
CHAPTER 4 NATURAL AND MAN-MADE FEATURES

4.0 NATURAL AND MAN-MADE FEATURES

4.1 Introduction

This section analyzes O'Fallon's development capacity through investigation of its natural and man-made features. Knowledge of physical features such as slope, soil, and drainage conditions indicates areas of opportunity and constraint. The city's infrastructure (major utilities and roads) as well as its public facilities and land use patterns portray various operational systems. A synthesis of this information provides the city with a basis to make balanced decisions regarding civic improvements and future growth.

4.2 Topography

Gently rolling hills characterize O'Fallon and its planning area's topography. The vast majority of land area has gentle to moderate slopes (0% to 8%). Moderate (8% to 15%) and steep slopes (above 15%) occur along the major creeks and their tributaries. Future development along Engle Creek, Rock Spring Branch, Ogles Creek, and the FPA expansion area may encounter added costs due to mitigation of potential problems created by slope conditions. Areas of steep slope form significant limitations on development. These areas are depicted in the enclosed Natural Features Map.

Most of O'Fallon proper sits at 550 feet above mean sea level, while the planning area ranges between 430 feet and 600 feet. The high point, 598 feet, falls in the northwest corner of the planning area along Old Collinsville Road approximately four-tenths of a mile north of Milburn School Road. An area north of O'Fallon's sewage treatment facility represents the low point at 434 feet.

4.3 Soils & Undermined Areas

Factors influencing soil quality with respect to development include slope, permeability, shrink-swell characteristics, corrosive potentials, load bearing capacities, wetness, and drainage characteristics. Most prevalent soils within the planning area appear well drained, having been formed in loess on the upland till.

Fayette and Muscatine soil associations represent the most common soil classifications. Soils within the Fayette Association are well drained at gentle to very steep slopes. The Muscatine-Tama soils appear well

CHAPTER 4 NATURAL AND MAN-MADE FEATURES

drained to somewhat poorly drained at nearly level to sloping inclines. Overall, these soils pose few problems for development.

The areas of probable limitations on development lie primarily along the creeks. Steep slopes and severe erosion characterize these areas. Wakeland soils, found on bottom lands within the flood plain, consist of nearly level, somewhat poorly drained soils that formed in silty alluvial sediment.

Other areas that pose probable development limitations include spoil areas for underground coal mining operations ("gob piles") and physical depressions in upland and prairie areas. The western portion of the City is notably undermined. Reclamation of the former St. Ellen's mine site southwest of the Ridge Prairie Heights subdivision has gained new potential for development. A significant portion of the planning area consists of undermined land. From the mid- 19th century to the mid-20th century, the area witnessed active coal mining operations. Within the O'Fallon planning area, undermined areas cover a large portion of land west of the Illinois Terminal tracks and south of Milburn School Road. Other undermined tracts lie situated east of downtown O'Fallon along the CSX Railroad tracks. Development on undermined property risks subsidence requiring evaluation on a site-by-site basis. Known subsidence activity has occurred near Elm and Orchard Streets, O'Fallon Lumber at the corner of Cambridge Boulevard and West Highway 50, and near the Sonic Restaurant. Any development proposed for these areas should have geotechnic reports prepared prior to construction activity to minimize the likelihood of future damage. Subsidence areas are depicted on the enclosed Natural Features Map.

4.4 Drainage, Hydrology, and Stormwater

Natural drainage in O'Fallon is conducted primarily through the Kaskaskia River Basin. The planning area falls within the Silver Creek and the Richland Creek Watersheds. Engle Creek and Rock Spring Branch form the Engle Creek Sub-watershed. Ogles, Upper Richland, and Upper Silver Creeks, in addition, serve the larger planning area as natural stormwater drainage conduits.

No methods of stormwater detention were required before 1977. Detention ponds and storm sewers have been used in new subdivisions. City development codes require detention be provided on all new residential and commercial development. Regional detention is preferred, however, sometimes it must occur on a site by site basis. Some older areas have storm sewers, but are considered generally undersized.

CHAPTER 4 NATURAL AND MAN-MADE FEATURES

The 100-year flood plain, as marked by the Federal Emergency Management Agency (FEMA), closely follows the four major creeks. In the planning area's eastern portion, a large marsh surrounding Silver Creek also remains subject to flooding. City Ordinance No. 1030, "Flood Hazard Management Regulations", governs development within the 100-year flood plain. Essentially, the ordinance guides usage pertaining to floodways, water and sewage utilities, new construction and substantial improvements, and subdivision development all within the 100-year flood plain. Development in the floodplain and along riparian areas is discouraged, as discussed elsewhere in the plan. Flood prone areas are depicted on the enclosed Natural Features Map.

Stormwater Master Plan

In 2003, the City of O'Fallon retained the consulting engineering firm of Black & Veatch to develop a Stormwater Master Plan and associated stormwater Capital Improvement Plan. Findings of the report and recommended projects can be found in Chapter 6.

4.5 Airport Constraints

Scott Air Force Base and MidAmerica St. Louis Airport are situated immediately south and east of the City of O'Fallon. Together, this joint-use airport complex provides two parallel runways for military and civil aircraft operations. Portions of O'Fallon lie within the airport complex's accident potential zones, high noise contour areas, and height limitation areas. In 1999, the City adopted an ordinance implementing airport zoning regulations (Airport Environs Overlay District) relating to these areas for the "prevention of the creation or establishment of airport hazards and aircraft noise".

Two areas in O'Fallon (not located on Scott AFB or MidAmerica Airport property) subjected to these zoning regulations are located west and east of Illinois 158 (Scott-Troy Road), north of I-64. The area west of Illinois 158 is a developed area generally zoned SR-2 Single Family located north of I-64, west of Shiloh's N. Main Street, and south of U.S. 50. This area contains a portion of Accident Potential Zone (APZ) II and lies within the 65 to 70 Ldn noise contour.

The area east of Illinois 158 is an undeveloped, unincorporated area generally zoned County A—Agriculture and O-3 Airport Overlay located north of I-64, east of Illinois 158, south of U.S. 50, and west of Rieder Road. This area contains portions of APZ I and APZ II, and lies within noise contours between 65 and 80 Ldn. Limitations on the future development of this area include the height of structures on the land, the use of the land compatible with airfield operations, and the possible mitigation of aircraft noise on new structures.



CHAPTER 4 NATURAL AND MAN-MADE FEATURES

Insert Natural Features Map Here