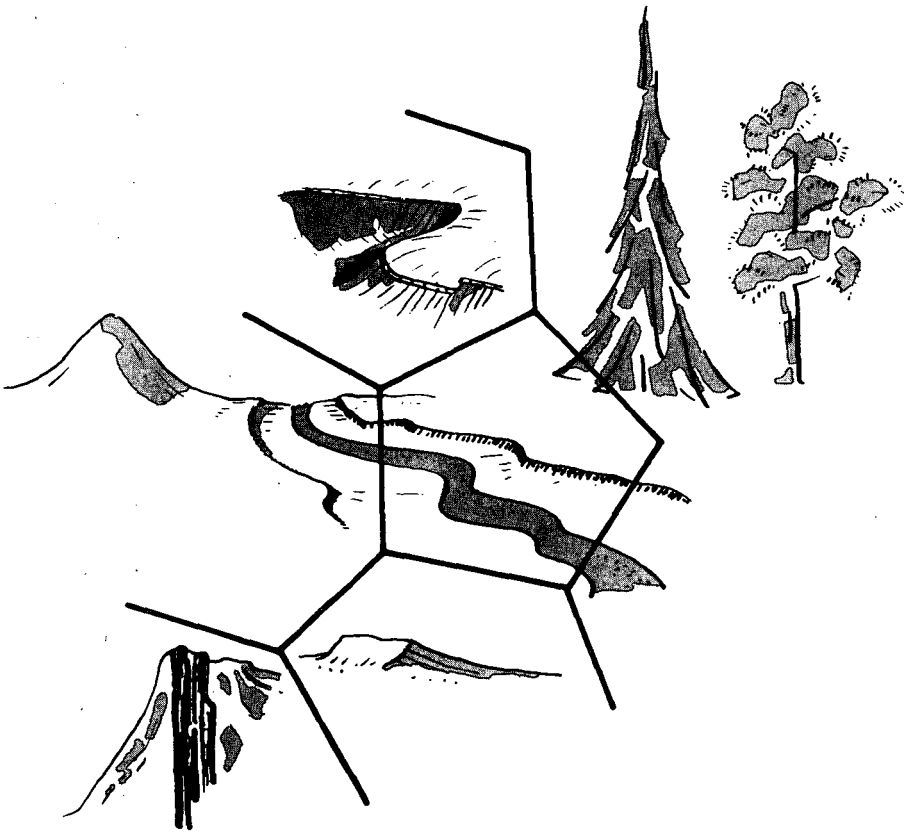
VALMONT DIKE
Natural Area Study



Department of Geography / University of Colorado

ERRATA

Page 11, line 28: for "1967" read "1867."

Page 12, line 38: for "cemetary" read "cemetery."

Page 15, Table 1, line 12: for "Cemetary" read "Cemetery."

The reader may note a few spelling inconsistencies on the maps which could not be corrected prior to publication.

VALMONT DIKE

NATURAL AREA STUDY

Michael R. Tripp, William G. Callahan
and Manik Hwang

Editors

DEPARTMENT OF GEOGRAPHY
UNIVERSITY OF COLORADO

Boulder, Colorado

1970

TABLE OF CONTENTS

FIGURES

TABLES

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University of Colorado Foundation
The City of Boulder
The Boulder County Commissioners
The Graduate School, University of Colorado
Boulder Valley School District No. RE-2 J.

FOREWORD

This report is one of six undertaken this year in the Department of Geography at the University of Colorado. It has become almost a tradition for the graduate seminar in land use to initiate a project in the local area in cooperation with an agency of the Boulder community on either the municipal or county level, sometimes both.

These studies achieve a number of objectives. The participating students undertake a realistic project which they are able to plan, execute, and publish within the brief span of one semester. Also, these studies provide new information for municipal and county officials and citizen groups concerned with planning and guiding the growth and development of the City of Boulder and Boulder County. In short, these are professional training exercises for graduate geographers and are a serious effort in providing new planning perspectives in the interest of public service.

In response to a suggestion by the Natural Areas Committee of the University of Colorado, the land use seminar elected to study and analyze a number of natural sites in the Boulder Valley. The group was also joined in the endeavor by the graduate field seminar of the Department of Geography.

The cooperative base within the Boulder community was wider than usual this year. The sites chosen for study seemed to have potential for a variety of uses beyond their present development. These includes instruction of public school and university students, scientific research, recreation, greenbelt, and open space. The graduate students involved worked in cooperation with the resident property owners, the Parks and Recreation Department and the Planning Office of the City of Boulder, the Department of Development and the Parks and Open Space Advisory Committee of Boulder County, the Boulder and Longmont Offices of the Soil Conservation Service, the Science Director of the Boulder Valley RE-2 School District, the Planning Office and the Natural Areas Committee of the University of Colorado, and the Denver Regional Council of Governments.

Sometimes the graduate researchers felt that they would have liked to pursue certain themes in greater depth if there had been more time available. Nonetheless, they join me in expressing the hope that this report provides informative insights on a fascinating part of Boulder County.

The various chapters which appear in this study were originally submitted as special reports by the individuals indicated. They represent the endeavors and views of the authors and in no way should be interpreted as the official views of the Department of Geography or any other cooperating agency or organization previously mentioned. Because of this independence from official views, the participants in this project are especially grateful to the Graduate School of the University of Colorado, the City of

Boulder, the Boulder County Commissioners, the Boulder Valley RE-2 School District and the University of Colorado Foundation for sharing the costs of printing this report.

This is the collective and individual effort of a group of dedicated geographers concerned about the quality of the local environment and its attendant stresses. Boulder County residents, students, and local officials may gain understanding from this report that will assist them in their efforts to perpetuate the Boulder area as a pleasant and attractive place to live.

Donald D. MacPhail, Ph.D.
Professor of Geography

Boulder, Colorado
June, 1970

ACKNOWLEDGMENTS

The editors wish to express their appreciating to the many individuals involved in producing this report. Dr. Donald D. MacPhail initially brought the need for this study to our attention, and has encouraged us and assisted us throughout the period of its development. The students, whose names appear in the Table of Contents under the appropriate chapter headings, worked with interest and concern to make this report as complete and informative as it is.

Our thanks also go to the following individuals and groups for their time, assistance, and helpful information: Ralph E. Bachus, Boulder Public School Science Director; Carol Hamon and D. C. Moreland, Soil Conservationists, Agricultural Stabilization and Conservation Service, Longmont, Colorado; the Boulder City Planning Department; the Boulder County Assessor's and Treasurer's Offices; the Boulder County Planning Department; the Transamerican Title Company, Boulder Office; the Flatiron Companies, the Colorado Brick Company and the Public Service Company of Colorado; Eldin Baird, Baird Realty, Boulder; Jack K. Basart, M.A.I., Real Estate Appraiser; Robert E. Key, Director of Parks and Recreation for the City of Boulder; Lloyd Harrell, Assistant to the City Manager of Boulder and Don Look of Look Photos. Special thanks go to Dr. W. A. Weber of the University of Colorado Museum for his help.

Mrs. Nancy Stonington, Graduate Geography Student, created the cover design and Mrs. Sue Middleton, Secretary, Department of Geography, typed the manuscript. We also wish to thank Mr. Wilbert J. Ulman for his work with the copy camera and contact printer in the final preparation of the maps for publication.

The Editors

William G. Callahan
Manik Hwang
Michael R. Tripp

CHAPTER 1. INTRODUCTION

Michael R. Tripp, William G. Callahan, and Manik Hwang

This report represents a comprehensive evaluation of Valmont Dike and its immediate environs as a potential natural area study site.

Valmont Dike, rising approximately 200 feet above the surrounding terrain 4 miles east-northeast of Boulder, Colorado, has long been a prominent landmark in the Boulder area. Originally, the series of elongated hillocks were referred to as Valmont Buttes, but the term "dike" is more geologically correct since the core of Valmont Dike -- the reason for its topographic prominence -- is porphyritic basalt which thrusts its way upward through the overlying beds of sedimentary materials to solidity as an igneous intrusive.

To refer to Valmont Dike as a "natural area study site" implies that the area offers unusual or unique attributes and amenities. Certainly the Dike's geologic structure is of special interest, as are the varied vegetation zones it harbors, and the vantage point it offers for observing the surrounding landscape. In being offered such opportunities for study and experience, students find the immediacy and reality of direct contact with the Dike both stimulating and informative. Such considerations strongly suggest that Valmont Dike's "highest and best use" is to remain in a relatively undeveloped state, being always available to interested parties and study groups from various University departments as well as to others similarly oriented.

Five teams of students have shared responsibility for compiling and presenting the material in this report. Included are chapters dealing with historical and current aspects of the area's physical environment, land use, land ownership and tenure, and land economics. Considerations of how this area might be secured and maintained as a natural area study site are treated in the Conclusion.

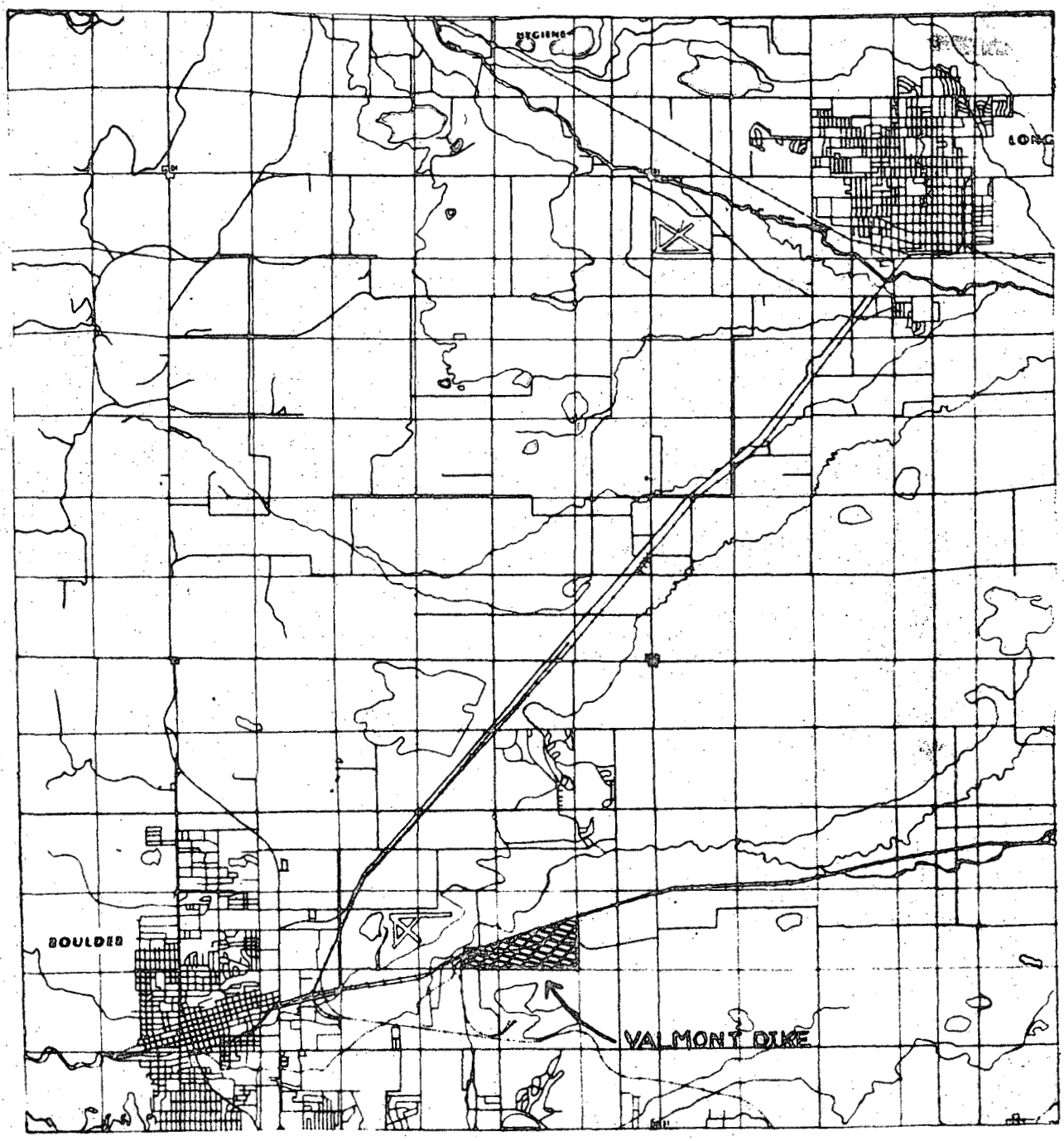

FIG. 1A Location of Valmont Dike Area

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CHAPTER 2. AN ENVIRONMENTAL SURVEY

Scott Mernitz, George R. Greenbank and Helen L. Young

Location

Valmont Dike is located approximately 4 miles northeast of Boulder, Colorado. A buffer area surrounding the dike will also be considered in this survey because of the interesting contrasts to be made with the dike itself in terms of vegetation, relief, and land use. All of Sections 22 and 23, T 1 N, R 70 W were surveyed. Portions of Sections 26 and 27, directly south of Sections 22 and 23, will be included in the cadastral and land use chapters of this report.

