

Chapter 3. Natural Features

The Township's natural features play a significant role in planning for the future use of land in the community. Natural resources provide an essential element to the Township's suburban character. Some benefits provided by natural resources may be destroyed or threatened by uncontrolled or unplanned development. They include:

- recreation opportunities (such as hiking cross-country skiing, boating, biking, golf courses)
- education (heritage restoration, science, interactive education)
- restoration of plant and animal species (Hager Hardwood Forest)
- aesthetics (rural ambiance, serenity, privacy)
- pollution reduction (emission, noise, water, waste)
- wetland functions (flood control, groundwater recharge and purification, unique plant and animal habitat)
- economic value (agriculture products)

The Township contains sensitive soils, prime farm land, wetlands, and floodplains. A discussion of the Township's natural features with implications for land use planning follows.

Topography

Georgetown Township features gently rolling terrain with elevation ranging from approximately 561 to 751 feet above sea level. The landscape includes low-lying floodplain areas along the Grand River in the north and west, while higher elevations are found in the central and southern portions of the Township. These subtle changes in elevation contribute to varied drainage patterns and influence land use, development suitability, and stormwater management across the Township.

Hydrology

WATERSHED

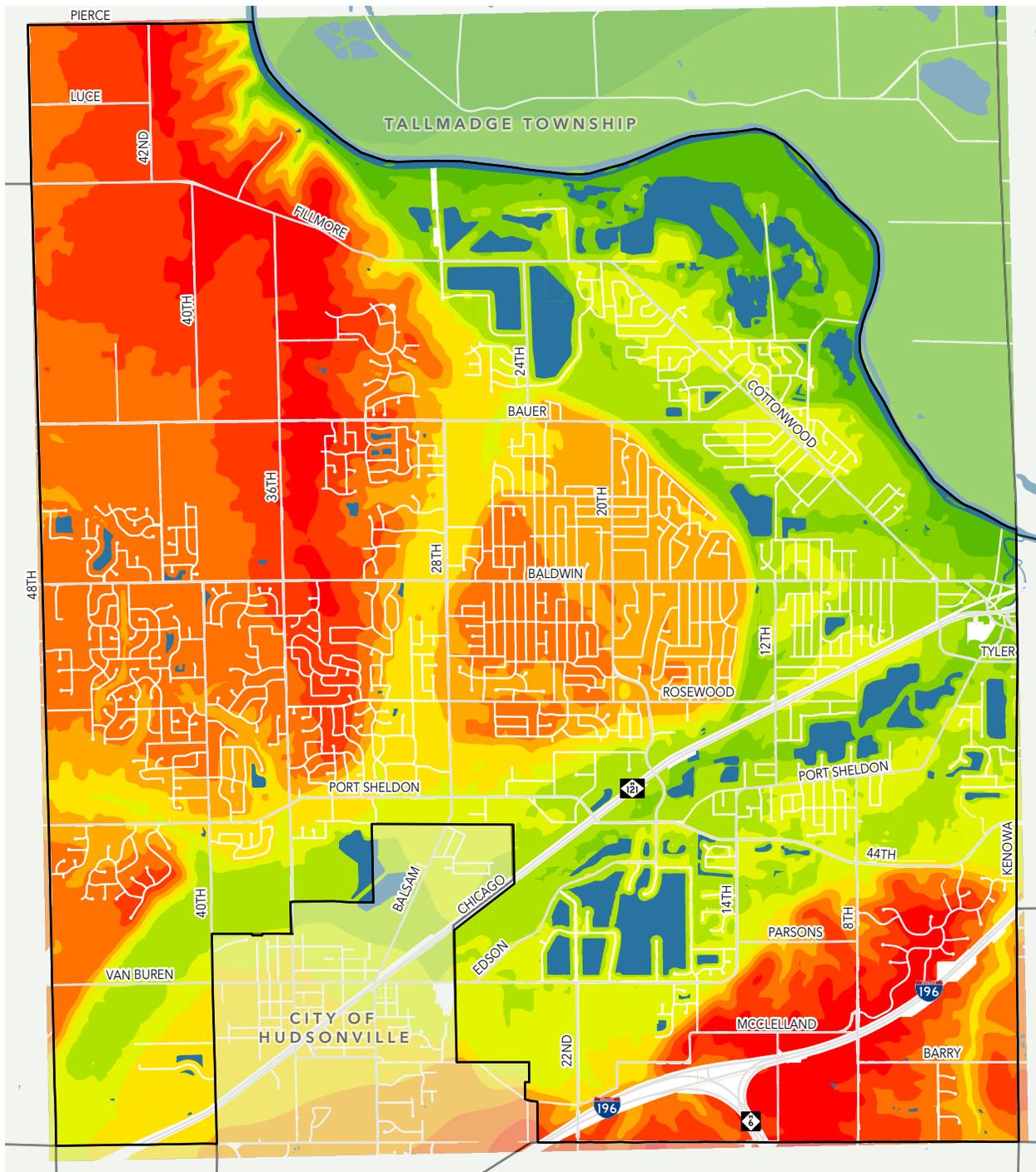
A watershed is an area of land where all precipitation (rain, snow, or ice) drains into a common outlet such as a river, lake, or stream. Watersheds are defined by topography: hills, ridges, and elevations that direct water flow. They play a critical role in water quality, flood control, and ecosystem health.

A watershed subbasin is a smaller drainage area within a larger watershed. Subbasins break down a watershed into more manageable units for monitoring and planning. Each subbasin drains to a specific tributary or section of the larger water body.

Georgetown Township is located within the Grand River Watershed, the largest watershed in Michigan, which ultimately drains into Lake Michigan. The Grand River is a major hydrologic feature in the region and significantly shapes the township's drainage, land use, and environmental planning.

