about relocation or expansion of Stapleton International Airport, a growth area plan for First Creek will be done.

Northwest Adams County Growth Area

Northwest Adams County is the area along I-25 north of Thornton, Westminster, and Broomfield. I-25 was constructed in 1959-1960 and helped spur the creation of today's cities of Thornton and Northglenn. Northward development reached 104th Avenue by 1960 and 120th Avenue by 1970 when Western Electric constructed its plant on Huron Street in what is now Westminster. Since that time growth has split east and west, following Colorado Blvd. northward east of I-25 and Lowell Blvd. and Zuni Street northward west of I-25. Quite probably, the split has been caused by lack of access to I-25 for the six mile stretch from 120th Avenue to S. H. 7 at the Adams-Weld County line.

Water supply in the area is available from Broomfield, Mile High Water District, Westminster and Thornton. One sewer plant is located east of I-25 just north of the Adams-Weld County line. Other service is available through the use of pump stations to the Metro Sewage Disposal District plant at 64th Avenue and the South Platte River.

Northwest Adams County is divided by three major drainage basins. Land northwest of the Community Ditch drains towards Coal Creek (Lafayette area). At this time there is no prospect of developing sewer service in the area. Land east of Colorado Blvd. and north of 144th Avenue drains, via Todd Creek, to the South Platte River at Brighton. At some point the existing Brighton treatment plant on the east side of the River may be expanded or a new facility on the west side constructed to service the Todd Creek area. Since this prospect lies in the distant future, the Plan does not designate the basin for immediate urbanization.

The largest portion of Northwest Adams County is drained by Big Dry Creek. The City of Northglenn has a treatment plant in the basin just north of the County line. The City of Thornton has also indicated an ability to serve the area, possibly through the use of pump stations. The Big Dry Creek basin is bisected by I-25, making much of the land within it highly visible, if not actually accessible. Taking all factors together, it appears that this area has the best potential for urbanization.

The following land use and transportation guidelines will help guide development in Northwest Adams County.

Transportation

- a. I-25 should be developed as the primary north-south transportation corridor north of 120th Avenue. In order to accomplish this, right-of-way for interchanges will be reserved at each mile road, and means of funding their construction will be explored. When Light Rail Transit or similar system is established in the I-25 corridor, it should be extended north of 120th Avenue as growth occurs.
- b. A secondary road system, capable of handling traffic volumes generated by urbanization, should be developed as growth takes place. In general this will require establishment of arterial streets along east-west and north-south section lines, and a system of supporting collector streets determined by the land use proposed within each section.

Future Land Use

- a. Each interchange location on I-25 north of 120th Avenue is designated as an Activity Center. Proposals for development near these centers will be strongly encouraged to show high intensity office, commercial, light industrial and multifamily uses. As a corollary to this policy, no proposals will be accepted by Adams County until sufficient services are available to support these uses. Activity centers are considered to

be critical areas of opportunity for the future of Adams County. The County therefore reserves the right to do detailed planning within each center to ensure good traffic circulation, harmonious land use relationships and protection of the environment. Activity centers not currently shown on the Plan may be designated at other major transportation focal points at a later date.

- b. Land in the Big Dry Creek basin which is not part of an activity center is designated Mixed Use Urbanization. This category allows for all types of housing with overall densities ranging from two to 15 units per acre. Also included are neighborhood business centers, low-rise office buildings, and distribution or light manufacturing establishments that can blend harmoniously into a predominantly residential environment. In general, no business areas larger than 10 acres in size will be allowed. All development proposals for mixed use and all proposals of any type covering 20 acres or more must be submitted in Planned Unit Development form. Approximately 10,000 undeveloped acres have been designated Mixed Use Urbanization. If developed to an overall density of five dwelling units per acre, the area could accommodate 50,000 homes sheltering 125,000 new residents.
- c. At this time, requests to develop new Rural Residential areas in the Big Dry Creek basin will not be accepted. Property owners in the Todd Creek and Coal Creek basins are also encouraged to avoid conversion to non-farm uses until urban services are available.

Utility Provision

The timing, phasing, and location of water and sewer service in Northwest Adams County is uncertain. Sufficient information exists to suggest that the Big Dry Creek basin will be the first to develop; it is possible, however, that engineering or political considerations will indicate otherwise. Adams County strongly encourages that a preliminary engineering study for this area be done to better define service feasibility.

Planning Coordination

Northwest Adams County is influenced by several municipalities with which planning must be coordinated. The County will work to establish a joint development review process with these municipalities for proposals within two miles of their boundaries or within their extra-city service areas, whichever is greater.

Adams County recognizes that the municipalities of Northwest Adams County contain a considerable amount of vacant land that

already has water and sewer service available to serve new development. Developers are strongly encouraged to make use of this existing investment before requesting additions to the systems.

Brighton Growth Area

The Brighton Growth Area includes such diverse elements as the rural Todd Creek basin west of the South Platte River, the County's Regional Park Complex, a strong gravel mining industry, heavy manufacturing along U. S. 85 and the huge Barr Lake State Park. Many of these elements are tied physically or politically to the City of Brighton or the County's administrative functions which are located in Brighton.

Water supply in the area is available from the Cities of Brighton and Thornton and several small private systems. Sewer service is available on the east side of the South Platte River from a treatment plant at Brighton, and on the west side from the pump station at 128th Avenue and Riverdale Road. There are a large number of natural drainage basins, making utilities planning a complicated matter.

The predominant transportation features are the twin rail/road combinations of U. S. 85/Union Pacific and I-76/Burlington Northern. A great deal of the Metro Area's rail and truck traffic passes through this growth area. The predominant natural features are the South Platte River and Barr Lake. The Brighton Growth Area generally has a rural character and some of the best scenic attractions in Adams County. The following guidelines will help direct development in this portion of Adams County.

Future Land Use

- a. Many of the important road intersections in this growth area are designated Activity Centers. Bromley Lane/U.S. 85 and Bromley Lane/Buckely Road are anticipated to be very important to Brighton, supplementing the downtown and Bridge Street commercial areas. I-76/120th Avenue and I-76/132nd Avenue are existing rural commercial areas that could become more important if utilities were available. The intersection of 120th Avenue and U. S. 85 could become a major center provided 120th Avenue is extended across the South Platte River and the Regional Park is developed as an active amusement and recreation focal point for the County. Two proposed interchanges on I-76 at Bromley Lane and Baseline Road could become Activity Centers as urban development moves east from Brighton. Adams County strongly encourages that these potential centers remain

undeveloped until central utilities are available and high density commercial, office and residential buildings can be built.

- b. Three major areas are designated for Mixed Use Urbanization. First is the City of Brighton's utility service area from the County line south to 144th Avenue, to the east as far as I-76, and west as far as the South Platte River floodplain.

The second area lies between U. S. 85 and the South Platte River south of 144th Avenue. Adams County considers this area to be of critical importance for several reasons:

- * The area recommended for urbanization is bordered by the 100-year floodplain of the South Platte River.
- * Much of the land within and just outside the floodplain has been or will be mined for gravel. Mining often alters the boundaries of the floodplain, changes the terrain drastically, and affects the types of development that can be accommodated after mining is complete.
- * Much of the land is visible from U. S. 85, making attractive building design and landscaping essential to the County's image.
- * The area is bisected by Old Brighton Road, the historic route between Denver and Brighton. This two-lane highway has a distinctive character that should be protected as urban development takes place.

Given these constraints, care will need to be exercised by Adams County and private landowners to ensure that the area develops in a high quality manner.

Gravel mining west of U. S. 85 will probably continue for 15-20 years. By the time the land is ready for redevelopment, sewer service may be available from an expanded treatment plant at Brighton or a new plant further south on the River. The Mixed Use designation encourages neighborhood business within residential areas and office, light industrial, commercial and other non-noise-sensitive development adjacent to U. S. 85. Development proposals over 20 acres should be submitted in P. U. D. form. This will help ensure that the natural constraints and opportunities of the area are incorporated in each site design.

The third area of Mixed Use Urbanization is located west of the River in the Brantner Gulch drainage basin. This land will be served by a large sewage pump station on Riverdale Road, allowing urban density development east of Thornton. For the most part development will consist of low to medium density housing (townhomes and patio homes) with small, integrated shopping centers.

There is also a potential for a hotel and restaurant complex adjacent to the Regional Park. The latter will only come about if several major attractions are constructed in the Park. In total, about 6,000 acres in the three areas have been designated Mixed Use Urbanization. If developed to an overall density of 5 dwelling units per acre, 30,000 homes sheltering 75,000 new residents can be accommodated.

- c. The land fronting U. S. 85 and the Union Pacific railroad tracks (east side) is designated Manufacturing Employment and is intended as a heavy industrial and warehousing area. The land is flat and has rail access for those industries which require it. Access to U. S. 85 is fair, and can be improved through the construction of frontage roads and intersection modifications. Although there is a possibility of some gravel mining east of U. S. 85, it will probably be very limited. As a result, the large uninterrupted building sites favored by major industries should remain available.

The Plan strongly recommends that U. S. 85 be used as a buffer between heavy industrial uses to the east and commercial, office and residential development to the west. The road right-of-way is close to 300 feet in width and provides a desirable physical separation between areas that will develop different character as time goes on. Over 1,200 acres have been designated Manufacturing Employment. Assuming a site coverage factor of .2, this area could accommodate 11 million square feet of new industrial space.

Recreation

The recreation potential of the Brighton Growth Area is very strong, indicating a need for several articulated policies:

- a. Adams County considers Barr Lake State Park to be a valuable recreation and wildlife resource. Accordingly, a non-urban strip around the Park is designated on the Plan, bounded by I-76 and Buckley Road on the west, Piccadilly Road on the east, Bromley Lane on the north and a southerly line one quarter mile south of 128th Avenue. Many types of recreation are appropriate in this non-urban area including golf, horseback riding, camping, fishing and softball. Proposals for development may include recreation-for-profit facilities, but should not plan permanent dwellings or major commercial structures.
- b. Adams County wishes to establish multi-use recreation trails along the South Platte River, the O'Brian Canal, Brantner Gulch and the Brighton Lateral. Each trail has been designated because of its tremendous

recreation potential and ability to enhance urban quality in growing areas. The South Platte route is an extension of the Greenway that follows the River from Englewood north to 78th Avenue in Welby (a three-mile stretch from 52nd Avenue to 72nd Avenue is under construction, as is an extension from Englewood to Littleton). The Greenway is essentially a linear urban park with access points, picnic areas, and points of interest all along its length. It is the recreation "spine" that ties together much of the Denver Metro Area. The O'Brian Canal Trail is a branch off of the Greenway that will take cyclists and horseback riders to Barr Lake State Park. The Brighton Lateral will bring Brighton residents south to Barr Lake. The Brantner Gulch Trail will take residents from northern Thornton to the Regional Park. As time passes, other significant trail routes may be identified and included in the Plan. Each trail, however, must fulfill identified needs and add enough to the County's recreation picture to justify its expense.

Trail right-of-way will be 15-25 feet wide and contain an eight foot paved section for hiking and cycling use as well as a dirt section for horseback use. Along canals, the trail will follow the existing ditch rider road; along Brantner Gulch the trail will be constructed when the Gulch is channelized and will follow the channel service road. No trail route has yet been selected along the South Platte River. Its location will be influenced by gravel mining, flooding potential, and the ability to gain access easements.

- c. Adams County hopes to make the Regional Park a focal point for recreation. A master plan for the Park property has been prepared that shows several possible uses in addition to those already located there. If all of these are developed, the Park will attract visitors almost year-round from a wide area. The County has taken the first step to implement the master plan by expanding the Park's golf course from 18 to 36 holes during 1983. Later, the County hopes to attract private development of a theme amusement park, equestrian center or race track to the site. It may also be desirable to reconstruct the Fairground buildings to allow a larger number and wider range of public events -to be held.

Utility Provision

Most of the problems and opportunities for utility provision have already been mentioned. Sewer service is available from Thornton for the area just west of the Regional Park and from Brighton in the area surrounding its city limits. Sewer service in the U. S. 85 corridor, which is a natural area for growth, is currently not possible. A preliminary engineering study by the

South Adams Water and Sanitation District recommends a new sewer plant, on the South Platte River near the confluence of Second or Third Creek, that will take care of the corridor. Such a plant could be built and owned by the City of Brighton, South Adams Water and Sanitation District, the Metropolitan Sewage Disposal District or some combination of these entities. Water can be made available throughout the Brighton Growth Area from the cities of Brighton and Thornton and the South Adams Water and Sanitation District, all of whom have surpluses.

Planning Coordination

During the 1980s planning coordination can be maintained between Adams County and the cities of Brighton and Thornton. In the late 1980s and 1990s more complex arrangements will have to be made concerning development in the U. S. 85 corridor, the Todd Creek basin west of Brighton, the area east of Brighton adjacent to I-76, and the area south of Barr Lake near the proposed alignment of E-470.

U. S. 85-South Platte Growth Area

The U. S. 85-South Platte Growth Area is dominated by three physical features. One is the river, road, and railroad corridor that gives the area its name. Another is the Rocky Mountain Arsenal, a large block of property owned by the U. S. Army that is almost completely isolated from the surrounding community. The third is Stapleton International Airport just south of the Arsenal. The primary take-off direction for aircraft is to the north, and the larger planes leave a noise "footprint" that extends west and north beyond the Arsenal property, affecting residents' living environments to varying degrees.

On the eastern side of the South Platte River is the City of Commerce City. The City has spot annexed a number of properties between 72nd Avenue and 88th Avenue and declared its intention to take in the entire area. West of the River is the City of Thornton which can provide water and sewer to land between its municipal limits and the South Platte floodplain. The presence of these two cities makes planning coordination vital.

Urbanization in the growth area will not require major water and sewer or road improvements. Using existing facilities and relatively minor extensions, most of the land can be developed to its full potential. The following guidelines will help direct growth.