Topography

The general physiographic province in which Valmont Dike is located is the Denver Basin, a large synclinal trough within the Northern Colorado Piedmont. The overall topography consists of a series of broad, shallow valleys with gently sloping sides, plateaus and mesas capped by resistant materials, and stream terraces and floodplains.

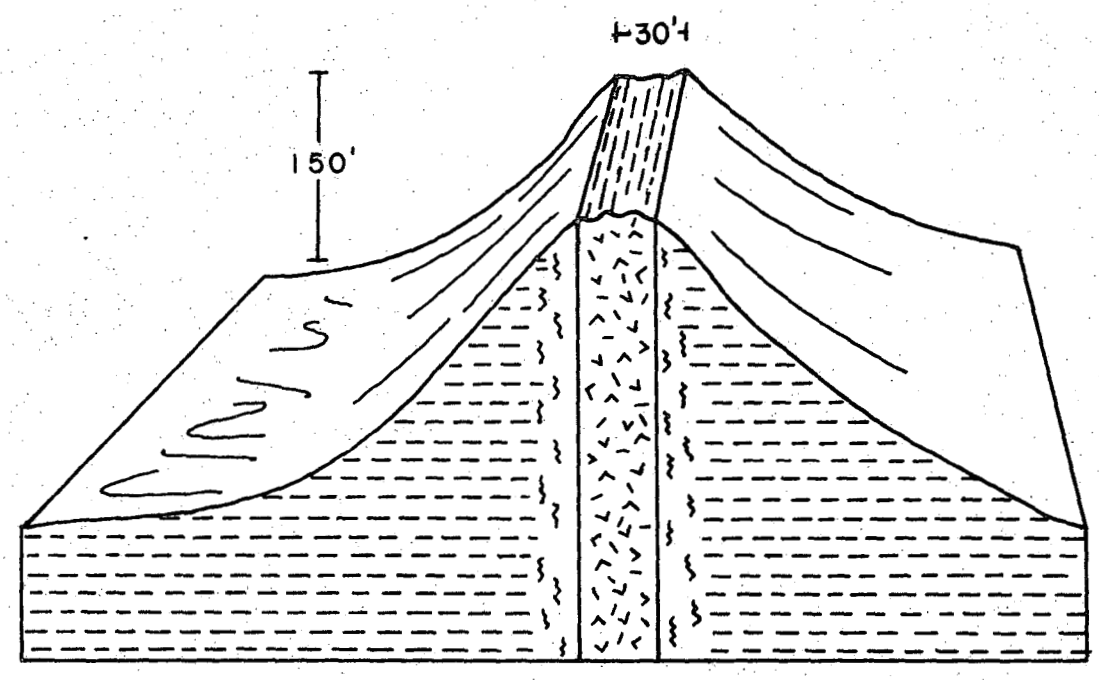
In order to adequately understand and evaluate the topography of Valmont Dike, its genesis must be considered. Horizontal beds of sediments deposited during Cretaceous time (135 million to 65 million years ago) are thick successions of predominantly marine-origin silts and sediments laid down adjacent to or in an advancing sea (Knight, 1964). The only visible sedimentary outcrop of this type in the vicinity of the dike is the Pierre formation which is composed of dark gray shales and shaly sandstones. In the northern foothills of the Front Range, the Pierre reaches a thickness of approximately 8,000 feet (Griffitts, 1949).

A vertical igneous intrustion of Tertiary time, Valmont Dike cuts through the Pierre bedding planes at a right angle (Figure 1). The dike, now exposed at the surface, forms a prominent east-west ridge extending for a mile immediately south of the town of Valmont. Further to the east, there are small rock outcrops extending for another mile. The dike outcrop along the top of the ridge is about 20 feet wide while at its western end a 40 to 50 feet width is exposed. These exposures provide excellent cross-sections of the rock comprising the dike. The highest part of the dike rises over 200 feet above the floodplain.

Dark gray, macrocrystalline basalt comprises the dike. Crystals of plagioclase feldspar and olivine give the basalt its porphyritic texture. The Pierre shale bedrock has been partially metamorphosed at its contact with the igneous intrusive. This resultant rock is not a true slate, but is called hornfels, a fine-grained non-schistose metamorphic.

CROSS SECTION OF VALMONT DIKE

SHOWING BEDROCK STRUCTURE



PIERRE SHALE

BASALT PORPHYRY

HORNFELS — Partially metamorphosed shale

FIG. 1B

Valmont Dike provides interesting examples of weathering. First, the basalt dike, being much more resistant than the friable shales, stands high above the floodplain. Originally the dike was completely covered by shale bedrock, but through time it has withstood the erosive power of the elements (especially Boulder Creek). Consequently, its cover has been removed without the dike being removed itself. The dike is marked by jointing -- a series of rock fractures vertical and transverse to the bedding plane.

The north slope of the dike, dropping abruptly to the floodplain, is much steeper than the south slope which is gently inclined. Both slopes are covered with fragments of the dike, providing a good field example of mass wasting. A remnant of a gravel-capped stream may be easily viewed in a road cut southeast of the fluorspar mill on the southern slope.

The Pierre is not a good aquifer, and there is no trace of groundwater in the intrusive itself. The surrounding terraces in Sections 22 and 23 do contain ground water tables. The Pierre formation is conducive to surface water retention, therefore, the reservoirs south of the dike do not suffer from water seepage.

Vegetation

The topography also acts as a control on the type of vegetation found on the dike. Four zones of vegetation are recognized due to the effect of topography: the south slope, the ridgetop, the north-facing slope along the ridge, and the north slope of talus blocks, shrub thickets and grassland.

The steeper, shaded north slope supports more rock-clinging plants, such as mosses, ferns and lichens. Examples of ferns include: golden aster (Cystopteris montana de Lamarck), and club moss (Lycopodiacea spp.). Representing the mosses, these genera are present: Tortula, Bryum, Grimmia, and Hedwigia. Covering the rocks are a number of crustose lichens: Rinodina, Rhizocarpon, Acarospora, Parmelia, Dermatocarpon, and Umbilicaria. All of the above genera are good representatives of a rock-crevice flora. The lower part of the north slope is dominated by shrub thickets of wild plum (Prunus americana Marshall) and other woody plants.

Due to more exposure to direct sunlight, the ridgetop and the south-facing slope have a different vegetational character than does the north slope. The ridgetop supports a scattered cover of woody plants including the wild plum and the sand cherry (Prunus pumila Linnaesu), wild currant (Ribes triste Pallas), skunkbush (Rhus trilobata Nuttall), and several herbaceous species. The south slope contains little interesting vegetation. It has been altered by the presence of man (the fluorspar mill and the brick yard are located here). In places where the disturbance has been minimal the native grass cover of the dominant blue gramma (Bouteloua gracilis H.B.K) is well developed. Among the native species are the following: prairie sage (Artemisia spp.), Spanish bayonet (Yucca glauca Nuttall), and the prickly pear cactus (Opuntia polyacantha Haworth). A few weedy species of mosses (Bryum spp.) occur in the dense grass.

A very rugged terrain on the dike itself permits only a hardy vegetation cover. The soil is thin and rocky, and not suitable for agriculture. Valmont Dike and its vegetation are quite durable. They would not suffer from field trips into the area.

Summary

The effect of man's presence in the study area is especially noticeable due to the presence of the fluorspar mill adjacent to the dike on the west, south and east sides. Some definite effects on the biota, namely the lack of native vegetation on the slope, may be noted. On the basis of this environmental survey, it is recommended that the area be established as a natural site by interested parties. Valmont Dike is unique geologically as a Tertiary intrusive into sedimentary rock. There is also biological interest in the form of vegetation and exposure. Distance from Boulder (approximately 4 miles) provides easy access for public school and university students. A responsible party should acquire control of the dike and the immediate adjacent area before man destroys or alters a unique and valuable natural feature.

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Maps

U.S. Geological Survey 7.5 minute topographic quadrangle: Niwot, Colorado (1967).

CHAPTER 3. HISTORY AND LAND USE

Manik Hwang and Gary A. Heaslet

Introduction

The Valmont Dike area has been the scene of a colorful part of Boulder Valley's historical evolution. Although the topography is relatively unimpressive when compared to the spectacular Front Range to the west, the early white settlers in this area found the landscape aesthetically pleasing nonetheless. The transition of land use patterns in this area reflects the heavy impact of these white settlers on the land in the 110 years that have occupied and used the area.

Historical Land Use

The region was originally used by the Arapahoes and the Utes as a campground, hunting area and burial site. Early historical accounts tell of the antelope roundup held in the vicinity of Valmont Dike in 1860, the last of its kind before the Arapahoes were moved to Oklahoma. Another account describes a burial ground with 15 to 20 mounds which was located south of the dike (Larkin, 1968). The Boulder Creek floodplain adjacent to the dike was a natural area for hunting, camping and replenishing supplies. In these early days, the only other visitors to the area were occasional trappers who did little to modify the natural surroundings.

In 1859 a party of miners arrived in the area, and after convincing the Indians of their peaceful intentions, made a base camp for exploration into the mountains to the west for gold and silver. One of the party, Thomas Aiken, later took up farming on some land close to the dike. Thus, the first white settlement began about 1860. The farmers who later arrived sold their produce to the miners who were in the mountain mining camps. Service centers were established which competed with each other for the business of the miners.

The farmers, using irrigation practices, and planting the fertile terraces and floodplain, had excellent crops for the first few years. Wheat was the main crop grown although the farmers also grew fruits and vegetables, adjusting their crops to the demands of their customers. Within a few short years, the Valmont area had become a thriving agricultural community. More people began to move into the vicinity.

Thomas Jones, one of the first residents of the area, built a large home which served as a stage coach stop and inn. Judge A. D. Allen and his son made a plat of Valmont in 1865, laying out streets, lots and alleys (Figure 2). "The plat included three blacksmith shops, two general stores, one hardware store, two hotels, a school, two churches and the offices of three doctors." In addition the town had three saloons on the west end, the area being referred to as "Devils Row" (James).

