DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS INVESTIGATIONS SERIES
GREATER DENVER AREA, COLORADO
MAP I–856–E

LAND-USE MAPPING OF THE FRONT RANGE URBAN CORRIDOR

The Greater Denver area, in the Front Range Urban Corridor of Colorado, is an area of rapid population growth and expanding land development. At present no overall land-use policy exists for this area, although many individuals and groups are concerned about environmental, economic, and social stresses caused by population pressures. A well-structured land-use policy for the entire Front Range Urban Corridor, in which compatible land uses are taken into account, could lead to overall improvements in land values. A land classification map is the first step toward implementing such a policy.

Planning rational land use. – The use and value of any parcel of land are affected by the uses of all neighboring parcels. For example, a high-value residential area would be devalued if a rendering plant or freeway were to be built nearby. Three steps can be taken to plan for rational land use: (1), Determine present land use in order to inventory the environments of the area, learn what uses are compatible, and roughly assess the value of the land. (2), Determine the limitations and potentials of the land so that harmonious uses can be planned. (3), Predict probable future land use, based on the known limitations and potentials of the land.

Using this map. – This map provides a comprehensive picture of the distribution of different land classes in the Greater Denver area and an implication about the proportions of various uses. Combined with maps showing geology, resources, soil types, water availability, topography, demography, and other attributes, this map can help set limitations on use of the land. Once the limitations are known, zoning can help assure land uses that are compatible with one another and with the natural environment –for example, the zoning of the flood plains for greenbelts, recreation, agriculture, or other compatible uses.

Land classification data are presented here at two levels in two forms, by color and by letter symbol. Color shows six major categories of general land use; letter symbols show subcategories within the major categories. Thus, an area with a red tint is urban land (first level), and the letter symbol Ur within the red tint indicates residential use (second level). Color enhances readability and provides a general perspective of the entire region, while the symbols yield more detailed information. Transportation and utility corridors are shown by standard map symbols.

Levels of land classification. – Land classification maps tend to be oriented toward user needs. Maps can portray man's activities on the land, such as hunting and camping in a forested area, or they can portray land cover, such as vegetation and artificial constructions on the land's surface. Some activities are related to the type of land cover–agriculture and industry, for example–and can be inferred from photographic imagery. Other activities, such as recreation, can be inferred from land cover only with difficulty. "Land cover is therefore the basis for categorization at the first and second level, and the activities dimension of land use will appear at the third and fourth levels of categorization" (Anderson, Hardy, and Roach, 1972, p. 2).

The classification by Anderson, Hardy, and Roach (1972) is followed here. It uses only the first two levels of detail cited above and shown on the accompanying map. From the data here presented, regional and local agencies may, if they choose, develop more detailed systems at the third and fourth levels to fill specific needs. For example, urban residential areas could be divided into subordinate categories such as low and high density. Aerial photography is the data base at the first and second levels, as used by the U.S. Geological Survey, the National Aeronautics and Space Administration, the Soil Conservation Service, the Association of American Geographers, and the International Geographical Union, to produce a timely and accurate inventory of the Nation's land resources.

High-altitude color infrared photography flown by the National Aeronautics and Space Administration in October 1972 at a scale of 1:121,000 was the chief data source for most of the accompanying map; coverage for the area west of longitude 105°7′30″ was flown in July 1973. The minimum level of accuracy in the interpretation of the imagery is about 90 percent. Categories at the second level cannot everywhere be interpreted with equal reliability; therefore multiple land uses within a single area are not shown. Nevertheless, this classification and mapping procedure allows for rapid mapping of extensive areas and it can be repeated often to monitor land-use changes over time. The procedure is particularly worthwhile for the Front Range Urban Corridor of Colorado where land-use maps are quickly outdated by rapid land development.

REFERENCES

Anderson, J. R., Hardy, E. E., and Roach, J. T., 1972, A land-use classification system for use with remote-sensor data: U.S. Geol. Survey Circ. 671, 16 p.

Driscoll, L. B., 1974, land-use classification map of the Boulder–Fort Collins–Greeley area, Front Range Urban Corridor, Colorado: U.S. Geol. Survey Misc. Inv. Map I–855–B

_____, 1975, land-use classification map of the Colorado Springs–Castle Rock area, Front Range Urban Corridor, Colorado: U.S. Geol. Survey Misc. Inv. Map I–857–B

Base compiled by U.S. Geological Survey in 1972 from 1:24,000 quadrangles dated 1965–1966. Limited revision from aerial photographs taken 1971

50,000–foot grid based on Colorado coordinate system, central zone

5000–metre Universal Transverse Mercator grid ticks, zone 13, shown in blue

Metric elevations are shown in parentheses

SCALE 1:100 000

1 ½ 0 1 2 3 4 5 MILES
5000 0 5000 10 000 15 000 20 000 25 000 FEET
1 .5 0 1 2 3 4 5 KILOMETRES

CONTOUR INTERVAL 100 FEET
DOTTED LINES REPRESENT 50-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1975

EXPLANATION

AGRICULTURAL LAND
- Ac – Cropland, fallow and cultivated
- Ai – Cropland, irrigated
- Af – Feeding operation – Livestock, poultry
- Ap – Pasture – Either permanent or in rotation with cropland

BARREN LAND
- Bf – Hillslopes, nonforested or sparsely timbered – May be brushy or grassy
- Br – Exposed rock – Sparse vegetation
- Bt – Tailings – Mine waste

FOREST LAND
- Fbc – Coniferous, intermittent crown
- Fcc – Coniferous, solid crown
- Fbd – Deciduous, intermittent crown

RANGE LAND
- Rc – Chaparral – Brushland, mostly scrub oak and associated shrubs
- Rg – Grassland – Short natural grasses but uneven ground cover

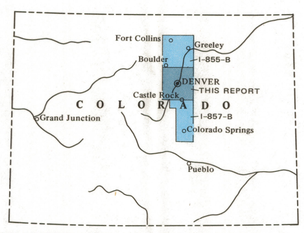
URBAN AND BUILT-UP LAND
- Uc – Commercial and service area
- Ue – Extraction – Pit, quarry
- Uf – Recreational – Park, golf course, drive-in theater, racetrack, stadium
- Ug – Cemetery
- Ui – Industrial
- Uo – Open land – Vacant land in built-up area
- Up – Public and institutional – School, governmental, military, medical, religious
- Ur – Residential – High and low density
- Ut – Transport area – Airport, railroad yard, right-of-way at interchange, cloverleaf
- Uu – Utility – Sewage plant, powerplant, antenna field
- Uw – Solid-waste dump, landfill

WATER
- Lakes and reservoirs

ROADS AND HIGHWAYS
- Primary highway – Freeway, divided 4 lanes or more
- Secondary highway – Numbered routes, 2 lanes
- All streets and other paved roads
- All-weather road, graveled, drained, and graded
- Dirt road
- Trail – Jeep or truck trail

RAILROADS
- Main line
- Siding

ELECTRIC UTILITY
- Power line



MAP SHOWING AREA OF FRONT RANGE URBAN CORRIDOR

LAND-USE CLASSIFICATION MAP OF THE GREATER DENVER AREA, FRONT RANGE URBAN CORRIDOR, COLORADO

By

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1975

For sale by U. S. Geological Survey
Denver, Colo. 80225 and Reston, Va. 22092, price $1.00

☆ Interior–Geological Survey, Reston, Va.–1975

Land classification as of October 1972 and July 1973