Future Land Use

- a. The major intersections of U. S. 85/104th Avenue, 96th Avenue/I-76, 88th Avenue/I-76 and 80th Avenue/State Highway 2 are designated as Activity Centers. The

County encourages a high density mixture of commercial, industrial, and residential uses in these areas that will complement one another by means of integrated site design. Of these, 104th Avenue is potentially the most significant because it lies at the intersection of four important roads. The keys to success for the 104th Avenue center are road improvements and channelization of First Creek, which currently meanders through the area. It is recommended that Adams County sponsor an interchange design study, and that an improvement district be formed to help pay for the necessary road and drainage work.

- b. Three areas are designated Mixed Use Urbanization. The first lies west of the South Platte River adjacent to the City of Thornton. Development in this area is expected to be similar to what has taken place in the city - townhomes, apartments and single family housing.

The second area lies between U. S. 85 and the South Platte River north of 96th Avenue. This property, which is affected by gravel mining, floodplain limits, industrial encroachment and other considerations, must be carefully planned. Development is encouraged to be commercial or light industrial adjacent to U. S. 85 and residential along Brighton Blvd. All development proposals over 20 acres in size and all proposals for mixed use will be handled by Planned Unit Development procedures. Approximately 2,500 acres of vacant land in these two areas have been designated Mixed Use Urbanization. If developed to a density of five dwelling units per acre, 12,500 homes sheltering 31,000 people could be accommodated.

The third area is known locally as Irondale and lies between I-76 on the west, State Highway 2 on the east, 88th Avenue on the north and 80th Avenue on the south. Portions of this area have firmly established existing uses such as Wikiup Mobile Home Park and the tank farm west of the Union Pacific tracks at 84th Avenue. The remainder of Irondale, however, is a mixture of housing, truck farms, construction equipment yards, and junk storage. The landowners have expressed a desire for industrial development, but have no hope of attracting major industry because the local streets are substandard, the area is unattractive, and many parcels are small or awkwardly shaped. The result has been that the great majority of non-residential land use in Irondale consists of Industrial Support activities such as junk yards, and construction equipment yards.

Irondale can be improved through gradual redevelopment to a mixture of urban land uses. The first step is for Adams County and Commerce City to jointly fund widening of Rosemary Street and 84th Avenue to collector

standards (80 foot R-O-W, 56 feet of pavement). Creating two collector streets through Irondale will allow higher density development to occur without causing local traffic congestion. All of the interior streets are also substandard. In cases where they serve a number of small lots, widening can be accomplished by means of an improvement district. Where adjoining property is composed of larger lots, street improvements will be ensured by development agreement.

The mixture of uses intended by the Plan is one which will be dictated by environmental constraints and the capacity of the street system and will evolve over time. Some carefully screened storage yards and manufacturing along the Burlington Northern and Union Pacific Railroad tracks is appropriate, provided that truck traffic can reach the sites without traveling through residential areas. Frontage along the two major collector streets is appropriate for business, offices, light manufacturing and apartment buildings. Interior areas, accessible only via local streets, should be developed for lower density uses such as single family homes, mobile homes on individual lots, townhouses and neighborhood businesses.

Irondale can only be redeveloped through the extraordinary efforts of Adams County, Commerce City and the residents of the area. In order to insure high development standards and full discussion of potential effects on the community, all rezonings over five acres in size will be handled using a Planned Unit Development process, and all rezonings and site plans will be required to include provisions for street improvements and landscaping.

- c. The area north of 88th Avenue and east of I-76/ U. S. 85 is designated Manufacturing Employment and intended for heavy industrial and warehousing uses. Two recent examples typify the uses expected: The Union Pacific unloads automobiles and transfers them to trucks at a large facility near 96th Avenue; Guaranteed Products is a metal fabricating firm that has constructed a plant north of 104th Avenue. Other industrial uses in the area are Dowell, Pioneer Steel and Tube, and Direct Sales Tire Distributors. This area was designated for industrial development because it has large, level building sites, good rail and road access and already contains manufacturing and distribution facilities.

Approximately 3,000 acres of vacant land has been designated Manufacturing Employment. Assuming a site coverage factor of .2, this area would accommodate 26 million square feet of industrial space. Adams County strongly encourages development of industrial parks as

a method for dividing this area into useable lots. An industrial park, as opposed to strip development of existing road frontage, clusters businesses along an interior road that leads to a single point of access to the main arterial. The result is more efficient use of interior property, improved traffic control, and maintenance of higher average speeds on the arterial street.

- d. There is a large area north of the Rocky Mountain Arsenal and east of State Highway 2 that has been designated Agriculture-Holding Zone. Central utilities are not currently available, but are a future possibility, particularly in the First Creek drainage basin which flows towards existing water and sewer lines owned by the South Adams Water and Sanitation District.

The City of Commerce City has expressed a strong interest in residential development for this area. The major difficulty to be overcome is noise from Stapleton International Airport. Planes taking off to the north leave an impact "footprint" that extends beyond the Arsenal boundary. A study is currently underway to determine which portions of the area are most severely affected, and which are environmentally safe for human habitation. When lower noise areas have been identified and utility provision assured, some of this property may be designated Mixed Use Urbanization.

Recreation

Two trails, discussed as part of the Brighton Growth Area, bisect the U. S. 85/South Platte Growth Area. One is planned for the west side of the River, while the other will follow the O'Brian Canal towards Barr Lake. The existing bicycle path along 104th Avenue will be extended east to connect with the South Platte Trail, giving cyclists from Thornton and Northglenn access to the River area. The City of Commerce City intends to construct a link from the east to the South Platte Trail, possibly using Sand Creek or the Burlington Canal.

The City of Thornton has several large "gravel lakes" on the east side of the River between 72nd and 88th Avenues which are used for water storage. The City plans to open this areas for fishing and hiking in 1983-84 if facility construction funds become available. This park will be a tremendous addition to Adams County's Rendezvous Recreation Area on the River just south of 72nd Avenue.

Planning Coordination

Coordination between Commerce City and Adams County will be important in the entire area east of the South Platte River, and critical in Irondale and the area north of the Rocky Mountain

Arsenal. Since the City has annexed many small properties north of its contiguous boundary at 72nd Avenue, there are essentially two land use authorities operating in the same area. To avoid conflict the City and County must agree on basic land use categories (the Plan), and on standards that will be required of all persons wishing to develop their property.

Coordination between Adams County and the City of Thornton is important in the area west of the South Platte River. Since development is expected to be a continuation of what has already taken place in Thornton, coordination should be a straightforward process. Points to be agreed upon include: street and parking standards, landscaping requirements, parks and open space requirements, and designation of a collector road network to supplement the arterial routes that have already been designated. It is a recommendation of the Plan that the City and County institute a joint review process for development proposals in this area to ensure coordination.

Southwest Adams County Growth Area

Southwest Adams County is an older, heavily developed portion of the County that contains 42,000 out of the 70,000 people who live in unincorporated areas. It includes the communities of Sherrelwood, Shaw Heights, Berkeley, and Welby, the last two of which have been in existence since the Nineteenth Century. This growth area is actually an "enclave" surrounded by municipalities, in contrast with other growth areas which lie on the undeveloped fringe of the County's cities. To the north are Westminster, Federal Heights and Thornton, to the east is Commerce city, to the south is Denver, while to the west is Arvada.

Southwest Adams County lies at the focus of several major roads, notably I-25, I-270, I-76 and U. S. 36 (Boulder Turnpike). Ironically, access to some of these roads is limited, and they have acted as barriers to movement rather than assets. Fortunately, this situation will improve with the extension of I-76 from I-25 southwest to I-70 at Wadsworth Blvd. Three new interchanges in Adams County will be provided, allowing improved access to the Interstate system.

The prominent natural feature of this area is Clear Creek, a major tributary to the South Platte River. The slopes of Clear Creek Valley are evident as one travels north or south towards the Creek on a major road such as Federal Blvd. or Pecos Street. The valley floor, on the other hand, has been disturbed by gravel mining and industrial support uses, obscuring to some degree its natural contours.

Government and services are provided by Adams County and a multitude of special districts. This situation has sometimes

made cohesive planning difficult because no one agency is responsible for more than a few functions. In the near future Adams County will do a detailed plan for this growth area that will supplement the following Comprehensive Plan guidelines.

Future Land Use

- a. Several large areas in Southwest Adams County have been designated Activity Centers, primarily because of access to the interstate system and their proximity to the center of the Metro Area. The centers at 58th Avenue and I-25, Broadway and the Boulder Turnpike, Pecos Street and the Turnpike and Sheridan Blvd. are already partially developed. The same is true of the commercial strips along Federal Blvd. and Pecos Street. The entire area, however, can be much more intensively developed by using vacant land and redeveloping low-value property.

The proposed center along I-76 assumes that property owners in the area will want to take full advantage of the new freeway. Much of this land has been mined for gravel, leaving very few large building sites. The combination of excellent freeway access and limited land area should produce intensive development where construction is possible.

- b. Several large single-family areas have been designated Suburban Residential to recognize their existing character and right to protection from incompatible or out-of-scale development. Construction on vacant land within these areas will be required to be similar to existing development, more sufficiently screened and buffered that the surrounding neighborhood is not harmed.
- c. Several areas in which medium density residential development exists or is planned are designated Mixed Use Urbanization. One area is east of Rotella Park along the Niver Canal. Another lies between Zuni and Huron Street just north of Clear Creek, while a third is south of Hidden Lake, west of Lowell Blvd. All of these areas are attractive for residential use and have direct access to existing or planned recreational trails.
- d. All of the area east of Pecos Street south of Clear Creek, and west of the South Platte River has been designated Manufacturing Employment. Examples of existing industrial uses in the area are the rail yards west of I-25, Public Service Company's power plant near the South Platte River and the Anheuser-Busch Distribution Center on East 62nd Avenue. Industrial development is spread throughout the area but is truly intensive in only a few places. Redevelopment and use

of vacant ground could at least double the amount of industrial space available in the same land area.

Recreation

The recreation potential for Southwest Adams County is very good. There are existing trails along the Niver Canal, the South Platte River and a portion of Clear Creek. Additional trails are planned for Little Dry Creek and the Hidden Lake drainage along Lowell Blvd. The most serious deficiency in the area is a lack of neighborhood parks to serve existing residents. It is recommended that a recreation district be formed to help alleviate this situation.

Utility Provision

Almost all of Southwest Adams County has water and sewer service, either from the City of Thornton (Sherrelwood) or one of a number of water and sanitation districts. This situation has worked quite well except for occasional conflicts concerning service to particular areas. In the future Adams County must try to ensure that these systems can handle considerable growth, particularly along I-76.

Planning Coordination

Southwest Adams County is surrounded on all sides by municipalities, pointing out the need for active intergovernmental communication. Most of the fringe area between city and unincorporated county, however, is already developed, reducing the chance for land use conflicts. Nevertheless, it is recommended that a joint city-county review process be used for all proposals near a common boundary. This will help make both governments accountable to the existing community, regardless of jurisdictional control.

The second area of coordination needed is between Adams County and the numerous special districts of the area. It is recommended that the County develop a detailed land use and policy plan for the growth area that will be agreed to by all special districts. The process of developing this plan should help build county-district coordination procedures.

— Eastern Adams County Growth Areas

Front Range Airport Growth Area

Front Range Airport is a large general aviation facility that is under construction and will be in operation by early 1984. It is located just northeast of the community of Watkins, four miles from I-70 via Manilla Road.

General aviation airports in Arapahoe County, Jefferson County, Weld County and elsewhere have spurred significant amounts of development in their immediate vicinities. It is anticipated that this also will be the case at Front Range Airport.

Land use designations in the Airport Growth Area are somewhat more speculative than in the developed West End. Aside from I-70, existing roads are not adequate to handle urbanization, nor is there a utility system base upon which to build. In other words, the new community proposed will have to be built almost from scratch. Nevertheless, it is a tremendous opportunity for Adams County to oversee quality development in an untouched area. The following guidelines will help direct growth in this area.

Transportation

- a. The major route to Front Range Airport will be I-70 with secondary access via Irondale Road (88th Avenue) and U.S. 36. Interchanges on I-70 are located at Watkins and at Manila Road. The Plan recommends an additional interchange at Quail Run Road, halfway between the two existing structures.
- b. The primary north-south streets serving the airport area will be Manilla Road, Quail Run Road and Imboden Road. U. S. 36 and 48th Avenue will be important east-west roads along with a planned airport accessway from Manilla Road.

Future Land Use

- a. Land that is easily accessible from I-70 and within one mile of the Airport has been designated either Activity Center or Manufacturing Employment. This reflects a desire on the part of Adams County to encourage development of a new employment center and to keep residences away from the immediate vicinity of the airport. A total of 3,600 acres has been designated for employment uses. Assuming a site coverage factor of .2, the area could accommodate 31 million square feet of office, manufacturing and business space.
- b. Land accessible from I-70 but away from the airport has been designated Mixed Use Urbanization. Adams County hopes to establish a balanced community that provides homes and shopping areas for the people who will work in the new employment center. A total of 5,000 acres has been designated for primarily residential use. Assuming five dwelling units per acre and 2.5 persons per household, the area could accommodate 62,000 people.
- c. The 100-year floodplain of Box Elder Creek and clear zones off of the ends of the airport runways have been

designated Open Space. These areas will remain free of permanent structures but may be used for hiking, riding or other passive recreation. Open Space will lend "definition" to the new community by creating visual breaks in the future pattern of urbanization.

Utility Provision

There are currently no water and sewer systems near Front Range Airport except for small private facilities used by the Galamb Mobile Home Park and Prairie View Subdivision.