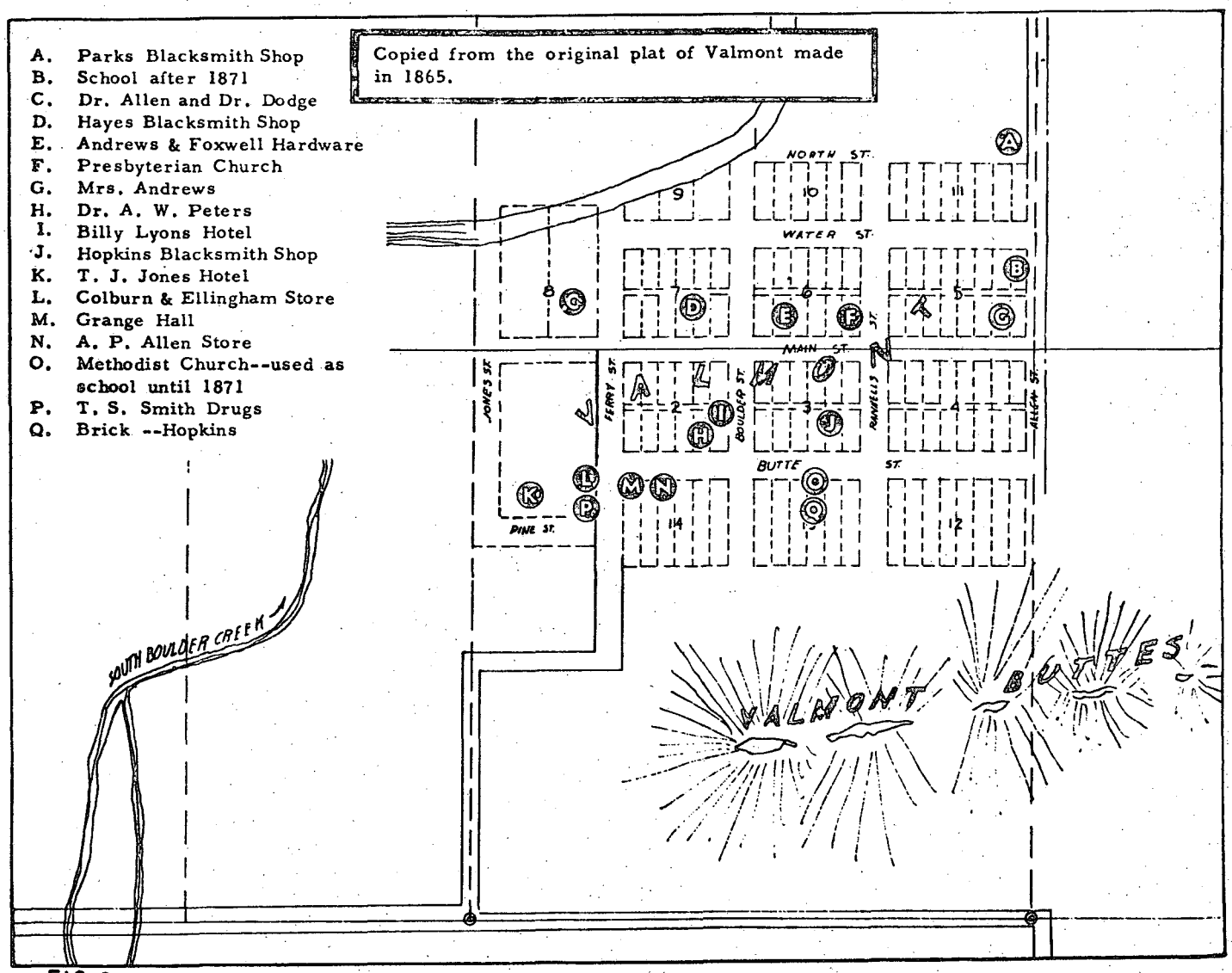

A. Parks Blacksmith Shop
B. School after 1871
C. Dr. Allen and Dr. Dodge
D. Hayes Blacksmith Shop
E. Andrews & Foxwell Hardware
F. Presbyterian Church
G. Mrs. Andrews
H. Dr. A. W. Peters
I. Billy Lyons Hotel
J. Hopkins Blacksmith Shop
K. T. J. Jones Hotel
L. Colburn & Ellingham Store
M. Grange Hall
N. A. P. Allen Store
O. Methodist Church--used as school until 1871
P. T. S. Smith Drugs
Q. Brick --Hopkins
Copied from the original plat of Valmont made in 1865.
NORTH ST.
WATER ST.
MAIN ST.
BUTTE ST.
PINE ST.
JONES ST.
FERRY ST.
BOULDER ST.
PANNELLS ST.
ALLEN ST.
SOUTH BOULDER CREEK
VALMONT BUTTES

FIG. 2

During this period of time the area was experiencing Indian trouble. The Indians, angered by the broken promises of the whites and the continual infringement of their lands, began to raid white settlements. As a result, Fort Chambers, built on the farm of George W. Chambers in 1864 and located a short distance from Valmont, was used by Company D of the Third Colorado Regiment of Volunteers as a training site. Fort Chambers was a sod-brick fortification, measuring 100 by 200 feet, with walls 2 feet thick.

The company, composed of local men from Valmont, Boulder and the surrounding area, later took part in the battles which eliminated the Indian threat once and for all. The most famous, or infamous, battle was fought at Sand Creek, about 30 miles north of Lamar in Kiowa County, and is referred to as the "Sand Creek Massacre." By 1868 the Indian threat was gone in the Valmont area.

By the late 1860s, Valmont had become a rival to nearby Boulder, actually outnumbering Boulder in population for a period of time. The City of Valmont had organized the Valmont Presbyterian Church in the home of Mrs. A. A. Brookfield in 1863 and had built the first church building in 1866. Another church began in Valmont, the Congregational Church, but it later built its facilities in Boulder. In addition, a newspaper known as the Valmont Bulletin had originated. Edited and published by D. G. Scouten and Dr. H. W. Allen, the first issue was dated January 1, 1866.

A colorful story of the demise of this paper is included in some of the historical accounts of the Boulder area (Bixby, 1880). Apparently some of the residents of nearby Boulder resented Valmont having its own newspaper, and so hatched a plan which would alleviate the problem.

On the evening of April 1, 1967 Mr. Scouten was entertained by friends at a local saloon. In the meantime, the hand-operated printing press was hijacked and brought to Boulder to be used by the proposed Boulder Valley News. When Scouten sobered up and realized what had happened, he apparently gave in and took a job with the News. In the meantime, Dr. Allen had been paid a handsome fee ($32) to move his paper to Boulder. Thus, Boulder gained a newspaper overnight.

This incident, and the failure of Valmont to obtain the transfer of the county seat from Boulder, seemed to mark the beginning of a gradual shift of activity away from Valmont toward Boulder. At this time, there were about 300 residents in the immediate vicinity of Valmont.

Although more and more acreage was put into wheat in the 1870s, the yields gradually diminished as soils were depleted. Still the Boulder Valley was known as an important wheat growing area. An early settler by the name of John De Baker built a flour mill at the eastern end of the dike, using water from Boulder Creek as the source of power. According to a newspaper clipping, the mill did a thriving business and sold the flour for a high price (Valmont Material).

Another crop grown because of local demand was barley. The barley was used by the Boulder Brewing Company in the brewing of beer. Cheese

also afforded an industrial base. The first cheese factory in the county was established in Valmont in the spring of 1877. The factory was run by C. W. Hayden, a cheese-maker from Jefferson County, Wisconsin (Bixby, 1880).

The 1870s also brought the railroads into the area. Valmont was chosen for a right-of-way in 1873. The line began operating on April 22, 1873. The Union Pacific Railroad, running through Valmont and on to Boulder, served the functions of shipping beef, flour and wheat in both directions; serving the mining interests to the west; and providing transportation as the demand increased. With the railroad came a post office and a railroad station, both of which remained for a number of years.

Valmont's civic spirit declined as a number of activities shifted toward Boulder. However, newspaper clippings record instances of large Fourth of July celebrations with band concerts, public speakers, dances and all-day picnics (Valmont Material).

In the late 1870s basalt was quarried from the west end of the dike. The basalt was brought down from the top of the dike by means of a conveyor belt attached to a tall wooden tower; it was then cut and shipped by train to Denver. The mill closed in 1901 and was dismantled in 1910 (Schooland, 1967). Later basalt was collected by local people and loaded onto freight cars. The railroads used the rock for their railroad beds that led to the mountain mining communities (see Fig. 12, pp. 38-39).

Another feature which was located in the vicinity of the dike was a gold and silver stamp mill. It was constructed on the south slope of the dike in 1898, and it had a capacity of processing 250 tons of ore per day (Crossen, 1962). The stamp mill was located adjacent to the dike so that the gravity flow of water could be utilized in the processing of the ore. Disposing of the tailings was relatively easy from this location. Finally, a railroad spur was nearby, facilitating shipment of the ores.

In the early 1900s, the area around the dike was used for two other purposes. First, farmers used much of the land for grazing horses, cattle and sheep, while farming much of the remainder. The second use of the area involved the lakes to the south of the dike; Leggett Reservoir, then called Owens Lake, was used for boating and picnicking by the local populace. Cottages were located around one end of the lake. Colorado and Southern trains from Denver and Boulder stopped here regularly, making it a popular resort and recreation area.

Around 1915, gravel was mined from an old stream bed lying on high ground to the south of the dike and soutwest of the Valmont cemetary. The gravel was crushed at the site and carried by wagon to be used for road surfacing. Later, gravel was also mined in the floodplain area north of the dike, where the Sawhill Lakes are presently located. As the use of ready-mix concrete increased, the excavation of gravel also increased. The Flatiron Paving Company estimates that it has taken out approximately two million tons of gravel from this area since 1930.

Another use of the area immediately adjacent to the dike began in 1915 when the Colorado Brick Company purchased the land where the old

basalt quarry had once stood. The bricks were made from the shales lying adjacent to the basalt, and marketed in Boulder, Denver and the surrounding vicinity. Up to 1950, the company used clays taken solely from the dike area. However, now only 20 per cent of their clay is derived from the dike. The brick factory expanded its facilities in 1952. It currently makes about one and one-fourth million bricks per year.

In 1924, the Public Service Company purchased the property around the lakes to the south of the dike and built a power plant. The area was attractive to the company because large amounts of water were needed to cool the generators. In addition, the growth of the area had created a need for a local source of electric power. Coal from nearby coal mines provided the heat from which the electricity is generated.

In 1961, the power plant was increased in size. To provide more water for cooling, Valmont No. 3 Reservoir was created by means of earth-fill dams. Gravel and earth for the dams were taken from the south edge of the dike. The total area of the three lakes is about 518 acres. At present, some of the water is being used for irrigation purposes further east.

