

NATURAL RESOURCES

Although Manville is highly developed, environmental considerations will continue to influence future land use planning within the Borough. This section summarizes the key natural resources which will have an effect on the development of remaining vacant land areas as well as redeveloped areas.

TOPOGRAPHY

The topography of Manville is fairly level with gentle slopes in certain areas. There are no areas which are unsuitable for development because of excessive or steep slopes. The 1982 master plan contains a topography map (plate 4) which shows the ten-foot interval contours within the Borough. This mapping also shows the areas of the Borough that are subject to flooding at a one and one-half storm year frequency. These areas are along the Borough's north and easterly boundaries - the Raritan and Millstone Rivers.

SOILS

There are two basic soil groups in Manville Borough; the soils formed in material weathered mainly from shale but partly from conglomerate and argillite and soils formed in recent and old alluvium. Within these groups there are three soil associations in the Borough. A soil association is a landscape that has a distinctive proportional pattern of soils.

In the western portion of the Borough is the Penn-Klinesville-Redville Association, consisting of nearly level to very steep, moderately deep and shallow well drained to somewhat poorly drained loamy and shady soils underlain mainly by red shale. This association is on the uplands where the landscape is undulating and rolling. Depth to bedrock, steepness of slope and a seasonal water table may be limitations for community development. This soil association is approximately 25% of the Borough.

The other two associations found in alluvium materials are Dunellen-Rowland-Birdsboro Association and The Rowland-Birdsboro-Raritan Association. The latter association is nearly level to strongly sloping, deep, well drained to somewhat poorly drained loamy soils formed in alluvial sediment; on floodplains and terraces. These soils occupy a small portion of the Borough (about 5%) along the Raritan River in the north section of the Borough and along the Millstone River in the southern portion of town. Community development limitations include frequent flooding and perched seasonal water tables.

The former association - Dunellen-Rowland-Birdsboro Association consists of nearly level to strongly sloping, deep, well drained to somewhat poorly drained loamy soils formed in glacial outwash or alluvial deposits; on floodplains and terraces. These soils occupy mostly all the central and eastern sections of Manville totalling approximately 70% of the Borough. Frequent flooding can be a community development limitation in this soil association.

The 1976 Soil Survey of Somerset County, prepared by the U.S. Soil Conservation Service, contains general and specific soil information and mapping in reward to the soil associations described above.

GEOLOGY

Manville Borough is located within the Brunswick Formation of the Triassic Lowlands Basin of Central New Jersey in the Piedmont Physiographic Province. Four regions within the Brunswick Formation are the highlands; the Somerville lowlands; the Watchung highlands and the Sourland-Rocky Hill uplands. The Borough which lies on the Somerville lowlands is an area underlain mainly by red shale, sandstone and a little Kittatinny limestone. These geologic units are located south of the highlands province and is found in all portions of Somerset County except for Bernardsville, Bernards Township and Warren Township.

The Brunswick Formation, often called the Brunswick Shale, consist of shale interbedded with fine-grained red sandstone. It is estimated to be approximately six to nine thousand feet thick. Areas underlain by the Brunswick Formation exhibit a gentle rolling topography with limited relief and wide valleys. The low point in the County can be found in Franklin Township, adjacent to Manville Borough, along the Raritan River where the elevation is below ten feet above sea level.

Although the shale itself is virtually impermeable, it is moderately fractured and jointed with cracks intersecting at all angles permitting ground water to flow in many directions. Most cracks and fissures can be found within three hundred feet of the surface and the number tends to decrease with increases in depth. Where circulating water has enlarged small cracks and crevices, or where a fault is encountered, a better than average ground water yield is available. In general, the Brunswick Formation is a reliable water source for most domestic and industrial uses including public supply.

VEGETATION

The developed sections of Manville occupy nearly level or gently sloping land between the Raritan and Millstone River floodplains. Floodplains are well-defined, broad, flat, valley surfaces that are covered with water when a stream overflows its banks. The Raritan River in the area of Manville has a well formed floodplain as do its northern tributaries such as the Lamington River. The Millstone River which empties into the Raritan also has a wide floodplain area from Princeton to Manville.

Each of these floodplains illustrates the classic structure of this type of formation. The land on the outer part of the floodplain is slightly higher in elevation and better drained than the inner portion of the floodplain. The inner part is not usually as well drained because it is lower and receives seepage from higher adjacent terrace land and because its soil is less sandy in texture than that of the outer floodplain. Though the frequency, duration and depth of flooding of the floodplains may vary, the resulting condition of poorly drained land creates just about the same type of plant habitat as that of swampland of different origin.

On the better-drained outer sections of the floodplains of the Raritan and Millstone Rivers, the characteristics trees include the willow, river birch, sycamore and box elder. On the more poorly drained inner floodplains of these rivers, these tree species typical of the central New Jersey lowlands grow abundantly; these include the ash, pin oak, silver maple, swamp white

oak, red maple, elm and black gum with occasional representatives of the more upland species. The fragrant smelling spicebush is the most common shrub. On the floor of the forest among remains of fallen trees grow many herbs such as the sensitive fern, touch-me-not, may apple, jack-in-the-pulpit, spring beauties, trout lilies and the cardinal flower. In areas where forests have been disturbed by man or where trees have been downed by strong winds, vines are common and grow almost to treetops. These vines include poison ivy, Virginia creeper, Japanese honeysuckle, bittersweet and wild grape.

On the better-drained portions of the Raritan floodplain west of New Brunswick, trees typical both of swamps and of the upland intermingle and no species is so abundant that it can be called dominant. The result is a forest of unusual diversity, with representatives of all the trees mentioned above and a few additional species such as Norway maple, honey locust, sassafras, black cherry, sumac, ailanthus, mulberry and hawthorne. Shrubs include the spicebush, elderberry, several species of viburnum, Japanese barberry and the silky dogwood. In many places the herb bluebells forms a spring carpet.