Preliminary research has indicated that a large public water system is feasible using a combination of one-third deep well water from the Arapahoe aquifer and two-thirds shallow well water from the sands under Box Elder Creek. Sewage could be collected and treated at one or more sites before being recycled to irrigate landscaping and nearby agricultural land. Large-scale facilities could sustain urbanization for many years and theoretically handle "build-out" of the land shown on the Plan.

Alternatively, small systems could be built, each using its own well and disposal facilities. A patchwork of smaller systems might give development a fast start but would dead-end before full potential of the land was reached.

Planning Coordination

The area of influence for Front Range Airport will extend south of I-70 into Arapahoe County. Adams County will need to cooperate with Arapahoe in order to create a unified road, utility and land use system. The growth area plan for Front Range Airport has been presented to Arapahoe County. They are considering its adoption and incorporation into their County Comprehensive Plan.

Beyond this, the pressing need will be for cooperation between Adams County and new service district(s) that will be formed to allow development in the growth area. The County encourages creation of a single metropolitan district which will be capable of many municipal functions in addition to delivery of water and sewer service. If a single district is not formed, the County will require effective coordination among whatever entities are eventually created.

Bennett Growth Area

Bennett is located in the primarily rural, eastern portion of the County. The town is located approximately 25 miles east of Denver, just north of I-70. The Bennett growth area is bounded by East 38th Avenue on the north, I-70 on the south,

BENNETT GROWTH AREA

BENNETT

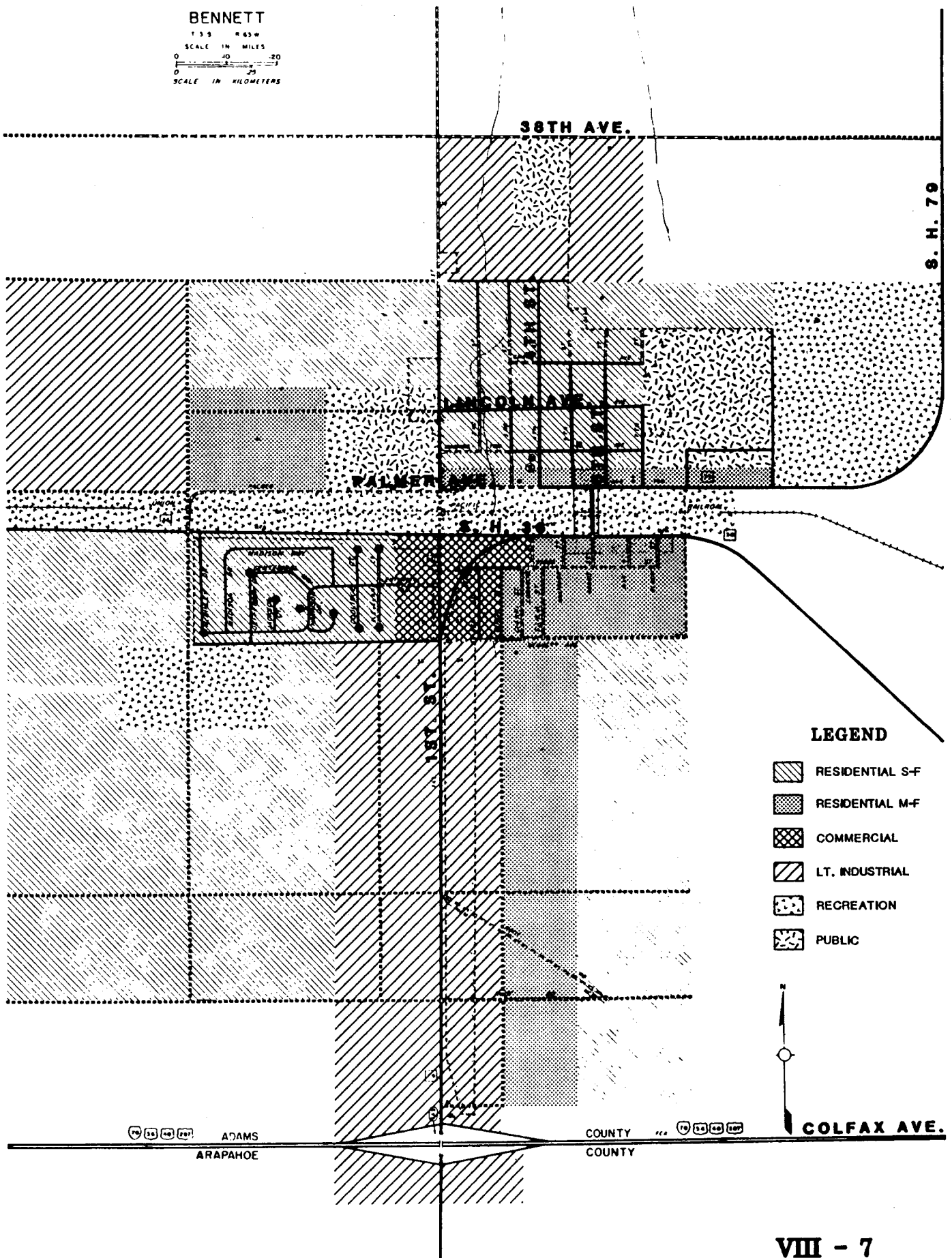
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LEGEND

-  RESIDENTIAL S-F
-  RESIDENTIAL M-F
-  COMMERCIAL
-  LT. INDUSTRIAL
-  RECREATION
-  PUBLIC



COLFAX AVE.

Highway 79 to the east, and extends west approximately one mile of the town center.

Transportation

- a. The Town has planned for the development of a boulevard for Bennett Avenue running east-west through town. The boulevard will feature separated lanes with a planted median. It should become a focal point for the community.
- b. It is recommended that Lincoln Street be extended to the west into the area recently developed for senior housing. A north-south corridor is also proposed where Palmer turns south to intersect with Highway 36. Its function will be to serve expected development in the western portion of Bennett, and to the south toward I-70.
- c. A third proposal is to develop frontage roads on each side of Highway 79, as it travels north of I-70 into town. This area is designated for commercial and industrial use, and the establishment of frontage roads will prevent "strip development" and subsequent traffic congestion as the area grows.

Future Land Use

- a. Following is a summary of the land use plan adopted by the Town of Bennett in 1982. The land use categories are slightly different from those used in the western part of Adams County and reflect local community preferences.

The plan designates areas of Bennett that are recommended for residential, commercial, industrial, parks, open space, and semi-public and public uses. The Map also shows proposed streets and street extensions which were discussed in the transportation recommendations.

It has been determined that moderate residential growth is desired and should be encouraged. Two residential density categories have been delineated. The first is a low density category, where detached, single family homes will be encouraged. Included in this are the Centennial Subdivision, an older part of Bennett, and three new areas. The first is south of Centennial as far as I-70, a second is east of Colorado Highway 79 behind a proposed frontage road, and a third is located to the west of First Street.

The second residential category is medium density, where more dwelling units per acre are encouraged. This will allow a larger spectrum of housing choices including apartments and townhouses, as well as single

family units. Areas in this category include the neighborhood behind Tofts store between Bennett Avenue and Third Avenue. A second area is designated east of Highway 79 behind the proposed frontage road.

- b. Business is encouraged to locate within the central commercial core next to Toft's store and the Tri-Shopette or along Highway 79 from I-70 north to the core area. Mixed commercial/residential use is recommended along Palmer Street.

In the central commercial core, businesses should be primarily retail and service establishments requiring smaller parcels of land. Highway 79 may be developed for more highway oriented commercial use, including businesses requiring better vehicular access, larger land areas, and more parking. In order to avoid future congestion of traffic, controlled access frontage roads have been designated parallel to the highway. Phased construction of these roads will ensure that attractive and orderly commercial development occurs.

- c. Two primary areas have been designated on the Land Use Plan map for industrial development. The first is located west of Town and north of Highway 36. This was chosen because of good highway and rail access, and because the area is relatively level and has no environmental constraints for industrial development. A second area is located along Highway 79, from I-70 to the present southern edge of Town. It has excellent access to I-70 and may attract commercial as well as industrial development. In addition, there is an area already zoned for industry in the northern section of Town by the sewage lagoon. Because of odors emitted from the lagoon, the Town Board felt this area is appropriate for light industries whose employees would not be affected by odors. It could also remain in agricultural use.

Recreation and Open Space

- a. The Kiowa Creek area has been delineated as flood prone by the National Flood Insurance Program, and also has steep slopes. This area is unsuitable for development, and should remain as open space or for uses such as recreation, agriculture, farming, or other uses that would be unaffected by flooding
- b. A peripheral "open space" corridor has been designated on the land use plan. This recreation corridor runs along the northern boundary of the proposed single family residential area, and south to the school campus. It then travels west along the Union Pacific railroad right-of-way to the western edge of town. This open space corridor has been designated as a dual open space/recreation belt that will serve to separate land uses and provide a pedestrian and bicycle

circulation path. The Planning Commission and Town Board also recommended this corridor remain open as a means to maintain a small town atmosphere.

- c. The Planning Commission has identified possible future park sites in the Land Use Plan. The first is to the east of the Bennett school campus. This area would be difficult to develop because it slopes away from the Town's sewer plant, and is recommended for recreational use and a community recreation center. The second site is located near the Town's senior housing. This area is recommended for a small park in conjunction with a community service center. The third location is south of the Centennial Subdivision in an area recommended for further residential development. A park should be constructed somewhere in this vicinity to serve residents' existing and projected recreational needs.

Utility Provision

The Bennett Sanitation District provides sewage treatment within the growth area, while the town operates the water system.

The Town Board and Planning Commission should plan for extending water service to areas designated for development or annexation. This will involve a feasibility study of the extension of water lines especially in areas of where there is a variation in topography and elevation. Development should be discouraged in areas that cannot be served by the water system.

The Sanitation District, Town Board, and Planning Commission should continue their efforts to coordinate the provision of a quality sewer service with plans for Bennett's growth. The land use plan was developed with the input of members of the sanitation district, and all areas delineated for future development were deemed serviceable by the sewer lines. Additional studies should be obtained at the time of any annexation or when areas of the Town not currently served by the system are proposed for development.

The Town Board, Planning Commission and Sewer District should also work together on a Capital Improvement Program to determine when capital investments or expansion of the system will be required. It is strongly recommended that the water and sewer service should be merged to ensure better coordination and planning, increased efficiency, and unified billing.

Planning Coordination

Because of Bennett's location, which is near the border of two counties, it is paramount to coordinate the review of development among the Town, Adams County, Arapahoe County, and the local districts. The Town and Adams County have cooperated extensively in producing the Bennett Comprehensive Plan. Efforts

should be made to open the line of communication between Arapahoe County and the Town, and continue to coordinate planning efforts between Adams County and Bennett.

Strasburg Growth Area

The unincorporated community of Strasburg is located approximately 30 miles east of Denver and straddles the Arapahoe/Adams County line. Because of the "two-county location", the planning area includes a portion of Arapahoe County south of Colfax Avenue. The planning area is bounded by Twenty-Fifth Avenue to the north, and extends just past Strasburg East subdivision to the east. The western boundary is approximately one-third mile west of Willow Way.

Transportation

- a. Strasburg is fortunate in having excellent access to major transportation facilities, including Interstate 70 and State Highway 36, as well as the Union Pacific Railroad. I-70 serves as the major travel route giving Strasburg residents easy access to Denver. This system is in good condition and no improvements in the Strasburg area have been recommended.
- b. It is recommended that Aspen and Longbranch, which dead-end on Westview Avenue, be extended to Colfax to improve the local street network.
- c. A major improvement needed in Strasburg is the provision for more off-street parking. Currently, there is angle parking on Colfax (Highway 36) which disrupts state highway traffic and poses a safety problem. It has been recommended that a light be installed at Wagner and Colfax to better control traffic in this area.

Future Land Use

A Land Use Plan was developed for Strasburg that disregards the Adams/Arapahoe County boundary at Colfax Avenue. This allowed the development of the best land use plan for the town as a whole regardless of differences in County policies and zoning.

The Planning Committee has designated areas on the Land Use Plan map for residential, commercial, industrial, public and semi-public uses, in addition to an area in the western portion of town recommended for mixed use. These land use designations are slightly different from the categories used in the more urban parts of the County. There are fewer categories allowing a greater range of uses to reflect a less complex land use pattern in this area. The single-family category is equivalent to Suburban Residential, while the multi-family category is similar to Mixed-Use Urbanization. There is a category of commercial use

in the Strasburg Plan that is designed primarily for retail and service commercial uses.

The industrial category recommended is similar to the Manufacturing Employment category. Because of the small town atmosphere of Strasburg, Industrial Support uses are generally not recommended.

The last category for development designated in the Land Use Plan is a Mixed/PUD category. It is roughly equivalent to the Activity Center category. The primary use of this area will be determined by market forces.

A public/semi-public category has also been designated. This includes recreational and open space lands, the Adams County building and the privately operated airport.

- a. The Planning Committee has designated a large portion of the Town north of Colfax Avenue as suitable for residential development. Two categories are recommended; the first is for single family homes while the second would allow greater variety and higher density residential development. Higher density is recommended near the schools while single family residential use is recommended for the area north of the commercial district.
- b. The recommended commercial district includes existing businesses along Colfax Avenue plus extensions west of Town and north and south of Colfax Avenue to allow room for future development. The Planning Committee also recommends the freeway interchange area for commercial use including truck stops, gas stations, restaurants, motels and other related uses.
- c. Industrial development is recommended east of Commanche Creek where roads and utilities can easily be extended. This area provides excellent transportation access to the Union Pacific Railroad and I-70, is close to sewer and water lines, and is close to the fire station. Additionally, the designated industrial areas are compatible with the surrounding land use, which is primarily commercial.
- d. The Commanche Creek Floodplain has been designated as open space. The area can be used as a recreation corridor or for uses that would not be damaged by flooding.