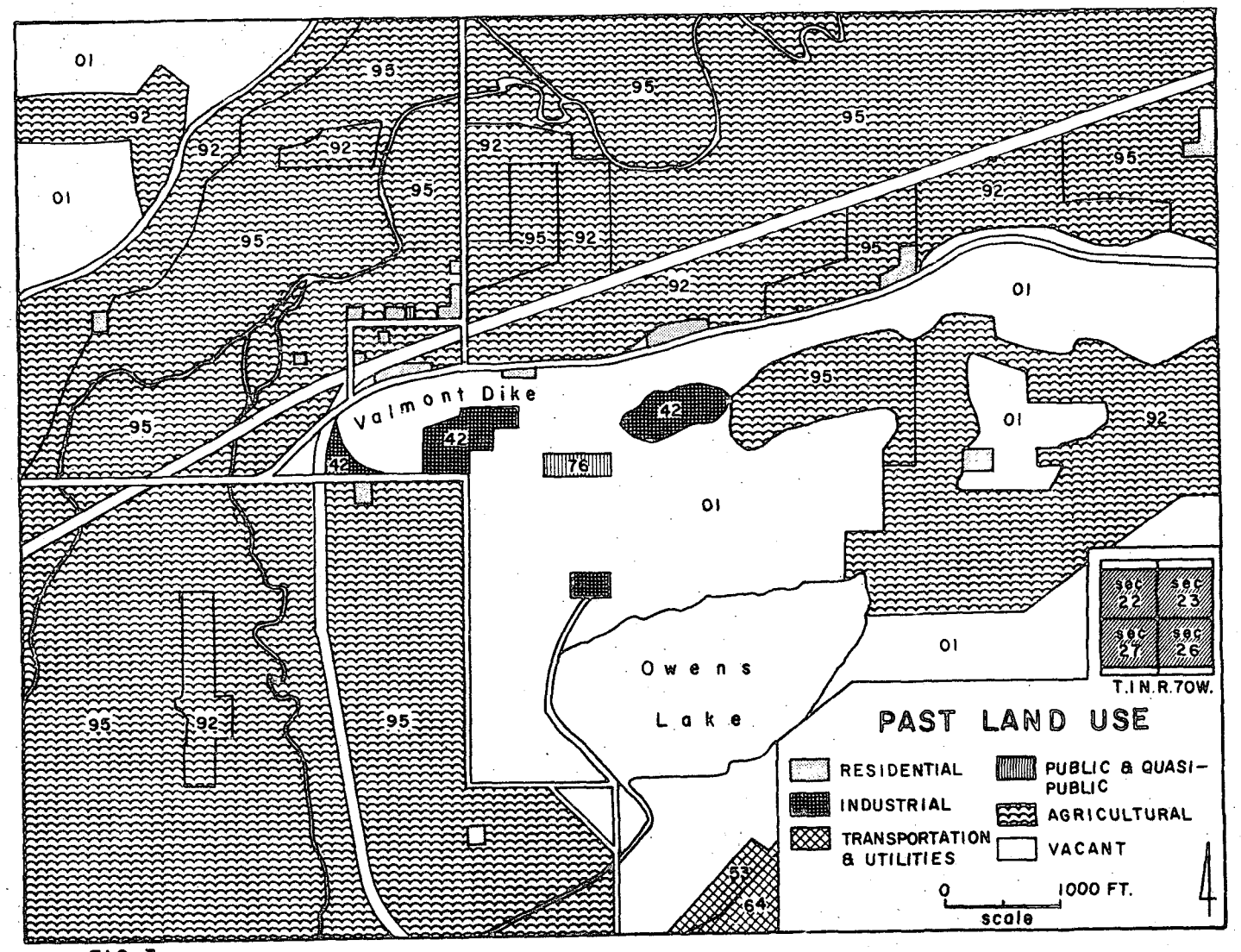
Currently the southern lakes area is being leased by the Colorado Department of Game, Fish and Parks as a geese nesting preserve. No other uses are allowed in the area. In the past, there has been pressure brought to bear on the Public Service Company to allow fishing in their lakes, but the company has thus far refused permission.

Another industrial activity began operation on the southern edge of the dike in 1935. A small gold mill began operating, but lasted only two years before going bankrupt. In 1937, the site was then used as a fluorspar processing mill by two partners from the Boulder area. They, in turn, were bought out by the Allied Chemical Company in 1941, which used the mill to process fluorspar from the Burlington Mine near Jamestown. The mill makes fluorspar into calcium fluoride, and then ships it by rail to the west coast. The mill was located on the edge of the dike because of the advantages of using gravity flow in the processing of the fluorspar, due to the ease is disposing of the tailings, and because of the railroad spur which gave access to shipment of the product. Currently the company produces about 45 to 50 tons of calcium fluoride per day.

A recent use of the area adjacent to the gravel pits on the north has been the removal of topsoil. This has been in response to the rapid expansion of residential areas where poor soils exist. It is estimated that about 200 thousand cubic yards of topsoil have been removed from the area and sold for use in these newly-built residential areas (Larkin, 1968).

The floodplain area to the north and east of the dike, called the Sawhill Lakes, is now being made into a recreation area. The Department of Game, Fish and Parks purchased much of the area in 1966 for hunting and fishing. Some boating, swimming, and camping are also found in the area.

Today, about all that is left of the once thriving community of Valmont is the Valmont Presbyterian Church and 11 residences. Only one road winds through the town and a dirt road connects the north part of the town with a county road. For a number of years the dike has been of interest to geology and geography students, but the town itself has nearly disappeared.


01
92
95
42
76
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64
Valmont Dike
Owens
Lake
sec 22
sec 23
sec 27
sec 26
T.1N.R.70W.
PAST LAND USE
RESIDENTIAL
INDUSTRIAL
TRANSPORTATION & UTILITIES
PUBLIC & QUASI-PUBLIC
AGRICULTURAL
VACANT
0
1000 FT.
scale

FIG. 3

Present Land Use

Today, the Valmont Dike area is one the edge of the rapidly growing city of Boulder. Because of Boulder's rapid population growth, the historical site of Valmont is slowly disappearing as residential and industrial encroachment occurs.

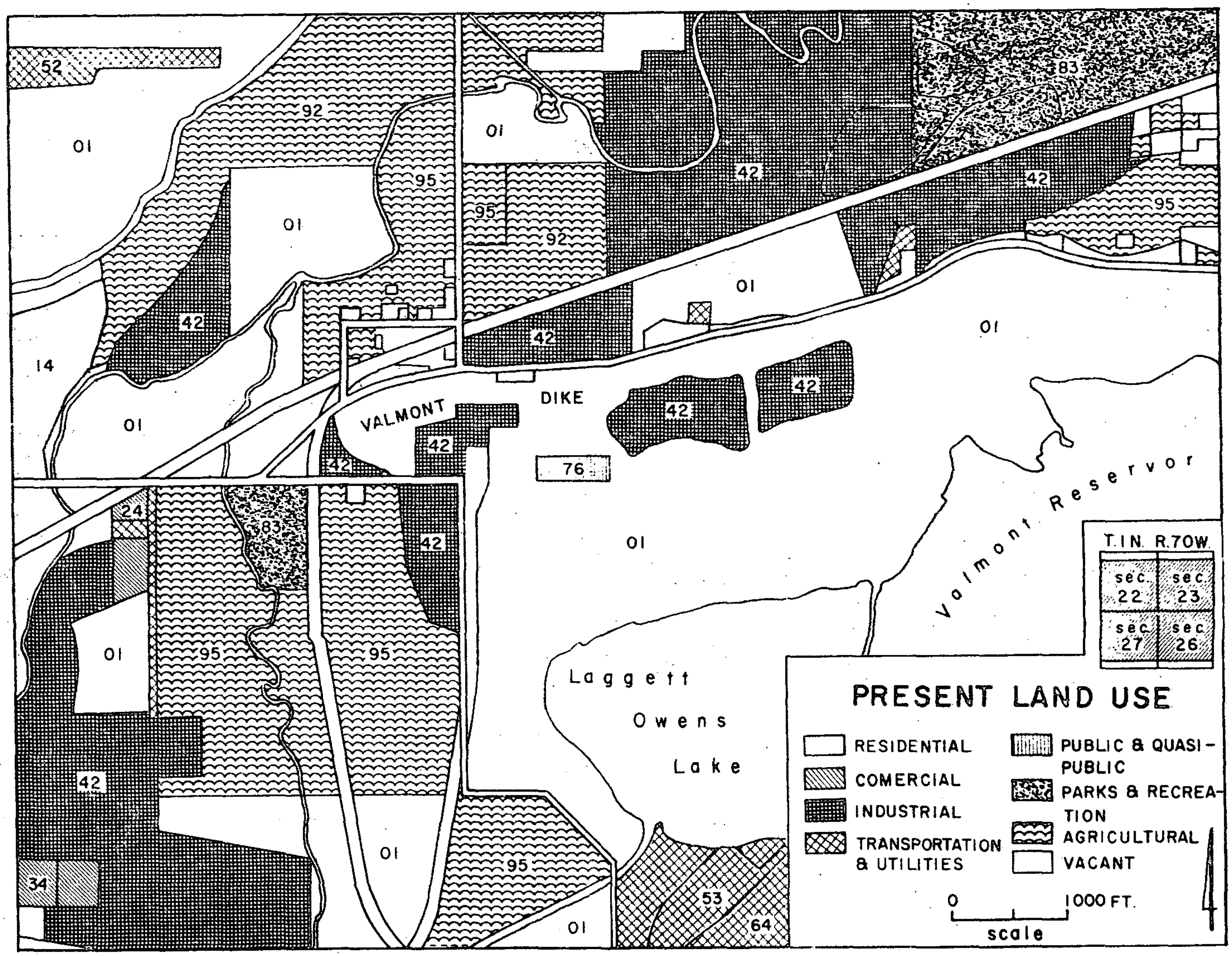
Present land use revolves mainly around nine categories (See Table 1.). The only areas of Residential land use are found along the north side of Valmont Road. A trailer court is located in the San Largo area, covering about 32 acres; there are approximately 209 trailers housing about 1,300 people.

TABLE 1. INDEX TO LAND USE CLASSIFICATION CATEGORIES

Category	Numerical Code*
Residential	1
Single Family Dwelling	11
Mobile Home Dwelling	14
Commercial	2
Retail Business	22
Professional Services	34
Industrial	4
Primary Manufacturing	42
Utilities	6
Electricity and Gas	64
Public and Quasi-Public	7
Cemetary	76
Church	73
Parks and Recreation	8
Open space park and recreation areas	83
Agricultural	9
Crop production	92
Pasture, grazing land	95
Vacant	0
River bottom land	01
Water area	03

* Numerical code of Denver Regional Council of Governments

Source: Inter-County Regional Planning Commission, 1966.



PRESENT LAND USE
RESIDENTIAL
COMERCIAL
INDUSTRIAL
TRANSPORTATION & UTILITIES
PUBLIC & QUASI-PUBLIC
PARKS & RECREATION
AGRICULTURAL
VACANT
0
1000 FT.
scale
T.1N. R.70W.
sec. 22
sec 23
sec. 27
sec 26
VALMONT DIKE
Valmont Reservor
Laggett Owens Lake
52
01
92
95
42
14
83
76
24
34
53
64

FIG. 4

Further east is the area which originally served as the center of the town of Valmont. This area occupies about 20 acres and now has 11 residences. The remaining homes in the area are individual dwellings located along the road further east.

A second category of land use is classified Commercial. This land category is confined to two small locations on the south side of Valmont Road where the railroad track crosses from the south to the north side. This area, along 55th Avenue, includes a nonprofit business that hires handicapped people and a company which makes camping and outdoor equipment.

A third category is Professional Services. This category includes the Laboratory of Astrophysics and Space which is part of the University of Colorado. This facility is located on 55th Avenue next to the Flatiron Sand and Gravel Company.

Industrial land use is found in a number of locations surrounding the dike. On the west side, the Flatiron Sand and Gravel Company occupies over 150 acres which are used for mining gravel. In conjunction with the gravel mining operation, the company also manufactures pre-stressed concrete materials. Actually the Flatiron Company is four companies in one. Included are the Flatiron Sand and Gravel Company, the Flatiron Pre-Mix Concrete Company, the Flatiron Paving Company, and the Flatiron Service Company. This company owns over 40 acres of river bottom on the north side of Valmont Road next to the trailer court, which is also used for gravel mining. A third area, used by the Flatiron Paving Company, is found further east in the Sawhill Lakes area. The gravel in this 80-acre site is used for making asphalt.

A second sand and gravel company, the McStain Corporation, has over 30 acres between Valmont and Jay Roads near 63rd Avenue.

The Colorado Brick Company is located at 60th and Valmont Road at the base of the western face of the dike. This company also occupies 15 acres along the Sioss railroad spur.

The Industrial Chemicals Division of the Allied Chemical Corporation, previously referred to as the fluorspar mill, is located along the south face of the dike. Although the mill itself only occupies about 13 acres of land, the company also owns 79 acres to the east, along the south of the dike, which is used for tailings disposal.

The most extensive land use category in the area is Utilities. Only one other company is included in this category besides the Public Service Company of Colorado. A small propane gas facility is located near the corner of Valmont Road and 55th Avenue, occupying one acre.