Utilities

The Strasburg Water and Sanitation District provides sewer and water service to the portion of town north of the freeway. A detailed study of the feasibility of extending services across the freeway should be conducted. If at all possible, the area south of I-70 should be included in the Strasburg Water and

Sanitation District. The growth of this area could be better served if it is controlled by only one district.

Coordination

Because of Strasburg's location in both Adams and Arapahoe counties, it is particularly important to coordinate planning and the provision of facilities and services. The Strasburg Planning Committee has been formed to coordinate planning between the town, Arapahoe and Adams counties as well as special districts. The Committee has worked closely with Adams County in developing the Comprehensive Plan for the Strasburg area. They have also contacted Arapahoe County and have requested them to expand the Land Use Plan in Arapahoe County as well as serve as a referral group for any proposed development in the area. The close cooperation of the town and two counties is essential in guiding the development in this area. The working relationship among these three entities should be fostered.

CHAPTER VIII

IMPLEMENTATION

The Future Land Use Plan presented in Chapter VII is tied closely to the traditional land use controls available to Adams County. Full implementation of the Plan, however, cannot be accomplished through consistent exercise of these controls alone. The County must also take certain actions which will help bring about better development. Two recent examples of positive County action are expansion of the Regional Park Golf Course and construction of Front Range Airport. The first will focus more attention on the Park as a recreation center while the second will accelerate economic development in the eastern part of the County.

In addition to physical improvements, the County must make institutional arrangements with other local governments for control of development. It must also seek legal changes that will strengthen the ability of counties to plan effectively. Last, it must seek new sources of funding to speed implementation. Actions, such as those recommended below, are just as important in the long run as the exercise of zoning authority.

Public Improvements Needed to Accommodate Growth

Community growth generally occurs as a result of a "public/private partnership" that may or may not be recognized by all of the participants. Rarely if ever, are all of the direct and indirect costs of any major project borne by government or private enterprise alone. With the recent decline in state and federal funding for public improvements, there has been a rise in the philosophy that "development should pay its own way" with regard to capital costs for roads and utilities, and amenities such as recreation when new residential areas are proposed. This philosophy has gone a long way towards avoiding the negative effects that sometimes accompany growth such as overcrowded streets and overloaded utilities. Still, it does not provide the key improvements that will spur growth and lead to a broader tax base for the community.

Mechanisms for funding the key improvements are diverse. Some can be paid for out of the General Fund, particularly if Capital Improvement Programming is used to identify future needs and "save" money each year in earmarked accounts to pay for those needs at a later time. Another common technique to fund improvements is for the local government to issue bonds that will be repaid with revenues generated by the proposed facility (Revenue Bonds) or with tax money (General Obligation Bonds).

General Obligation Bonds are the reverse of Capital Budgeting in the sense that the government borrows the money against a pledge to find future General Revenue to repay it.

Bond financing is particularly attractive when inflation is high and interest rates are low because improvements can be made immediately at a lower cost and repaid later with devalued dollars. Unfortunately, interest rates have been high in the last few years, and this has inhibited borrowing by local government.

Another important technique actually uses private funds but requires government coordination to succeed. The Improvement District is a special assessment on properties in a particular area to fund an improvement that will greatly benefit those property owners. Costs may be partially shared by the local government if there is also general public benefit.

The Plan has mentioned a number of improvements that are needed to accommodate growth. Some are construction projects, while others are detailed master plans spelling out County expectations and requirements that will ensure incremental improvements to various services as development takes place. These improvements and plans are not luxuries; unless they are accomplished Adams County will not achieve many of its development goals.

Key Transportation Improvements

- The Alignments for 96th Avenue and Quebec Parkway
- Alignments to be determined as identified on the transportation map
- Airport Area Transportation Plan
- E-470, Alignment, Financing and Phasing and possible continuation to the West as W-470
- Increasing the capacity of I-25 and U.S. 36 with HOV Alternative
- Development Impact Fee System
- Coordinated Planning with Municipalities

Key Drainage Improvements

PROJECT	JUSTIFICATION	RESPONSIBILITY
Channelization of Clear Creek	Needed to allow redevelopment of Clear Creek Valley	Colorado Dept. of Highways, Urban Drainage, local landowners
Channelization of First Creek	Needed to allow full development of 104th	Adams County, local improvement

from Highway 2
to South Platte
River

Avenue/U.S. 85 area

district

Key Recreation Improvements

PROJECT	JUSTIFICATION	RESPONSIBILITY
Regional Park development	Give northeast metro area a recreation private developers "identity" and attract high value development	Adams County,
Completion of Clear Creek, South Platte, and O'Brian Canal Trails	Trails will link County with the rest of the Metro Area, improve access and identity of Regional Park, and promote use of Barr Lake State Park	Adams County, Colorado Dept. of Highways, private donations

Key Master Plans

PROJECT	JUSTIFICATION	RESPONSIBILITY
Gravel Mine, Inorganic Fill and Redevelopment Master Plan for South Platte River	Coordinate end uses along South Platte River as gravel operations begin to close	Adams County, gravel companies

Institutional Recommendations

The fundamental institutional change required to implement the Plan is to have the County take on a coordinating role for its constituent municipalities and special districts. The issue should not be control as much as agreement among the parties involved. There is currently almost no formal planning across jurisdictional lines on such issues as transportation, land use, recreation or utilities. The Council of Governments has attempted to address this problem, but the DRCOG procedures have been established for the regional level and are not sufficiently detailed for local planning. The Denver Water Board and the Metropolitan Denver Sewage Disposal District have also done some "planning" by virtue of the fact that they cross jurisdictional

boundaries with water and sewer lines. County-wide comprehensive planning, however, is definitely inadequate to deal with the complexities of urban growth. The following two mechanisms will remedy some of the problems caused by lack of coordination and are recommended for implementation in Adams County.

Intergovernmental Agreements

Intergovernmental Agreements are the first step in County-City coordination when resolving planning and development issues. Several agreements have been formalized in recent years between the County and cities within the county. A large percentage of the western third of the County is now covered by these agreements. Generally the agreements reflect a commitment to the accommodation and encouragement of orderly growth and development in order to enhance the quality of life and environment, and to promote the economic vitality of the respective communities.

In 1983 an Intergovernmental Agreement was reached with the City of Brighton which provides for the following:

- Promotion of urban level development within Brighton's Urban Service Area, using Brighton's Comprehensive Plan as the development guide
- Provisions for annexation and extension of urban services

In 1986 the County entered into Intergovernmental Agreements with the City of Thornton in order to accomplish the following:

- Joint designation of future land use, transportation, parks and open space, and accordingly amend the respective Comprehensive Plans.
- Coordination of service provision and phasing of public improvements
- Annexation policy and joint review process.

Also, in 1986 the County entered into agreements with the City of Aurora, and the City of Commerce City for Joint Planning in the area around the New Airport site. The basic Provisions for both agreements are similar and listed below:

- Cooperative planning for the vicinity around the proposed new airport, including development of an Airport Area Master Plan in conjunction with other agencies
- Inclusion of recommendations in the Plan for land use, transportation, service provision, and environmental considerations which would serve as a guide to decision-making
- Restriction of residential land uses within the 65 LDN noise contour of the airport.
- Development of a joint review process for development proposals in the affected area

Water and Sewer Planning Organization

The relative scarcity of raw water and the jealous guarding of "turf" have tended to preclude any significant water and sewer planning in Adams County that crosses jurisdictional lines. There are no unified water demand projections tied to population/employment projections. Planned increases in sewer plant capacity appear grossly inadequate to handle future growth. System interconnections to improve water pressure or provide emergency service are rare. Lawsuits among communities regarding water supplies and sewage discharges are common. Some systems are prevented from extending service to attractive new areas by fiscal constraints, lack of capacity or other problems. The result is mixed levels of service, efficiency and water rates across the County.

Adams County is not presently a service provider, but does have a strong interest in water and sanitation, because it is a key to growth. The County also exercises land use controls in large areas of vacant land that may receive service in the future. It is recommended that Adams County seek to form a water and sewer planning organization during 1984. At a minimum it should provide a forum for discussion of items of mutual interest. If possible the organization should set goals for itself regarding determination of future water needs and establishment of a drainage basin system for sewer service planning. Ultimately, engineering questions that affect several systems can be answered by jointly funded studies. An additional benefit of an effective County-wide organization would be improved regional influence with the Council of Governments, the Denver Water Board, and Metro Sewer.

Legal Recommendations

From time to time it is necessary to make adjustments to local regulations and state legislation to deal with changing conditions. On occasion, major alterations may be required; two such situations are indicated by the Plan.

— Metropolitan Districts

The traditional source of urban services has been municipalities, although in southwestern Adams County overlapping special districts have served a large population for many years. Municipalities are sometimes able to expand their service areas by annexation or contract, but are often physically or financially constrained from doing so. Some years ago the State legislature passed legislation enabling the creation of metropolitan districts. A "metro district" may provide all the

services of a city including water, sewer, police, fire, recreation and trash collection. Such a district does not, however, have the ability to adopt ordinances for traffic or crime control at the local level. Police protection must be provided under contract with a general purpose government that has lawmaking capability.

A major difference between cities and metro districts lies in their initial constituencies. A city is usually formed by a group of citizens living in a community that decides to incorporate for purposes of political control, bonding capability or other reasons. Metro districts are usually organized by investors or developers prior to settlement by a resident population. Because of this there is very little traditional political control over the formation of a metro district by the County's elected officials. Metro districts are also much easier to form than cities and have no legal size or contiguity restrictions. Very small districts may be formed adjacent to one another or to cities without requirements for eventual consolidation, utility system compatibility or other means of coordination.

It is recommended that Adams County join other counties, possibly through the Council of Governments, to seek better legislative methods for control of metro districts.

Police Protection

Chapter VI of the Plan provides background information on police protection in Adams County. Most citizens are served by municipal departments that enforce a full complement of city ordinances. Southwestern Adams County is patrolled by the Sheriff's Department, acting in a municipal role. The Sheriff does not, however, have local ordinances to help protect this urban population.

It appears that population growth may, in some cases, take place outside of municipalities and away from the southwestern part of the County. Possibilities include northwestern Adams County, the First Creek area near Tower Road and the Front Range Airport. If this happens it will be even more important for the Sheriff's Department to have improved enforcement capabilities. It will also be important to establish funding policies that will allow the Sheriff to focus patrol efforts in a particular area using money supplied by the citizens who receive the service.

Financial Recommendations

The Plan has identified several areas in which existing funding mechanisms are inadequate. As the County grows, an ever-larger amount of money must be spent each year for maintenance of

roads, bridges, parks and other facilities. Unfortunately, this leaves that much less for capital improvements. Capital improvements have traditionally been accomplished through developer construction, bond financing and capital budgeting. The first method has the advantage of not requiring public funds, but the disadvantage of resulting in "spot" improvements which occur on an irregular basis. Improvement districts and a Development Fund have both been recommended in the Plan as means of "stretching" private funds.

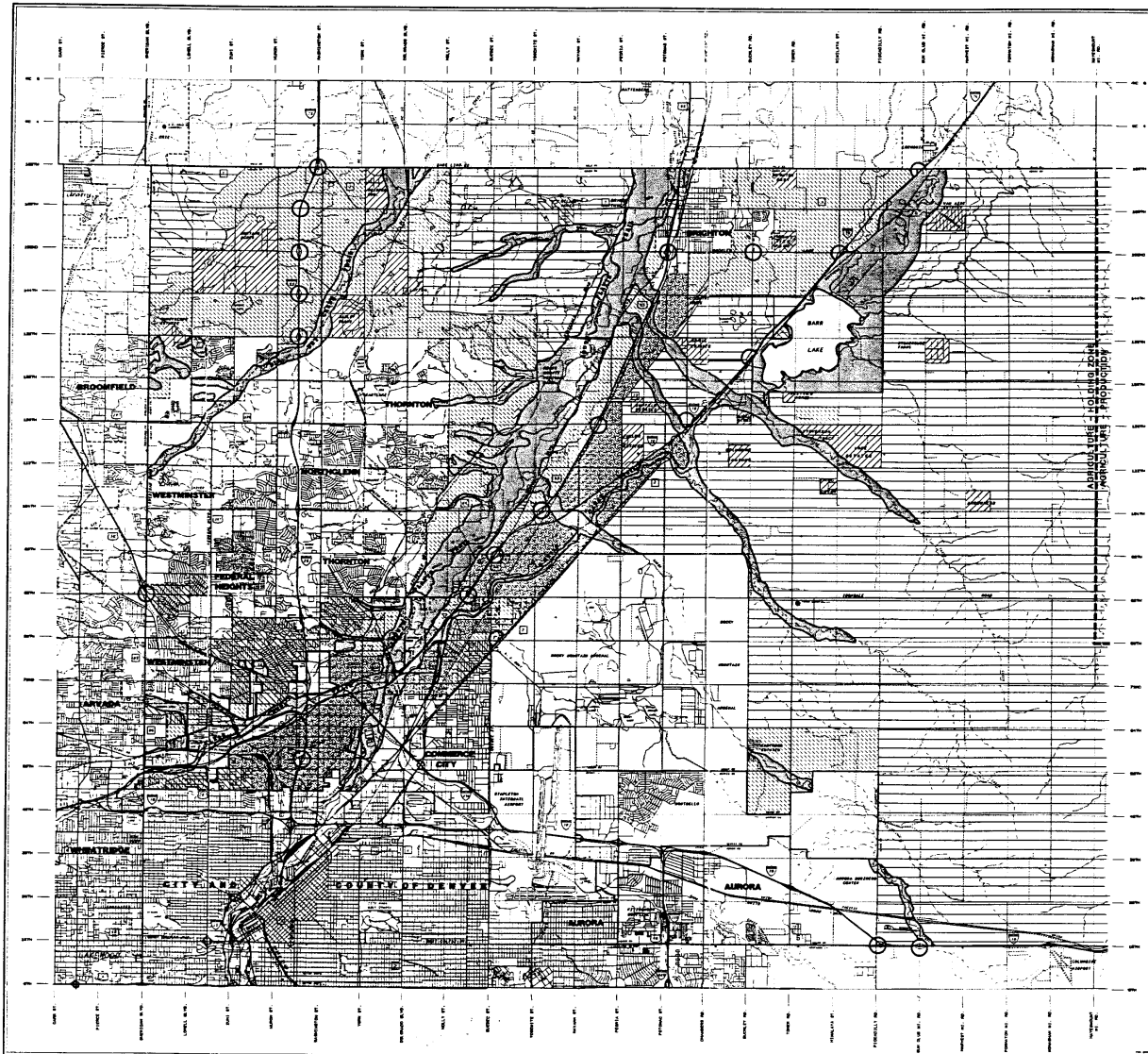
Revenue bonds are an excellent means of using the County's borrowing power to finance projects that will pay for themselves. Adams County is making good use of this capability.

General obligation bonds are useful for financing projects that will not produce revenue. They work best when interest rates are low and inflation is high. They have a disadvantage of being "one time" issues that may require voter approval and do not generate a continuing source of revenue.

Capital budgeting regularly allocates money to future projects or project categories. The money is usually generated by sales tax and mill levy funds, although small amounts come from other fees collected by local government. Several capital project categories in Adams County currently appear underfunded, including road and bridge and trails/open space. It is very possible that other areas of projected deficiency would be revealed by a complete capital needs analysis.

It is recommended that Adams County go through the process of developing a five-year Capital Improvement Program to overcome existing problems. The amount of money needed to provide for these capital projects should be estimated and divided into five yearly increments. When this has been done it is very possible that current revenues will not be sufficient to fund all the projects. The fund requirements and justification will probably need to be taken to the voters for approval. Rejection could necessitate a scaling-back of expectations for growth and public improvements.

It is important to note that realistic assessments of what may be accomplished in different areas are essential to the Plan. The era of large federal and state grants appear to be over, so the County taxpayers will have to pay for their own capital improvements.



FUTURE LAND USE PLAN

VIII - 1

FLOODPLAIN, OPEN SPACE, RECREATION

RURAL RESIDENTIAL

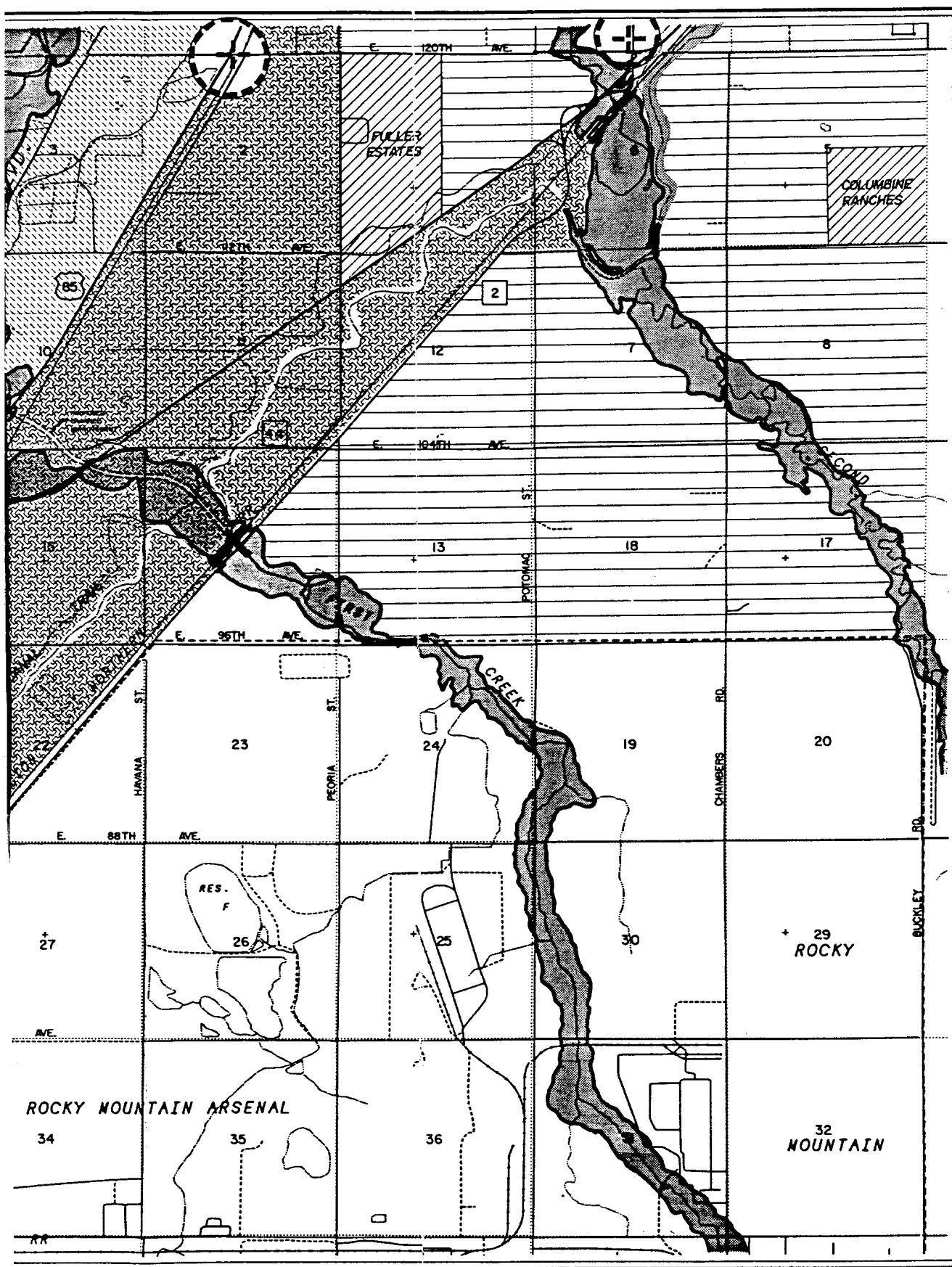
SUBURBAN RESIDENTIAL

MIXED USE URBANIZATION

ACTIVITY CENTER

MANUFACTURING EMPLOYMENT

AGRICULTURE



LTURE - HOLDING ZONE

LAIN, OPEN SPACE,
TION

RESIDENTIAL



MIXED USE
URBANIZATION



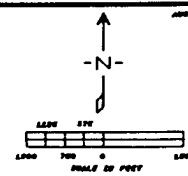
ACTIVITY CENTER



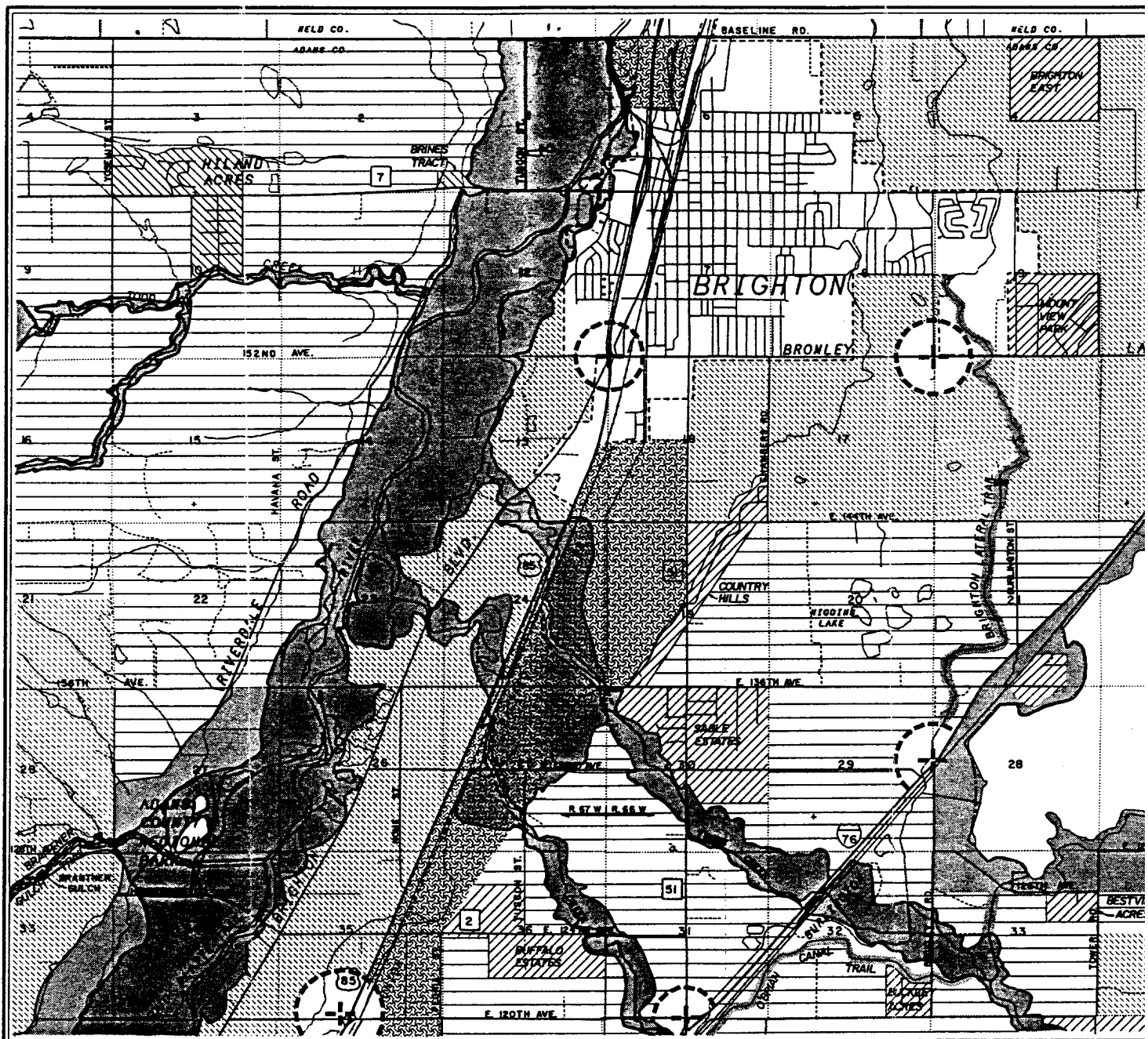
MANUFACTURING EMPLOYMENT



SUBURBAN RESIDENTIAL



ADAMS CO. PLANNING DEPT.
155 SOUTH FOURTH AVENUE
BRIGHTON, COLORADO 80601

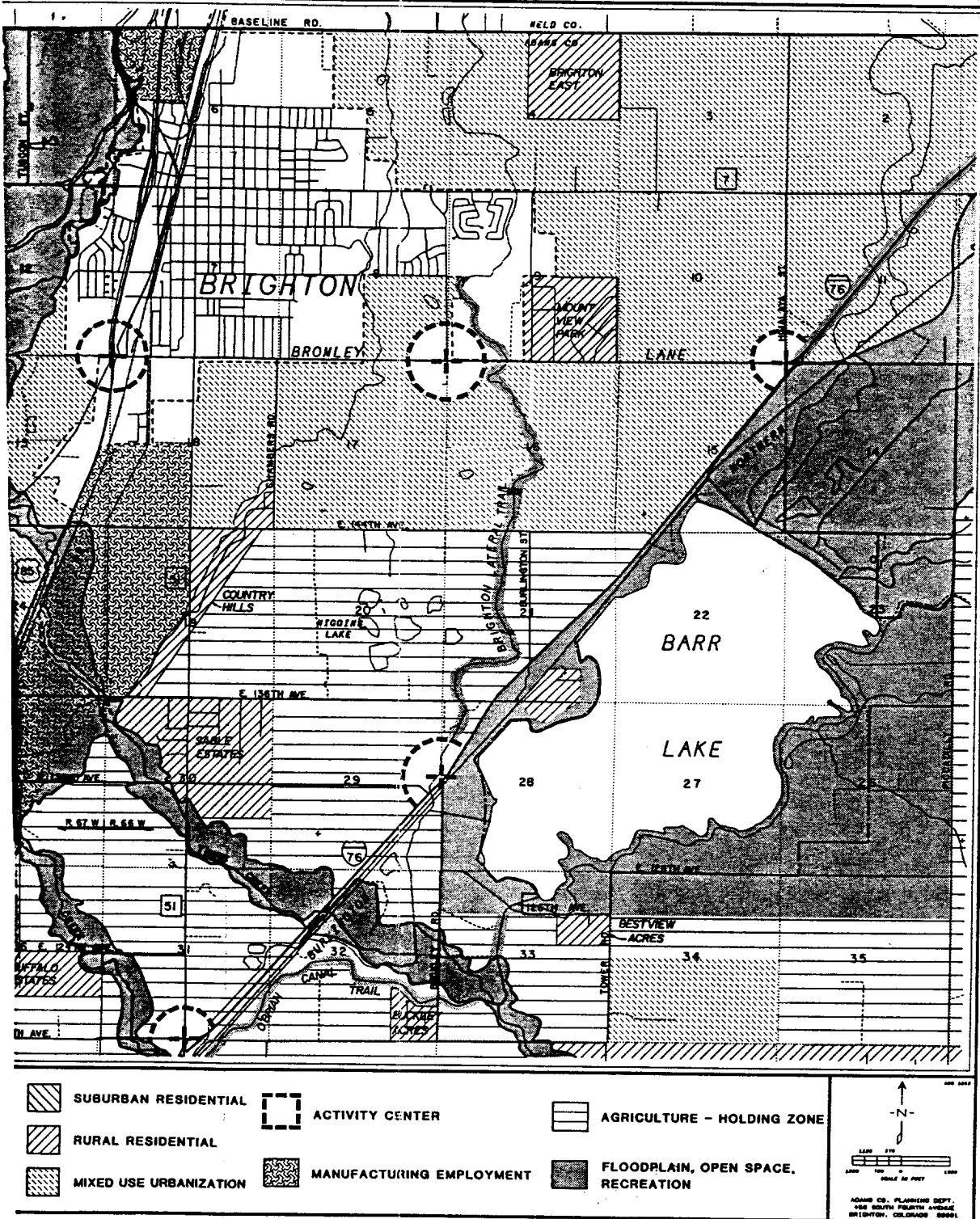


BRIGHTON GROWTH AREA

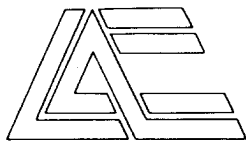
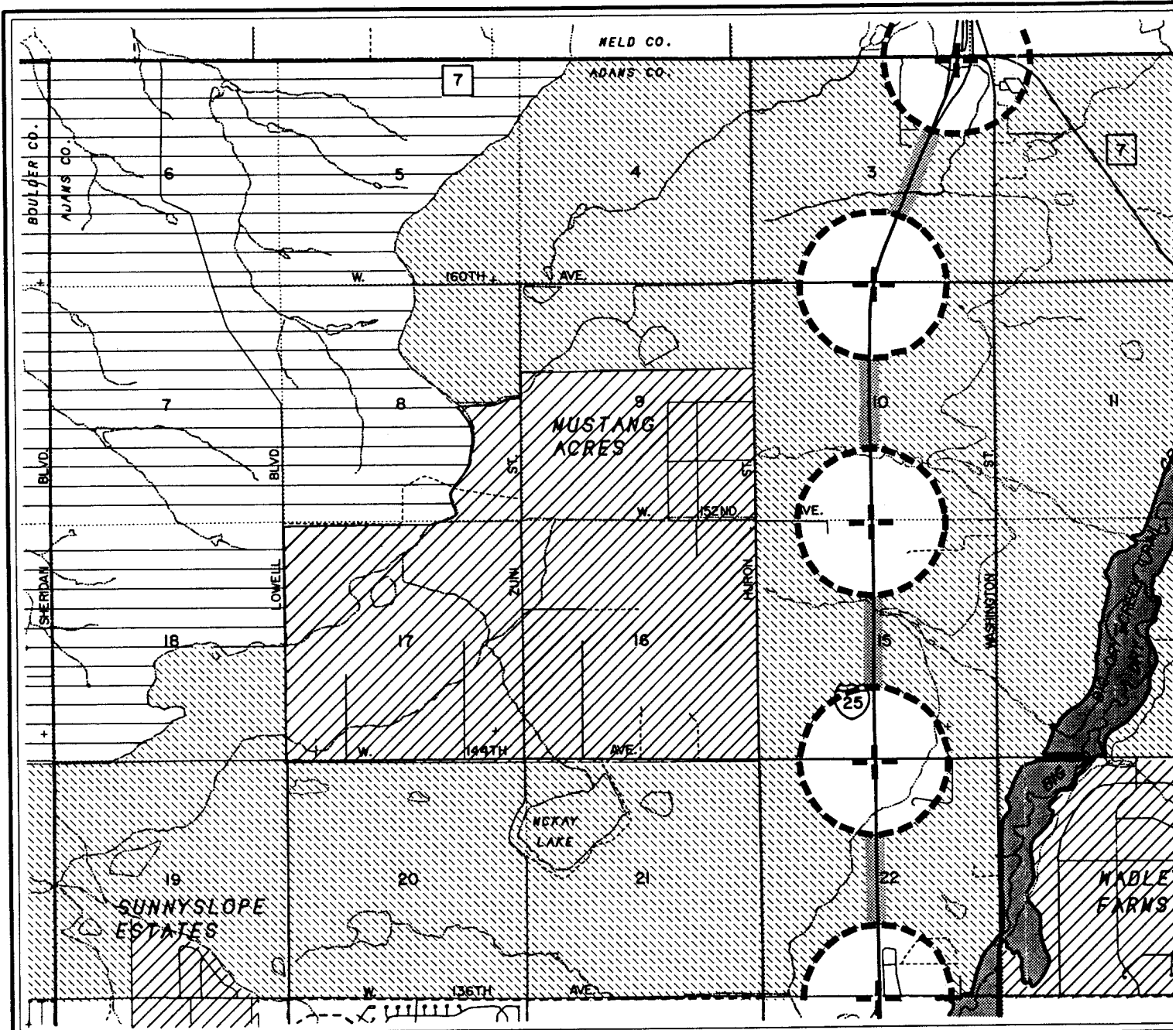
VIII - 3

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| | SUBURBAN RESIDENTIAL | | ACTIVITY CENTER | | AGRICULTURAL |
| | RURAL RESIDENTIAL | | MANUFACTURING EMPLOYMENT | | FLOODED RECREATION |
| | MIXED USE URBANIZATION | | | | |

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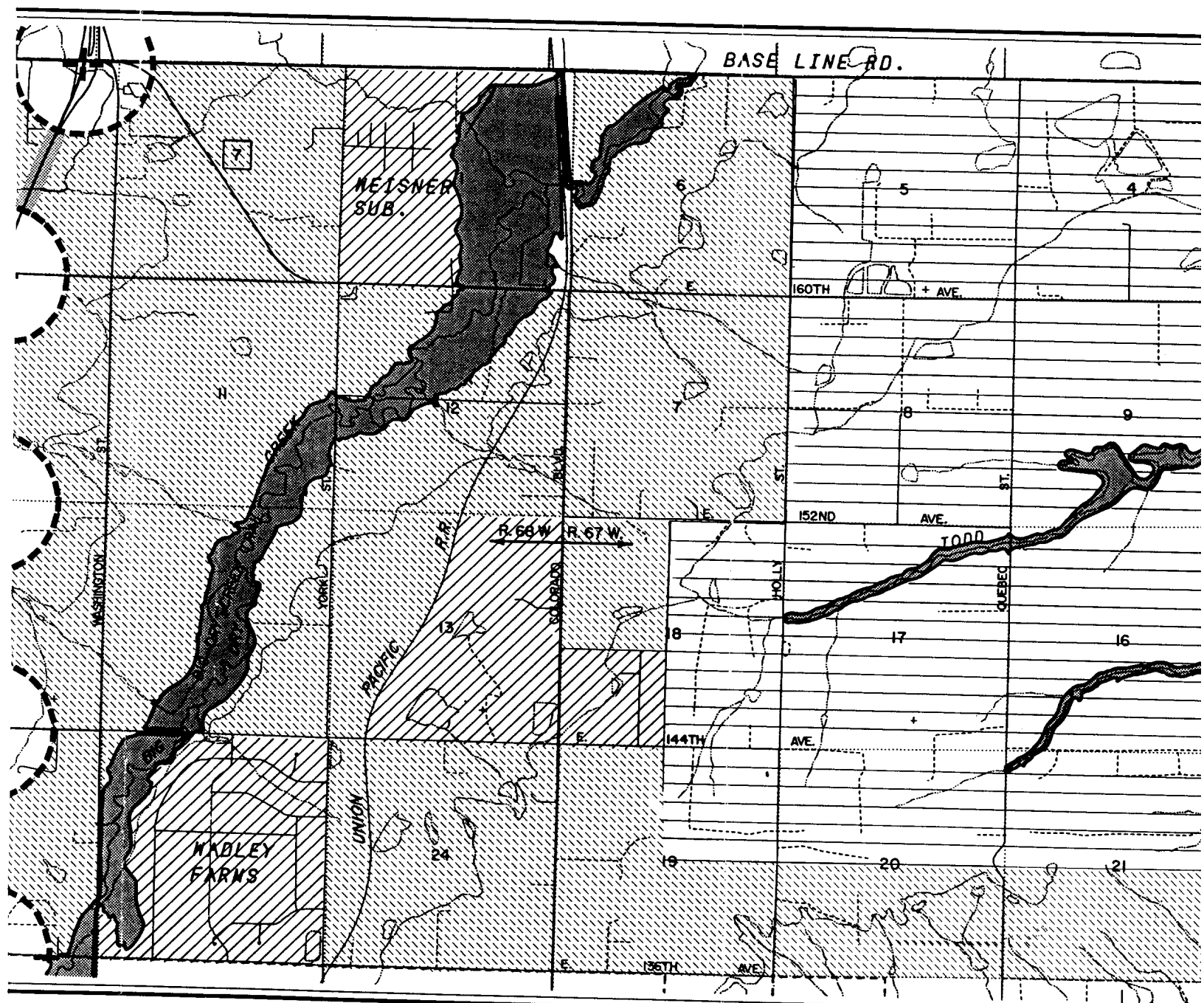


Adams County
Colorado

NORTHWEST ADAMS COUNTY GROWTH AREA

VIII - 4

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TH AREA



ACTIVITY CENTER



RURAL RESIDENTIAL



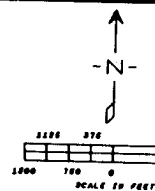
MIXED USE URBANIZATION



AGRICULTURE - HOLDING ZONE

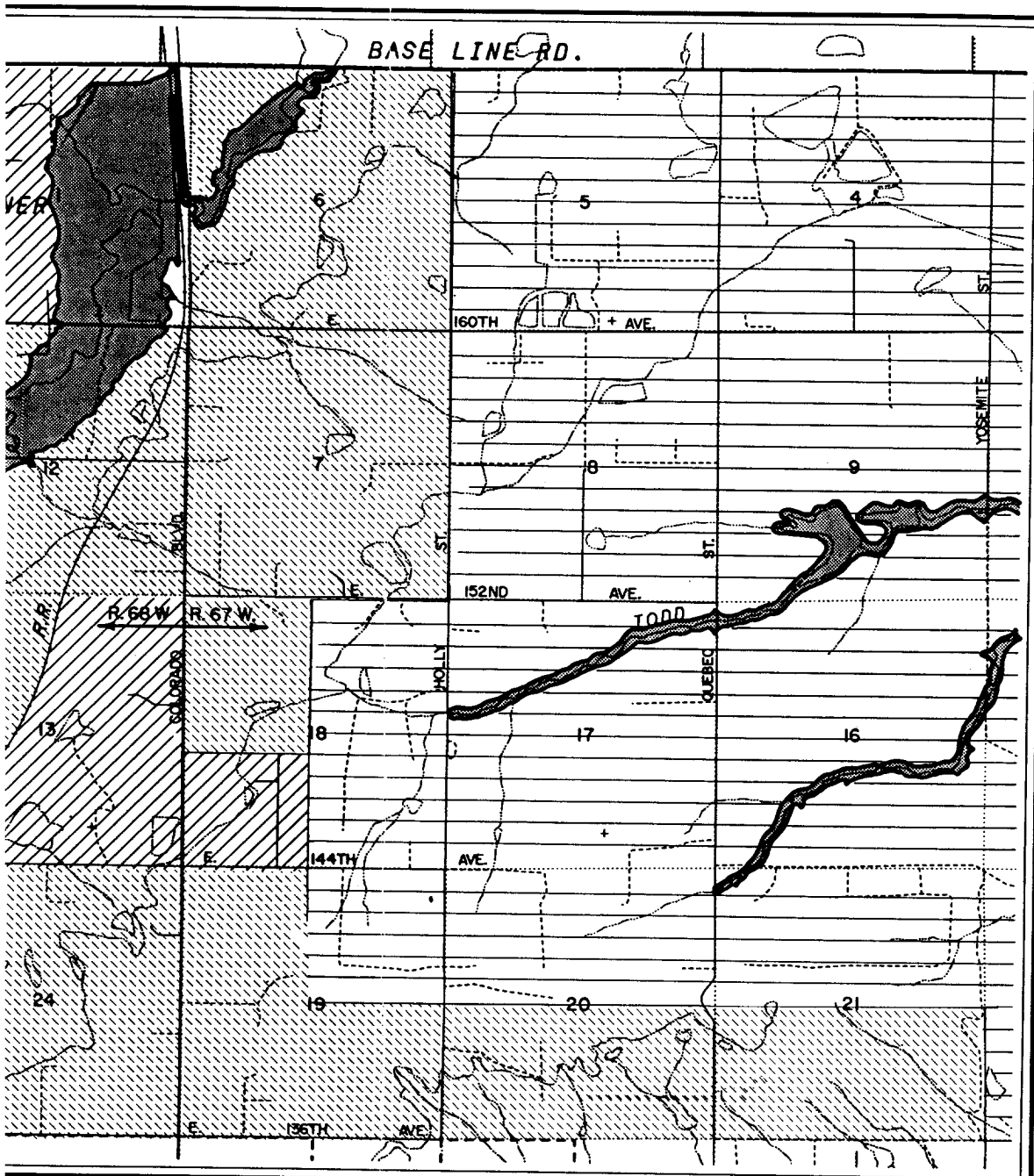


FLOODPLAIN, OPEN SPACE,
RECREATION



ADAMS CO. PLANNING
450 SOUTH FOURTH
BRIGHTON, COLORADO

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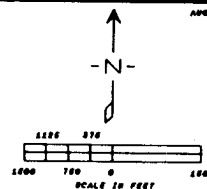
URBANIZATION