The Public Service Company is the single largest land holder in the area, owning over 1,000 acres. Their property includes Leggett Reservoir, Hillcrest Reservoir, Valmont No. 3 Reservoir, as well as the 40 acres which include the generating plant, related buildings and railroad spurs.

The category of Public and Quasi-Public land use is represented by only two small areas. These are the Valmont Cemetery on the south side of the dike near the fluorspar mill, and the church in the Town of Valmont.

The remaining three categories of land use include Parks and Recreation, Agriculture, and Vacant Land. The parks and recreation land is primarily in the Sawhill Lakes area which was recently purchased by the Colorado Department of Game, Fish and Parks.

Agriculture land is divided into three groups: land used for dry farming (usually wheat), irrigated pasture (predominantly alfalfa), and unimproved pasture. The low lying areas are often left to pasture, whereas the terraces at the edge of the floodplain are more suitable for irrigation or dry farming.

Vacant land is found along the floodplain in the river bottom lands. This land is used in summer for grazing, but the carrying capacity is quite low. Vacant land is also found along the periphery of the Public Service Company's holdings. This land has been grazed in the past. In fact, much yucca and cactus are found here, indicating over-grazing was the general rule.

Future Land Use

The estimates of future land use in the Valmont Dike natural area are based primarily on information included in "A Plan for the Boulder Valley" (Porreca, 1969). This report, created by the coordinated efforts of the City and County of Boulder, is the basis for planning for future development in Boulder Valley. It anticipates rates of population growth, community needs, residential densities, commercial and industrial growth, and open space requirements.

Four major categories of land use are anticipated in the Valmont area. By far the largest use will be that of parks, recreation and open space. The County hopes to include all of the area north of Valmont Road in this category except for the small residential section in the Town of Valmont. In addition, all of the area surrounding the three Public Service Company lakes is included as potential parks and recreation lands. Finally, the river bottom area of South Boulder Creek is to be zoned in this category of land use.

Only two other land use categories are projected for the area. The land now occupied by the Colorado Brick Company, fluorspar mill and the land adjacent to 60th Avenue is indicated to continue to have heavy industrial usages. This classification also extends to the land west of 55th Avenue and south of Valmont Road, except for the land directly within the South Boulder Creek floodplain. Apparently the County hopes that the Public Service Company will make some arrangements whereby land in the vicinity of the lakes will be open to recreational use.

County officials admit candidly that plans to acquire some of the area which is projected to be parks and open space is more wishful than realistic. However, the County intends to establish zoning restrictions which will hopefully eliminate development of any kind along the floodplain of Boulder Creek.

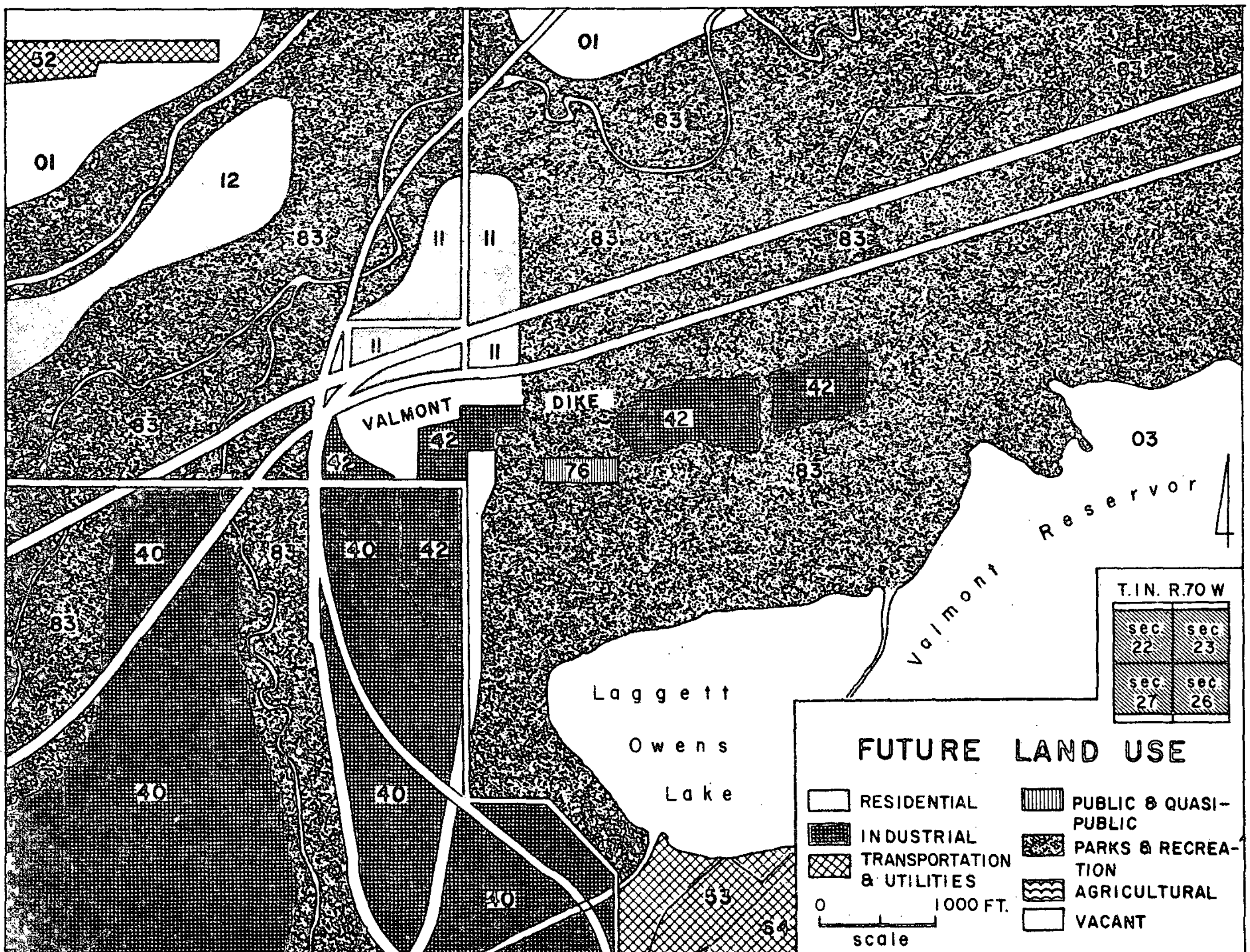

52
01
12
83
11
01
83
83
83
83
83
11
11
VALMONT
DIKE
42
42
42
42
76
83
03
Valmont Reservor
40
83
40
42
83
T.I N. R.70 W
sec. 22
sec. 23
sec. 27
sec. 26
Laggett Owens Lake
40
40
40
53
54
FUTURE LAND USE
RESIDENTIAL
INDUSTRIAL
TRANSPORTATION & UTILITIES
PUBLIC & QUASI-PUBLIC
PARKS & RECREATION
AGRICULTURAL
VACANT
0 1000 FT.
scale

FIG. 5

Current industrial usages are expected to remain, but not expand, except between 61st Avenue and South Boulder Creek, and west of the creek along Valmont Road. In general, future changes are expected to reflect a gradual decline in gravel mining north of Valmont Road, and a slow disappearance of agricultural land use in the vicinity of South Boulder Creek. Hopefully, such changes will be accompanied by a shift in the Public Service Company's land use policy which will allow easier access to the lakes and vacant land on their property.

Summary

The historical evolution of land use in the vicinity of Valmont Dike has resulted in the area undergoing a continual transition. The area has experienced a number of changes in the past 110 years. Starting in 1860, the land was first farmed and homesteaded. Later, residential and community growth occurred bringing with it the railroad and some commercial development. Mining and quarrying followed accompanied by a rapid decline in the community's growth as the city of Boulder steadily consolidated and expanded its position as the main service center for the surrounding area.

In the 1900s some suburban growth occurred at the periphery of the City of Boulder, with accompanying development of heavy and light industry. Extensive modification of the terrain was brought about by the Public Service Company's construction of a lake, and the mining of gravel along the floodplain of the nearby creeks.

Recently the County has begun to project much of the area as future parks, recreation and open space land. This has been partially accompanied by the land purchases of the Colorado Department of Game, Fish and Parks.

Valmont Dike and its environs have a rich historical background. When this background is combined with the natural attractiveness of the area, and its proximity to the rapidly growing city of Boulder, the idea of transforming this site into a natural area becomes justified.

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CHAPTER 4. CADASTRAL AND LAND TENURE SURVEY

John L. Harper, James Biggins, and Wil. Ulman

The cadastral and land tenure patterns for the Valmont Dike area have not changed to any discernible degree in the past 20 years (Compare Figures 6 and 7). This is due primarily to the continued occupance of the area by the two major land owners, The Public Service Company of Colorado and the Allied Chemical Company. In fact, the present title pattern was essentially established prior to World War II (See Table 2.)

For the most part, holdings are owner-operated. Only two leases contradict this overall pattern. A one-half acre plot (Parcel 68876) is leased from Mrs. Joy E. Keeter by Mr. C. R. Morrison, and Mr. George Gapter leases 20 acres in the NW¼ of the NE¼ of Section 27 from the Public Service Company of Colorado.

TABLE 2. FILING DATES OF THE MAJOR LAND OWNERS

Description	Grantee	Filing Date
Tract 10009-A	Allied Chemical Company	11-17-41
Parcel 391520	Allied Chemical Company	11-17-41
NW¼SW¼, 5.14 ac.	George L. Sawhill	4-4-36
Tract 3760 and Parcel 688876	J. E. Keeter	2-16-61
Parcel 65412	Harold H. Short and James G. Milne	11-1-61
Parcel 213455	Public Service Company	10-9-23
Parcel 217009	Public Service Company	4-23-25
73.5 ac N of C&S Railroad in Sec. 26	Public Service Company	10-9-23
Tract 2175	Colorado Brick Company	3-4-55

The community of Valmont has remained virtually unchanged in areal extent since the late nineteenth century. In view of this, it was decided that the community be treated as a single entity although it is actually comprised of numerous individual residences.

In summary, the overwhelming impression created by this analysis of Valmont Dike and environs is one of ownership stability throughout the

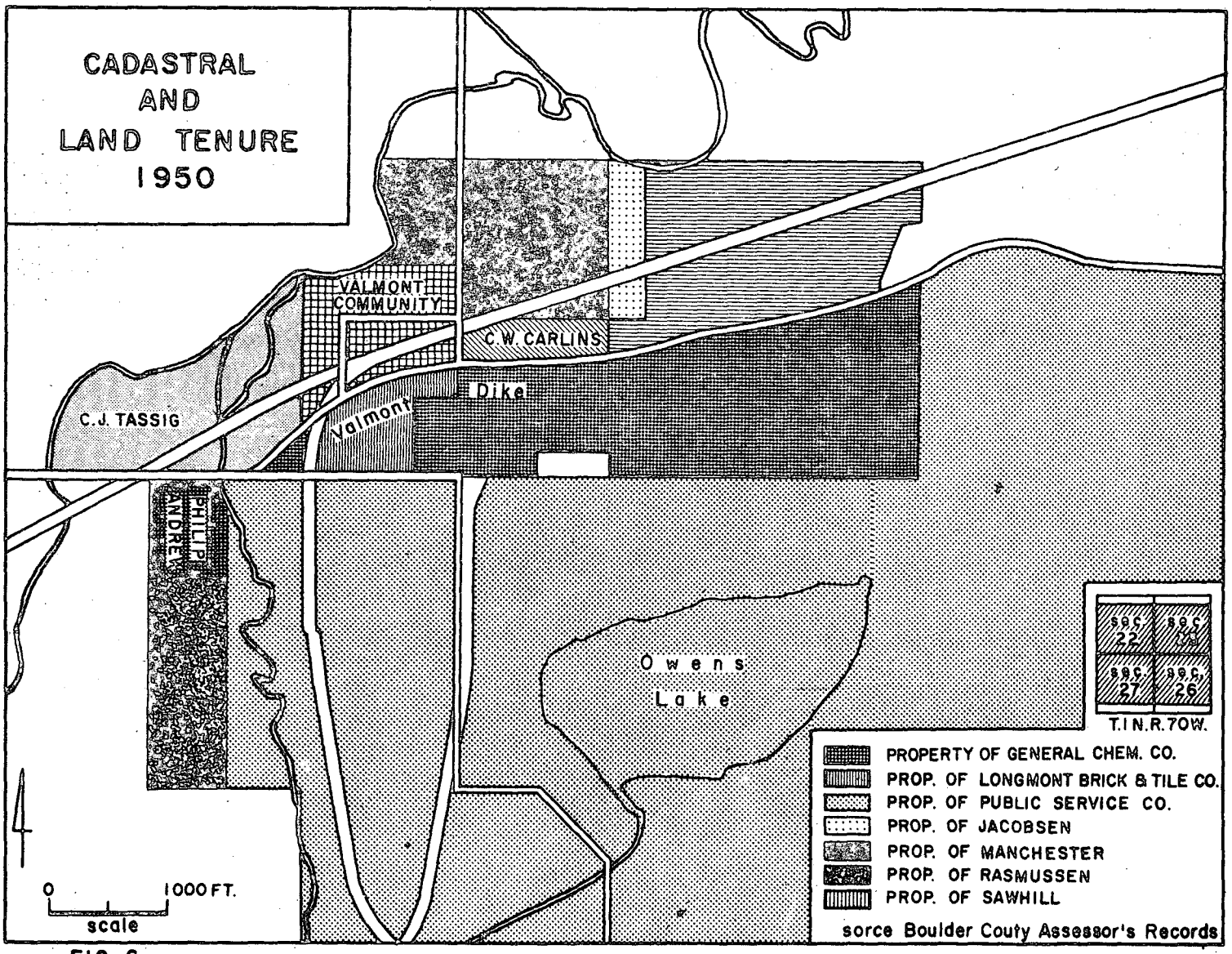
CADASTRAL
AND
LAND TENURE
1950
VALMONT
COMMUNITY
C.W. CARLINS
Dike
Valmont
C.J. TASSIG
PHILIP
ANDREW
Owens
Lake
S.P.C.
22
S.P.C.
27
S.P.C.
26
T.1N.R.70W.
PROPERTY OF GENERAL CHEM. CO.
PROP. OF LONGMONT BRICK & TILE CO.
PROP. OF PUBLIC SERVICE CO.
PROP. OF JACOBSEN
PROP. OF MANCHESTER
PROP. OF RASMUSSEN
PROP. OF SAWHILL
sorce Boulder Couty Assessor's Records
0
1000 FT.
scale

FIG. 6

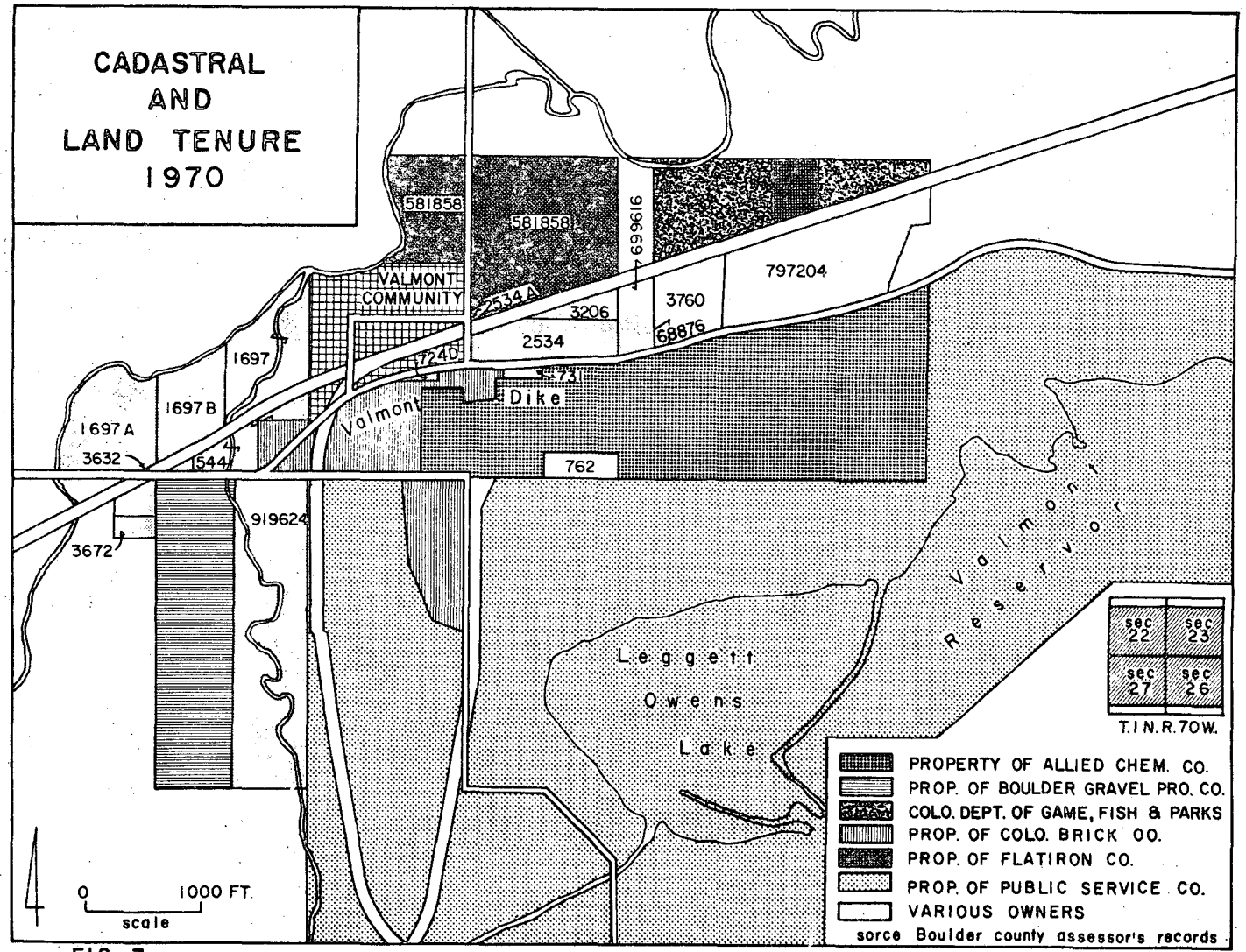
CADASTRAL
AND
LAND TENURE
1970
581858
581858
919699
797204
VALMONT
COMMUNITY
2534A
3206
3760
68876
2534
1697
724D
1697B
1697A
3632
1544
Valmont
Dike
762
919624
3672
Leggett
Owens
Lake
Valmont
Reservoir
sec 22
sec 23
sec 27
sec 26
T.1N.R.70W.
0
1000 FT.
scale
PROPERTY OF ALLIED CHEM. CO.
PROP. OF BOULDER GRAVEL PRO. CO.
COLO. DEPT. OF GAME, FISH & PARKS
PROP. OF COLO. BRICK CO.
PROP. OF FLATIRON CO.
PROP. OF PUBLIC SERVICE CO.
VARIOUS OWNERS
sorce Boulder county assessor's records

FIG. 7

great preponderance of acreage involved, most of it industrial property. A glance at the "Boulder Valley Comprehensive Plan" reveals that this pattern is projected to continue for at least another 20 years. It appears from this, therefore, that attempts to purchase land in the vicinity of the dike itself for other than industrial purposes (e.g., creating a natural area site) would probably be unsuccessful. This does not, however, preclude the possibility that the University of Colorado and/or other interested institutions may be able to arrange permanent access to the area for academic purposes. Arrangements should at least be made for the preservation of the biological and geological features in and around the dike.

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CHAPTER 5. LAND ECONOMICS

Max H. Dodson, Robert E. Key and Dean G. Wilder

Methodology

The methodology involved in conducting this land economic study of the Valmont area was twofold. First, a study was conducted on the past and present assessed land values utilizing records available at the County Assessor's Office, Boulder, Colorado. In the appropriate land books were located the legal descriptions, assessed land values, and taxes on those particular properties encompassing the Valmont area.

The assessed value as entered in the land books is 30 per cent of the appraised values. By multiplying the assessed value by the proper mill levy, a tax was derived. Table 3 was compiled showing property description, acreage, assessed land value per acre, and appraised value per acre. The appraisal value per acre is cartographically portrayed in Figure 8 of this study.

Past land values were more difficult to compile, and so for simplicity, only selected tracts or parcels of land were chosen to show the annual per cent increase in assessed land values from 1960 to 1970 as shown in Table 4.

The second part of the study pertained to present fair market values in the area. Fair market value according to Mr. Jack K. Basart, Boulder Real Estate Appraiser, is defined as "the highest price estimated in terms of money which a property will bring if exposed in the open market for a reasonable length of time, allowing a knowledgeable buyer and seller to agree." To obtain a complete fair market value for the entire study area was not possible, but by utilizing Mr. Basart's appraisal report of January 10, 1969 on two tracts of land located in Section 28, T 1 N, R 70 W, and a telephone interview with Mr. Eldin Baird of Baird Realty in Boulder, comparable or correlative estimates could be made on property within the Valmont study area.

Review of Information

In reviewing the statistical information in Table 3, Figure 8 and the Cadastral and Land Tenure Survey some prominant characteristics were observed. It can be seen that the higher land values were associated with the smaller parcels of land. Also, location and desirability seemed to significantly affect land values. The majority of the high priced land was observed to be adjacent to transportation facilities. Functional use also seemed to determine land values. For example, the highest single land value in the area was occupied by a residence (Parcel 688876).

TABLE 3. LAND ECONOMICS

Description	Acreage	Assessed Value/Acre	Appraised Value/Acre
SECTION 22			
Tract 723	3.00	$ 73.33	$ 241.99
724-D	1.00	660.00	2,178.00
731	2.00	330.00	1,089.00
1009	19.00	91.58	302.21
1009-A	9.00	120.00	396.00
1544	8.00	375.00	1,237.50
1544-A 3990	1.60	643.75	2,124.38
1697	22.00	181.82	600.00
1697-A	22.00	181.82	600.00
1697-B	8.00	120.00	396.00
2534	9.75	83.08	274.16
2534-A	0.10	200.00	660.00
3208	4.00	137.50	453.75
Parcel 391520	19.00	175.79	580.11
581858	49.00	22.45	74.09
SECTION 23			
Tract 3760	8.00	135.00	445.50
Parcel 213455	15.00	*	
240716	100.00	*	
217099	19.00	*	
391520	79.00	20.89	68.94
655412	3.60	138.89	458.34
688876	0.50	1,320.00	4,356.00
699616	11.00	163.64	540.01
797204	31.00	111.81	368.97
799153-5 799193-5	36.85	No Tax	
SECTION 26	313.00	*	
SECTION 27			
Tract 2175	12.00	600.00	1,980.00
3632	1.00	1,200.00	3,960.00
3672	1.00	1,200.00	3,960.00
Parcel 703457	20.00	300.00	990.00
794740	7.55	298.01	983.43
919624	10.00	750.00	2,475.00

* Colorado State Tax Commission; taxed as a statewide unit (Public Service Company of Colorado).