AGRICULTURE - HOLDING ZONE



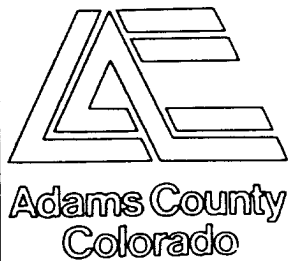
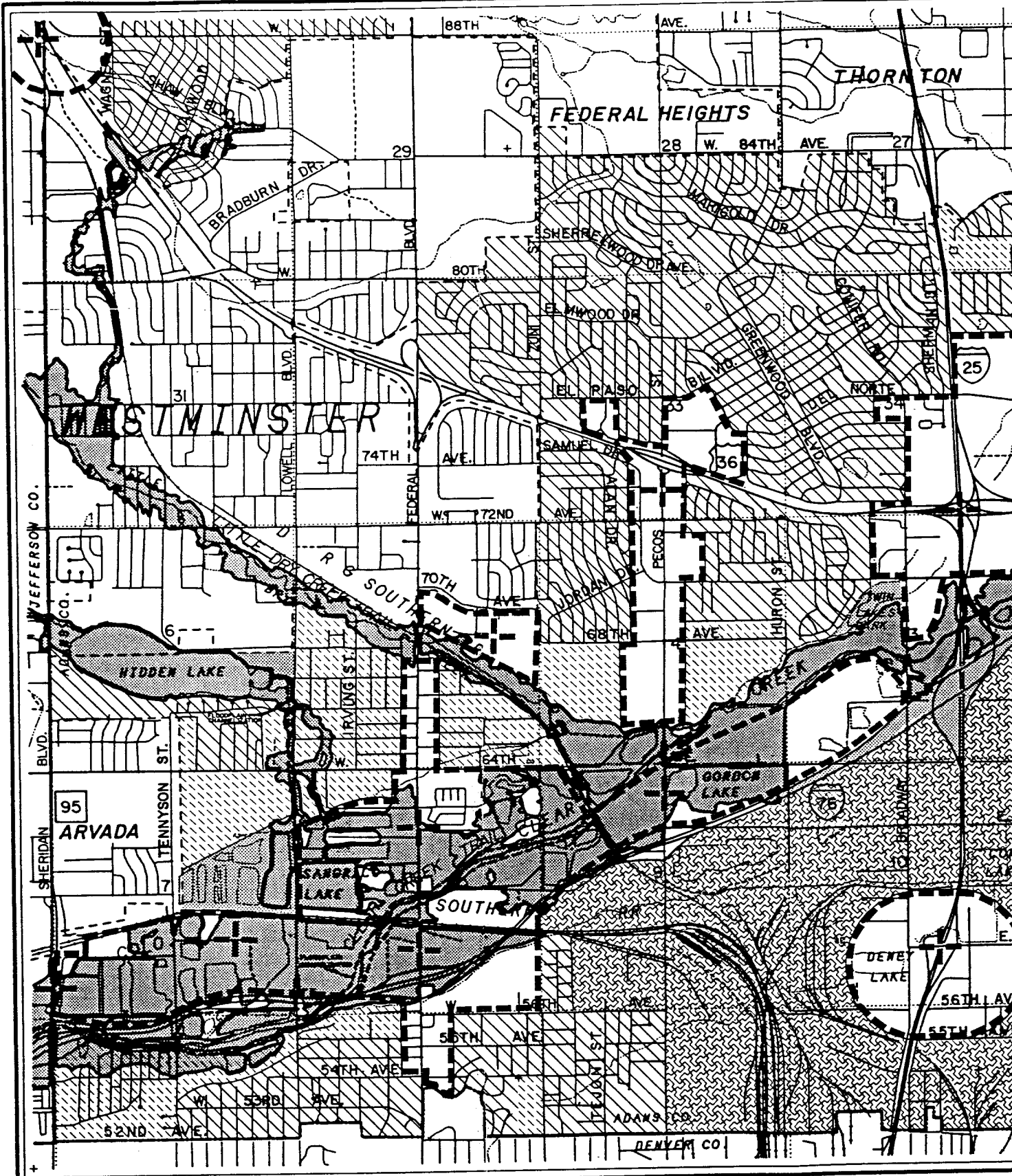
FLOODPLAIN, OPEN SPACE,
RECREATION



ADAMS CO. PLANNING DEPT.
456 SOUTH FOURTH AVENUE
BRIGHTON, COLORADO 80601

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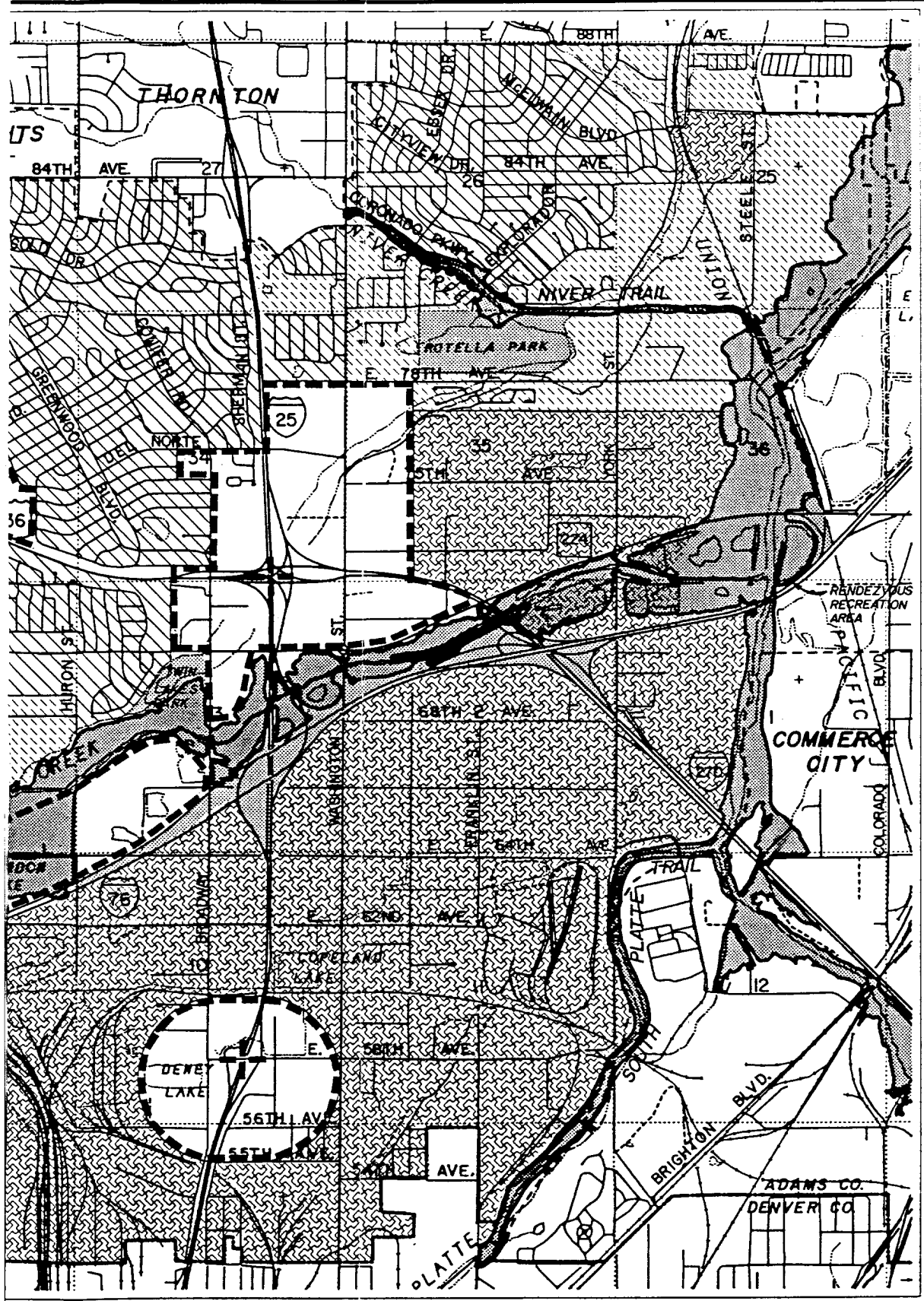
SOUTHWEST ADAMS COUNTY GROWTH AREA

VIII - 5

-  FLOODPLAIN, OPEN SPACE, RECREATION
-  SUBURBAN RESIDENTIAL
-  MIXED USE URBANIZATION



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PLAIN, OPEN SPACE,
RECREATION

RESIDENTIAL

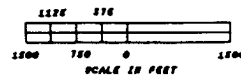
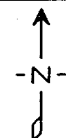
URBANIZATION



ACTIVITY CENTER

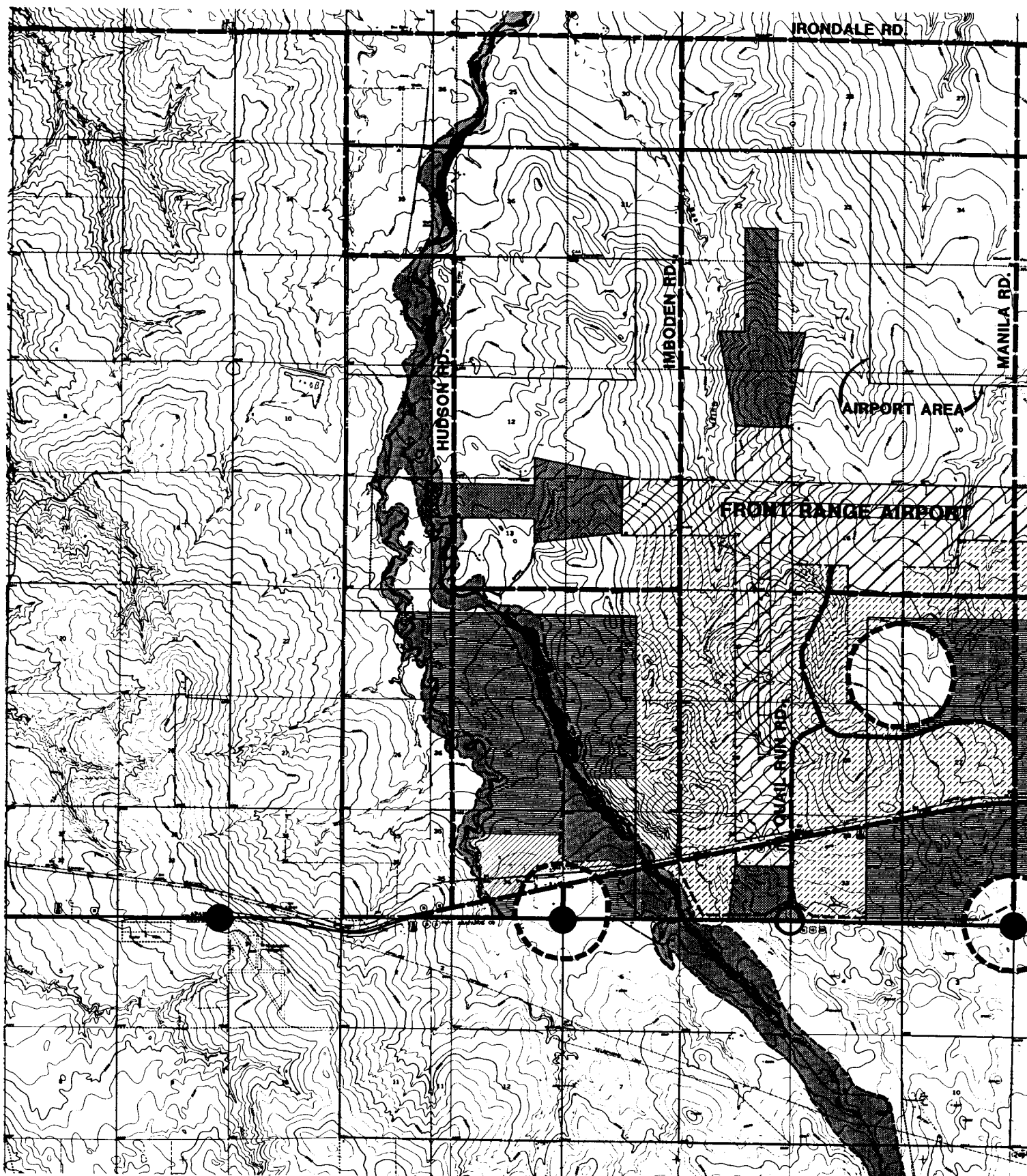


MANUFACTURING EMPLOYMENT



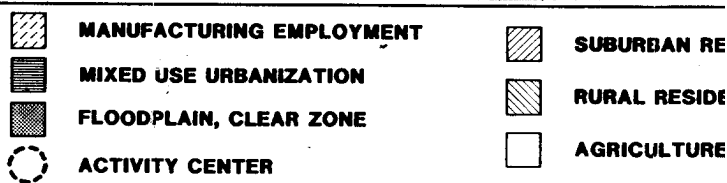
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450 SOUTH FOURTH AVENUE
BRIGHTON, COLORADO 80601