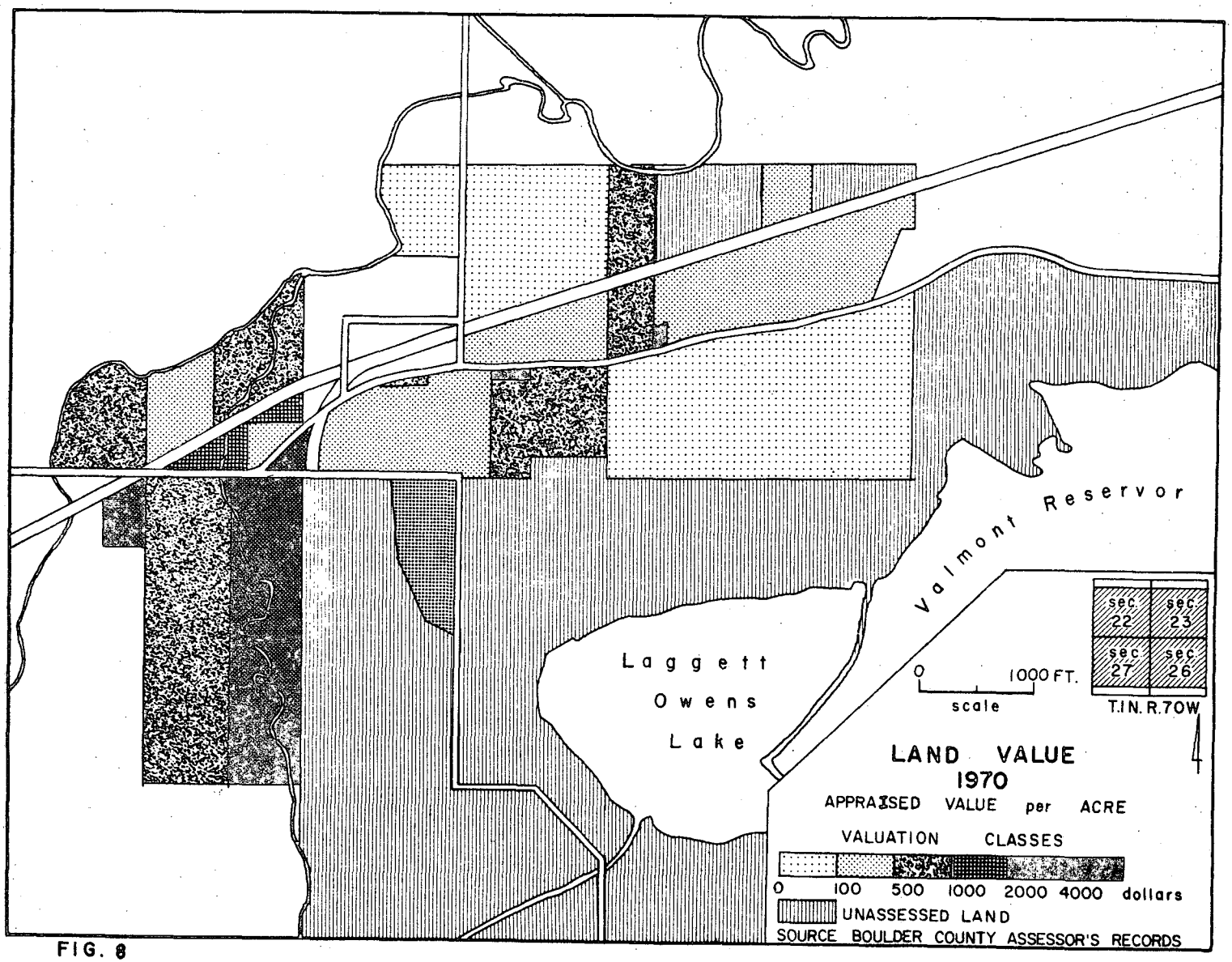
Valmont Reservor
Laggett
Owens
Lake
sec. 22
sec. 23
sec. 27
sec. 26
0
1000 FT.
scale
T.1N. R.70W
LAND VALUE
1970
APPRAISED VALUE per ACRE
VALUATION CLASSES
0 100 500 1000 2000 4000 dollars
UNASSESSED LAND
SOURCE BOULDER COUNTY ASSESSOR'S RECORDS

FIG. 8

TABLE 4. 1960-70 LAND VALUES OF SELECTED PROPERTIES

Description	Acreage	1960 Assessed Value	1970 Assessed Value	Percent Annual Increase
Parcel 655412	3.60	$ 400.00	$ 500.00	2.5%
Tract 2175	12.08	1,600.00	7,200.00	45.0
Tract 1544	8.00	1,100.00	3,000.00	27.3
Parcel 703457	20.00	1,570.00	6,000.00	38.1

The lowest land values were occupied by tailing ponds (Parcel 391520) and an unoccupied property (Parcel 581858).

Fair Market Value

Comparison with other properties of known or recognized value is an effective way of arriving at fair market values. When allowing for suitability, size, location, access, utilities, and other factors, a general estimate of land values could be made for properties within the study area.

An appraisal made by Mr. Basart (Basart, 1970) for the City of Boulder showed what land is worth in East Boulder. A sales chart on properties located within or closer than 2 miles of the Valmont Butte area inciated that acre costs ranged from $2,700 to $11,000. These properties portrayed the same characteristics as did the properties in the study area. Smaller parcels of land were the most expensive, and location and functional use apparently influenced or determined the wide range of property values.

Mr. Eldin Baird stated that land in and around Valmont sells from $2,000 to $6,000 per acre depending upon land characteristics. The City recognized industry as being the best use of the area. This is evidenced by the industrial zoning of a great part of eastern Boulder.

Future Land Values

Future land values, if they follow the trends shown in Table 4, would spiral unbelievably in the coming years. Further improvements in utilities and transportation is projected for the area. This undoubtedly would affect future land values. On the other hand, if an economic leveling off period or stabilization of growth in the near future occurs, land values could conceivably stabilize to some degree.

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CHAPTER 6. CONCLUSION

Michael R. Tripp, William G. Callahan, and Manik Hwang

The preceding chapters present a picture of the Valmont Dike natural area through both geologic and historical time. They emphasize the educational value of the area's unique environmental characteristics, and suggest, through ownership patterns and economic trends, what directions man's use of the area may take in the future.

That Valmont Dike and its immediate environs represent a natural area study site of great value is readily agreed upon. Individual researchers, as well as groups of students from several University departments, have regularly used it for educational purposes. Geologists rightly emphasize the Dike's uniqueness as a Tertiary igneous intrusive thrust into sedimentary rock. This uniqueness is enhanced by a conveniently exposed cross section revealing the structure and components located on the west face of the Dike at the site of the old cobblestone quarry. Biologists are interested in the several closely-spaced vegetation zones differentiated by exposure and elevation. Geographers, in addition to the study of the Dike's geomorphic attributes, are able to employ its crest as an elevated observation post from which to view the panoramic transition zone of plains, foothills, and mountains with their varied and changing land use patterns.

Any consideration of how such attributes might be protected and maintained must be concerned with the possible alternate uses to which this site and its environs might be put. Instrumental in determining such alternatives are the attitudes and plans of landowners, business operators, local governments, and other interested organizations such as the University of Colorado and the Boulder Valley RE-2 School District.

From an educational standpoint, out-right purchase of the site by the University or the Boulder School District would seem to best insure its control and use as an educational resource, and educators such as Ralph E. Bachus, Boulder Public School Science Director, would strongly endorse such a move (Bachus, 1970). However, the several industrial concerns who own much of the land in the area, including the site of the Dike itself, have no intention of selling their land and indeed, expect to continue their operations indefinitely (Public Service Company, et al, 1970).

The possibility of private land dedications must not be overlooked, but acquisition by the City of Boulder of certain land parcels through easements granted by owners in return for other considerations seems more realistic. In fact, Boulder's Greenbelt plan includes all of the land in the study area. However, according to Robert E. Key, Director of Parks and Recreation for the City of Boulder, acquisition of this land presently

has low priority, but until such time as the land may be acquired under the Greenbelt plan, concerned city and county agencies will watch closely any land use changes or developments through zoning and building regulations (Key, 1970).

On August 4, 1970, Boulder voters will be presented with Ordinance No. 3525 which provides for public recreational and open-space use of the Public Service Company of Colorado's land and water facilities lying within the presently designated Greenbelt areas "to the extent that such use does not interfere with the company's use of such lands and water facilities" (City..., 1970). Lloyd Harrell, Assistant to the City Manager of Boulder, adds that this franchise proposal, involving a year of negotiations between city government officials and representatives from the Public Service Company, provides for an exclusive 20-year franchise whereby the Company will furnish natural gas and electricity to the City of Boulder (Harrell, 1970). Obviously, such an agreement would go far in shifting the use of the land and lakes immediately south of Valmont Dike toward recreational use, thereby enhancing the possibility that the Dike itself would eventually be reserved as an integral part of Boulder's Greenbelt program.

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Key, Robert E. 1970. Director of Parks and Recreation, City of Boulder, Colorado. Personal interview, (May).

Representatives of Public Service Company of Colorado, Flatiron Companies, and the Colorado Brick Company, all of Boulder, Colorado. 1970. Personal interviews, (March).

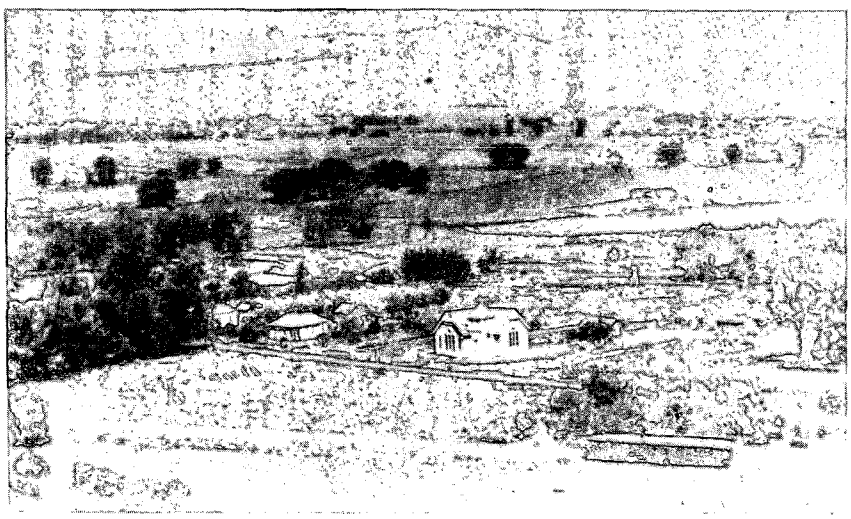
APPENDIX A - PHOTOGRAPHS

Figure 9. Valmont School, one of the last remaining buildings of the Town of Valmont, now serving as a private residence.

Figure 10. The Town of Valmont with the Valmont Presbyterian Church pictured in the center, 1914. (Courtesy of John Schooland)

Figure 11. The same scene as that depicted in the photograph above, but 52 years later. Notice the small amount of change which has occurred. (Courtesy of John Schooland)


VALLEDIT SCHOOL
DIST. No.



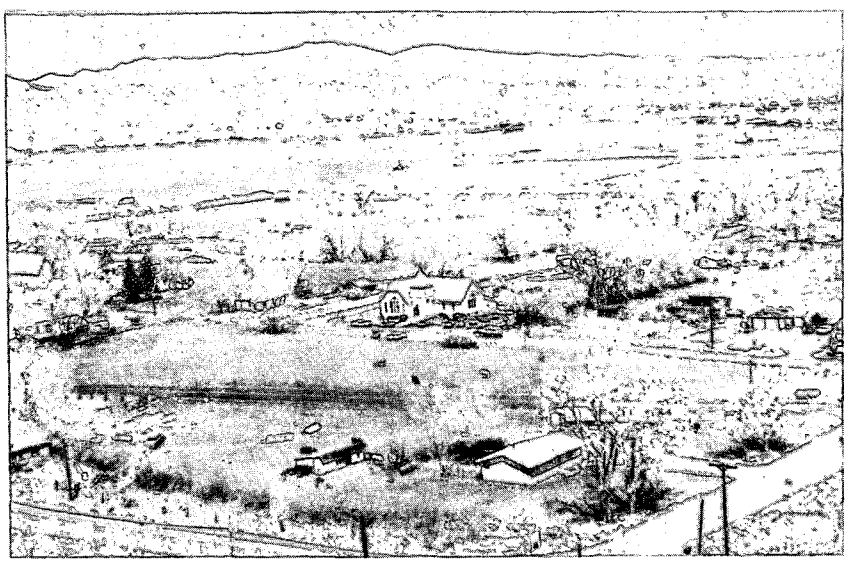
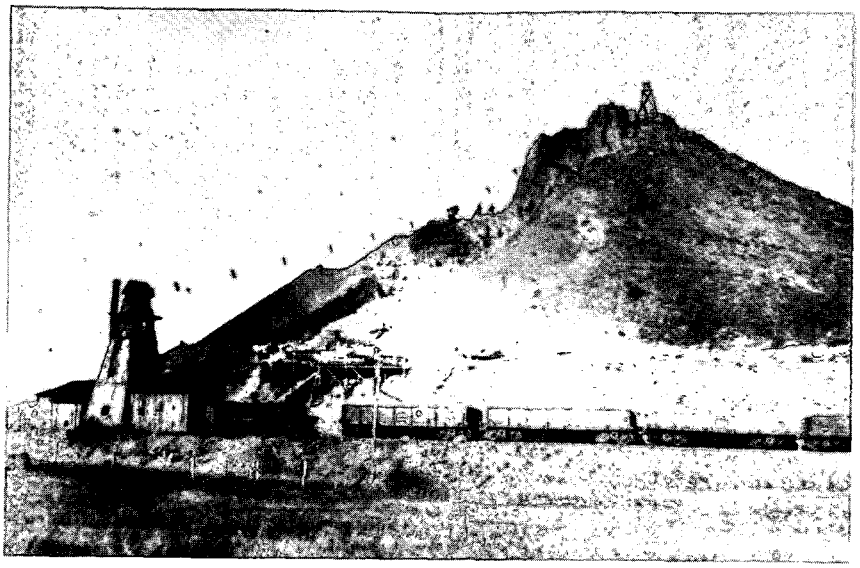
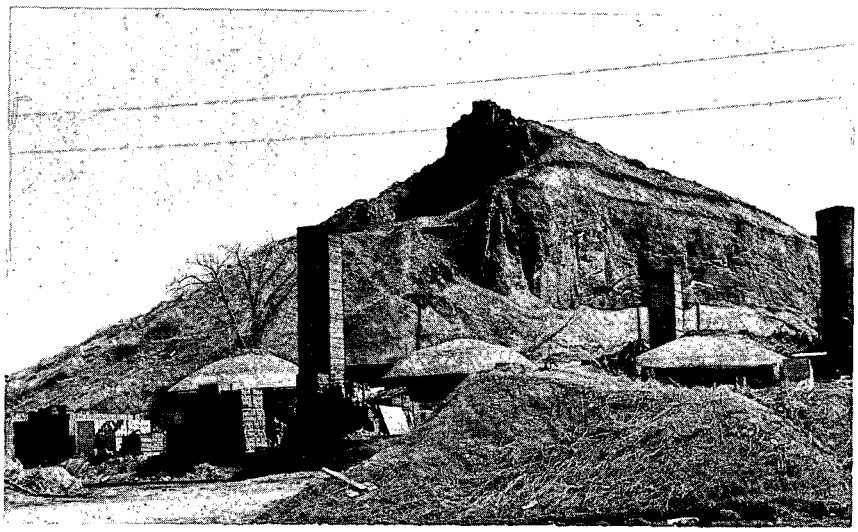


Figure 12. A view of the west end of Valmont Dike in the 1870s. The quarrying of basalt for paving stone was then underway. (Courtesy of John Schooland)

Figure 13. A current view of the Dike at the western terminus. The oldest kilns of the Colorado Brick Company are in the foreground. (Photo by Donald MacPhail)

Figure 14. The Valmont Plant, a thermoelectric facility of the Public Service Company, on the shore of Leggett Reservoir.





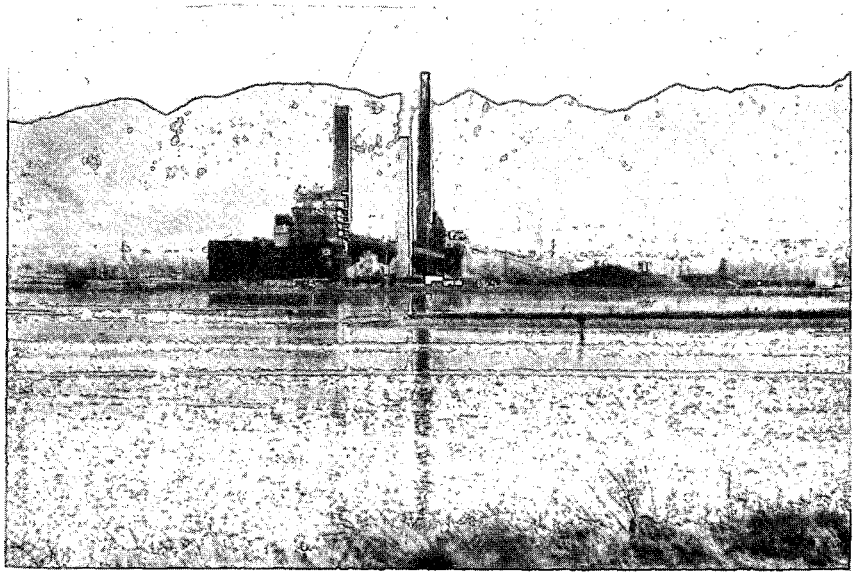


Figure 15. Aerial view of Valmont Dike looking east, September 10, 1957. The kilns of the Colorado Brick Company are located at the site of the old plant (lower left) near the abandoned rock quarry on the basalt dike. Other kilns, in the upper right, were constructed in 1955. The fluorspar mill of Allied Chemical, which processes ore from the Jamestown mine, appears in the upper center of the photo, along the south flank of the dike. In the lower right is the old Copeland farm, operated in 1957 by George Gapter. The line of trees along the upper edge of the photo mark the boundary of the old Valmont cemetery. A part of the South Boulder Creek floodplain appears along the lower margin. Part of the floodplain of Boulder Creek is seen in the upper left corner of the air photo. (Photo courtesy of the Boulder Daily Camera)

Figure 16. Aerial view of Valmont Dike as it appeared on September 6, 1969. One new kiln has been added in each of the two areas operated by the Colorado Brick Company. Note the new excavation along the south (right) flank of Valmont Dike. In the upper right, the new brick production plant appears. The kilns are now virtually unused. An ore-loading ramp has since been installed by the fluorspar mill in the upper center part of the photo, across the road from the new brick plant. Some new buildings can be observed at the fluorspar mill and also the farm. In the foreground, the recently developed, commerical KOA (Kampgrounds of America) camping facility now appears. (Photo by Roberts Commercial Photo; courtesy of the First National Bank in Boulder)

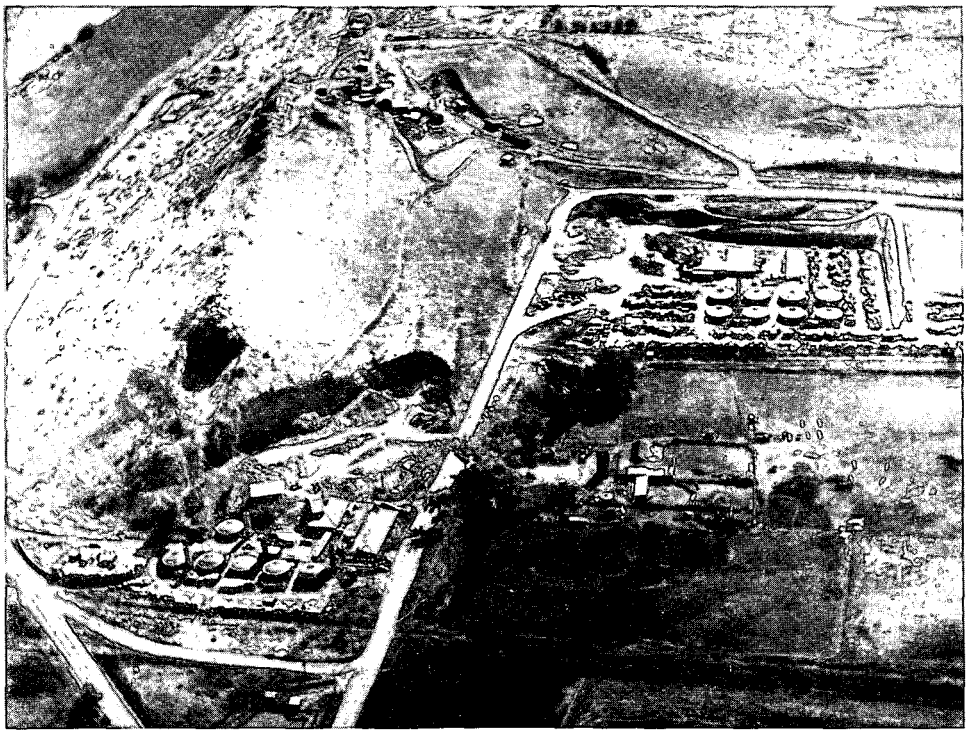


Figure 15

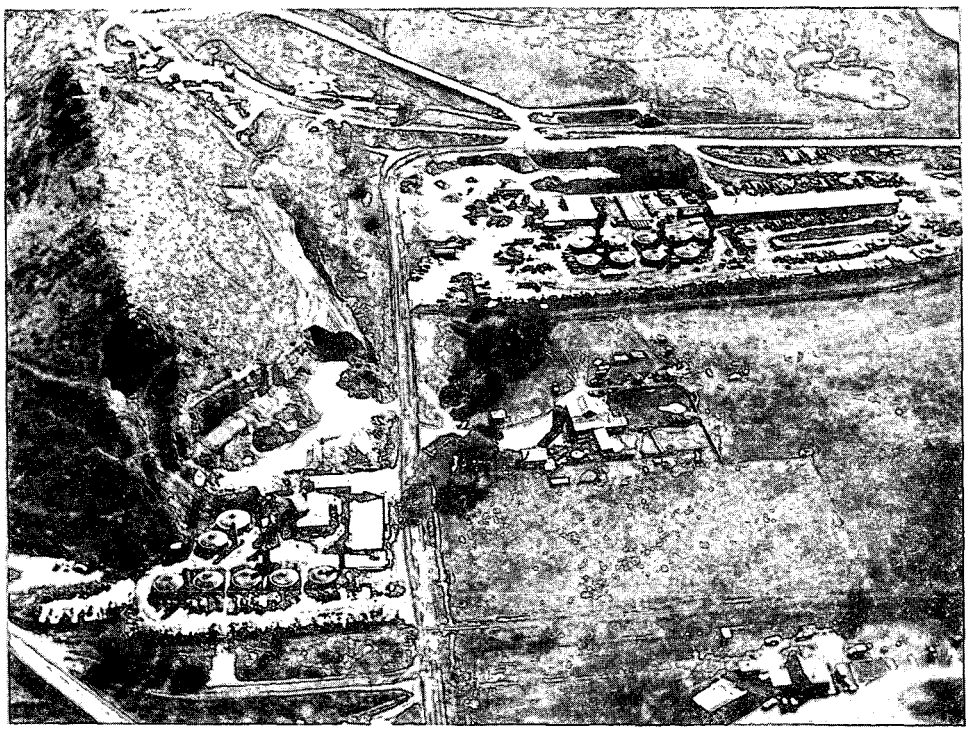


Figure 16