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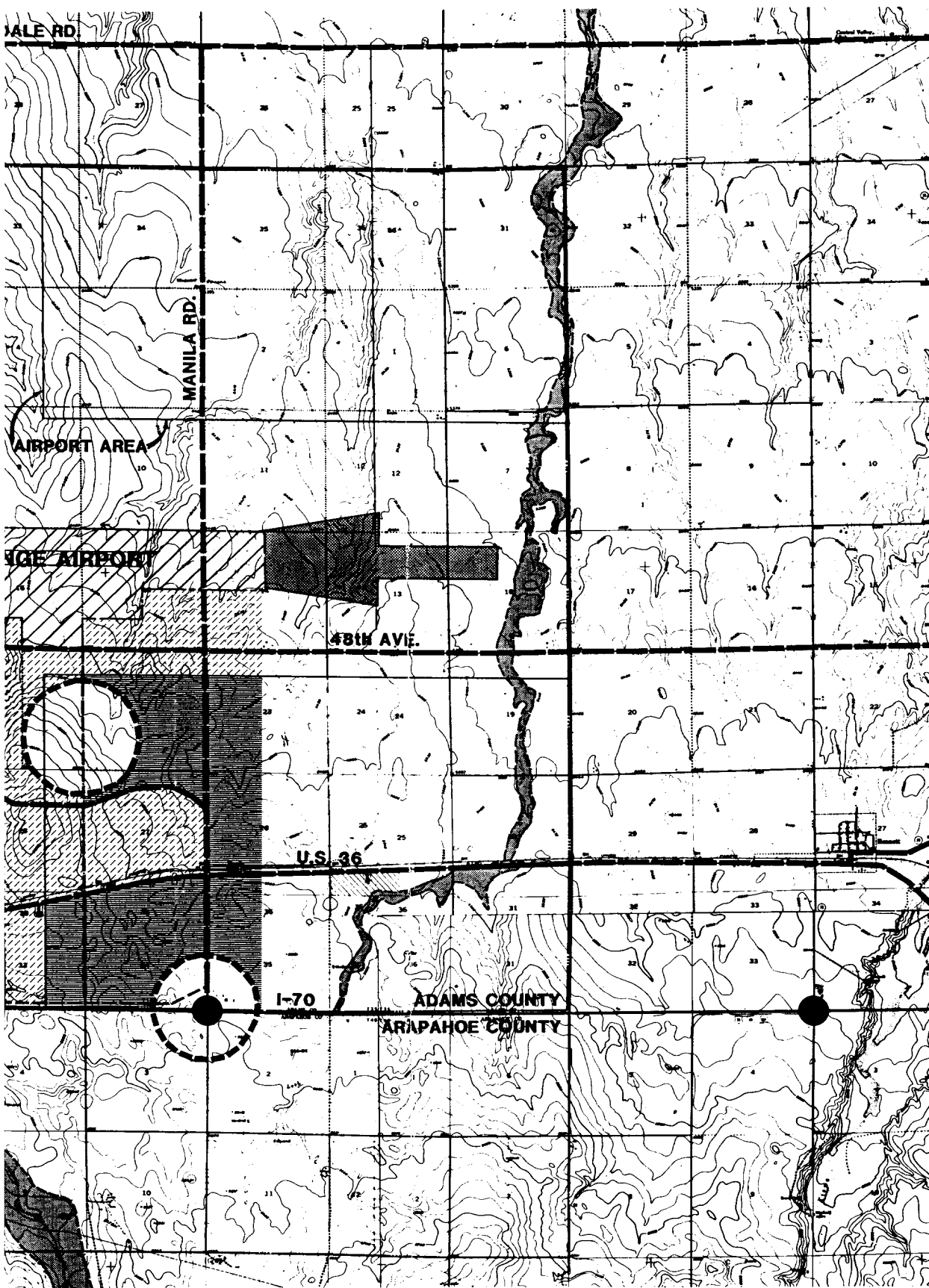


FRONT RANGE AIRPORT GROWTH AREA

VIII - 6

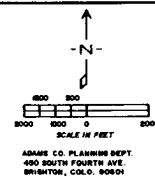


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-  SUBURBAN RESIDENTIAL
-  RURAL RESIDENTIAL
-  AGRICULTURE

-  ARTERIAL
-  COLLECTOR, FRONTAGE ROAD
-  INTERCHANGE
-  PROPOSED INTERCHANGE



(2)

CHAPTER IX

ADJUSTMENT PROCEDURES

The Comprehensive Plan is not intended to be a static document. The Future Land Use proposed in Chapter VII, the arterial routes shown in Chapter V, and other portions of the Plan are based upon careful analysis of existing conditions and projections into the future. If the conditions change, or the projections prove to be inaccurate, the Plan may be adjusted to compensate.

The Plan is also based upon a set of goals, objectives, and policies outlined in Chapter II. These statements provide guidance and direction for the Plan and should not be altered without careful thought. For instance, the goal of encouraging economical water and sewer systems in Urban Growth Areas should remain appropriate, even as the boundaries of the Areas changes through the years.

The Comprehensive Plan is a document that has the potential to become increasingly precise as time goes on. Each adopted element is a combination of data analysis, County goals, and conclusions about how to realize these goals (a plan). In some cases data have been collected, but no conclusions have been reached. This information is included in the Comprehensive Plan but is not used for land use control purposes. In the future it will be important to complete and adopt several more elements. The following list indicates Adams County's planning status in 1983.

Plan Components

Adopted as part of this Plan (1983)

1. Future Land Use
2. Transportation
3. Parks, Trails, Open Space
4. Waste Management
5. Mineral Extraction

Background Subject Areas

1. Water and Sewer Service*
2. Schools*
3. Fire Protection*
4. Existing Land Use
5. Population and Economy
6. Natural Resources
7. Housing
8. Police Protection*

*These subject areas will be developed further and adopted as elements of the Comprehensive Plan in future years.

Authority

By State Statute (C. R. S. 30-26-106) it is the duty of the County Planning Commission to make and adopt the Comprehensive Plan. In Adams County the Plan has also been supported by the Board of County Commissioners through passage of a Commissioners' Resolution.

Because responsibility for the Plan is vested with the Planning Commission, this body must also decide when, and in what manner to adjust the Plan. According to State Statute 30-28-107, amendments or revisions are to be made only after "careful and comprehensive surveys of existing conditions and probable future growth." Minor revisions and boundary amendments are directed by the Planning Commission because they "keep" the Plan (and make certain that it is) current. Board of County Commissioners resolutions are not needed for each of these adjustments because the Board has indicated its support for the Plan as an active land use control document through their initial Resolution. Changes to County goals, objectives, and policies, on the other hand, should be endorsed by the Board of County Commissioners before action by the Planning Commission. The reason for this is the Board is elected and acts as the policy-setting body for the County. The Planning Commission is advisory to the Board and cannot dictate the goals and policies that guide the Plan.

Procedures

There are two main types of adjustments that may be made to the Comprehensive Plan. Amendments are alterations to adopted Plan elements such as Future Land Use or Transportation. An amendment may change the land use designation of a particular parcel of land or add an arterial corridor to the County road network. Revisions bring portions or all of the Plan up-to-date through review and change of background data, analysis, and conclusions. Revisions are usually necessary every five years in a rapidly growing county, and are also appropriate following a major data-collection effort such as the decennial U. S. Census. Both adopted Plan elements and Background Subject Areas may be revised, while amendments apply only to adopted portions of the Comprehensive Plan. According to State Statute 30-28-108, amendments are adopted by the Planning Commission by Resolution and certified to the Board of County Commissioners and municipalities within the County (State Statute 30-28-109).

The Plan Future Land Use categories are much more general than zone districts used in the Zoning Regulations. The Plan

also designates sufficient land in advance of development to accommodate all growth projected for the next 20-25 years. It is not, therefore, necessary to process amendments according to a month-to-month schedule similar to that used for zoning cases. Likewise, revisions are made only periodically after considerable staff analysis and do not need to be tightly timed. In general, adjustments will be heard by the Planning Commission once every six months, in January and July. All requests for amendment or revision must be submitted 60 days in advance of the hearing date in order to permit public notice to be given and to allow staff to complete all necessary background work.

Amendments

The majority of amendments will be made to the Future Land Use element. Other possibilities are adding an arterial to the Transportation element or a trail route to the Parks, Trails, and Open Space element. Amendments may be suggested by the Board of County Commissioners, the Planning Commission, a County citizen, or a County staff member. The request is made in writing to either the Adams County Planning Director or the Chairman of the Planning Commission. The Director or Chairman may then arrange a meeting to define the request, outline the information to be analyzed, and review the probable hearing schedule.

Staff analysis tests whether or not the proposed amendment will be generally consistent with the Plan. The staff first examines what development factors have changed that would support the amendment. These include the following:

1. Transportation improvements, such as a new road or interchange, that increase the visibility and access potential of nearby property.
2. Utility extensions to support urban level development where rural level development currently exists.
3. Changes in land use character due to a natural transition from one type of development to another. This criterion is only acceptable if the transition is towards higher quality development. Deterioration of a residential neighborhood or manufacturing district shall not be encouraged by amendment to the Plan.
4. Physical changes to the environment, such as stream channelization, gravel extraction, or loss of irrigation water that render previous uses or restrictions out-of-date.

The second test is the compatibility of the proposed amendment with the rest of the Plan. This is based upon general planning principles, not on the specifics of a detailed development proposal. For example, Activity Center uses are generally compatible with Mixed Use Urbanization, but not with Rural Residential.

The third test relates the proposed amendment to specific criteria in Chapter VII of the Plan. For example, Activity Centers and Manufacturing Employment areas must have direct access to the County arterial road network. Rural Residential areas must be accessible to emergency services within specified response times. If quantifiable criteria are not met, there must be reasonable assurance in the amendment proposal that they will be satisfied before development takes place.

The last test judges the proposed amendment according to County goals, objectives, and policies. If a conflict exists, the Planning Commission must refer the case to the Board of County Commissioners for recommendation. The Board may alter a goal or policy to resolve the conflict, waive a goal or policy because of specific circumstances, or recommend that the Planning Commission deny the amendment request.

Revisions

The Plan is a logical extension of County goals and policies in Chapter II, and the careful analysis of background information contained in Chapters III through VII. If the goals change or the background information becomes out-of-date, the Plan may need to be revised. Revisions also serve to incorporate the amendments that have taken place during the years since the last revision of the Plan. Revisions may take place in several ways:

Periodic Revisions

At regular intervals the entire Plan must be revised, reprinted, and distributed to those agencies and individuals who frequently use it for a reference. The interval recommended here is five years, although it may be altered at the discretion of the Planning Commission and Planning Director. In no case, however, should periodic revisions be made less than every ten years.

Area Revisions

The Future Land Use portion of the Plan is divided into several geographic sub-areas allowing portions to be revised independently if conditions warrant. An example mentioned previously was the Rocky Mountain Arsenal property which could be added to the Plan if it becomes available for development. Sub-areas such as Northwestern Adams County could also be revised separately from the rest of the Plan. These revisions would normally be initiated by the Planning Director after discussion with the Planning Commission or Board of County Commissioners. A significant amount of staff work would be required to collect and

analyze data, prepare the revision for hearing, and publish a Plan supplement.

Element Revisions

The Comprehensive Plan contains several adopted Plan elements in addition to Future Land Use that may be revised separately. These include: Transportation; Parks, Trails, and Open Space; and Waste Management. There are also Background Subject areas such as: population and economic growth, and housing that may need restudy. Major changes in any components may lead to revision of individual sections, instead of as part of a periodic revision of the entire Plan. Element revision also requires considerable staff work and will be initiated by the Planning Director in consultation with the Chairman of the Planning Commission.

Goals, Objectives, and Policies Revision

Chapter II contains a summary of the goals, objectives, and policies for Adams County that give direction to the Plan. Although the Plan is used primarily by the Planning Commission and County staff, these bodies are actually working towards goals established by the Board of County Commissioners.

Every two years there is the potential for the composition of the Board to change through election of one or two new members. When this occurs it is vital to review and reconfirm the goals and policies of the previous Board with the new Commissioners. Arrangements for review are the responsibility of the Planning Director in consultation with the Chairman of the Planning Commission. The review will be held six to twelve months after the new Board takes office. The Planning Department will hold several sessions with the Board of County Commissioners to explain the intent of the written goals and policies of the Plan and specific land use recommendations. The Board may then act during the following six months to reconfirm its support for the Plan by adopting a Resolution to that effect.

The types of Plan adjustment that may be considered and adopted by the Planning Commission are listed on the following page. Next are diagrams illustrating how the procedure operates. Together they supplement the preceding text by summarizing a relatively complex process.

Types of Plan Adjustment

Amendment

<u>Element</u>	<u>Typical Action Taken</u>
Future Land Use	Change land use designation of specified area, for example from Agriculture to Suburban Residential.
Transportation	Add or delete arterial corridor to Transportation map.
Parks, Trails, Open Space	Add or delete park or trail on Parks, Trails, and Open Space map.
Waste Management	Alter waste management strategy.

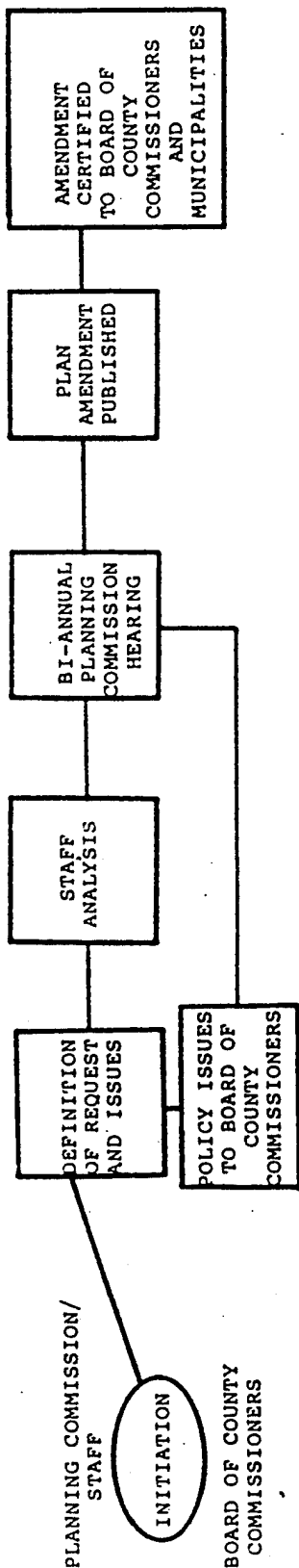
Revision

<u>Type of Revision</u>	<u>Typical Action Taken</u>
Periodic	Revise and reprint <u>Plan</u> on regular basis (5-year interval).
Area	Revise and print supplement to <u>Plan</u> covering a geographic portion of the County.
Element	Revise and print new adopted <u>Plan</u> element or Background Subject Area component of the <u>Comprehensive Plan</u> .
Goals, Objectives, Policies	Review policy issues with Board of County Commissioners. Revise goals, objectives, and policies statements as appropriate.

FIGURE IX-1

COMPREHENSIVE PLAN ADJUSTMENT PROCEDURES

AMENDMENTS



REVISIONS