Within Georgetown Township, the Grand River Watershed is divided into several subbasins, including:

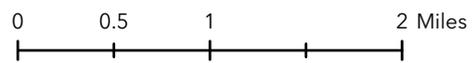
- Grad River
- Rush Creek
- East Branch Rush Creek
- Bass Creek
- Macatawa River

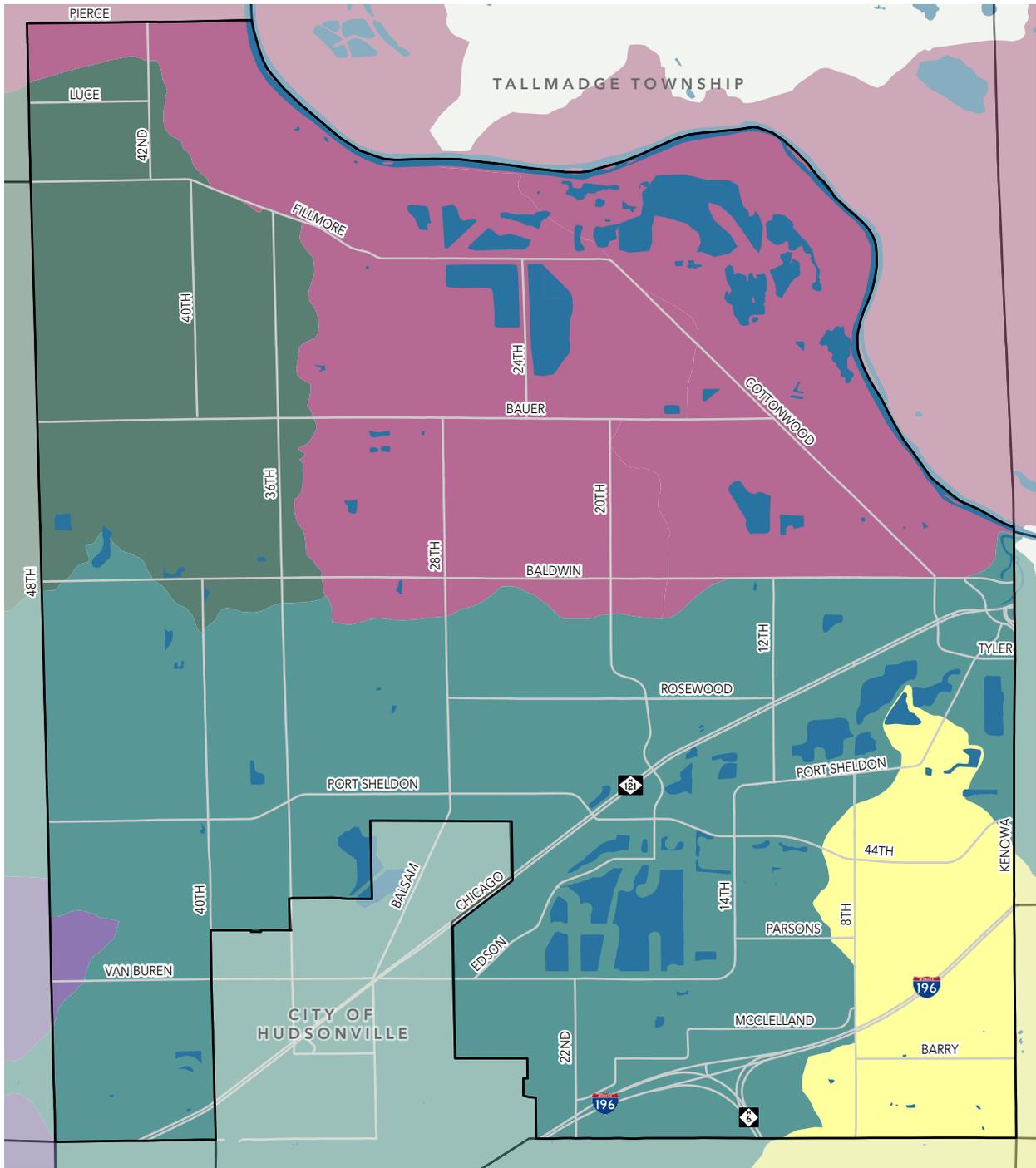


Legend

Elevation (in feet)	 607 - 616	 663 - 685
	 617 - 628	 686 - 714
	 629 - 643	 715 - 751
	 595 - 606	 644 - 662

Map: Topography

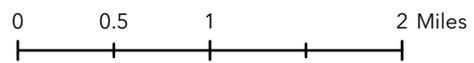




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|--|--|
| Watershed Subbasin | Grand River |
| Bass Creek | Macatawa River |
| East Branch Rush Creek | Rush Creek |

Map: Watershed



These subbasins direct surface water flow through various natural and developed areas in the Township. Understanding these subbasins helps guide stormwater management, water quality protection, and land use decisions that affect local and downstream communities.

WETLANDS

Michigan's wetland statute, Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, defines a wetland as "land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh." The definition applies to public and private lands regardless of zoning or ownership.

Wetlands in some instances can represent a limitation to development, but wetlands can also be a valuable development site amenity. Values of wetlands include:

- Flood and storm control by the hydrologic absorption and storage capacity of wetlands.
- Wildlife habitat by providing breeding, nesting, and feeding grounds and cover for many forms of wildlife, waterfowl, including migratory waterfowl, and rare, threatened, or endangered wildlife species.
- Protection of subsurface water resources and provision of valuable watersheds and recharging ground water supplies.
- Pollution treatment by serving as a biological and chemical oxidation basin.
- Erosion control by serving as a sedimentation area and filtering basin, absorbing silt and organic matter.
- Sources of nutrients in water food cycles and nursery grounds and sanctuaries for fish.

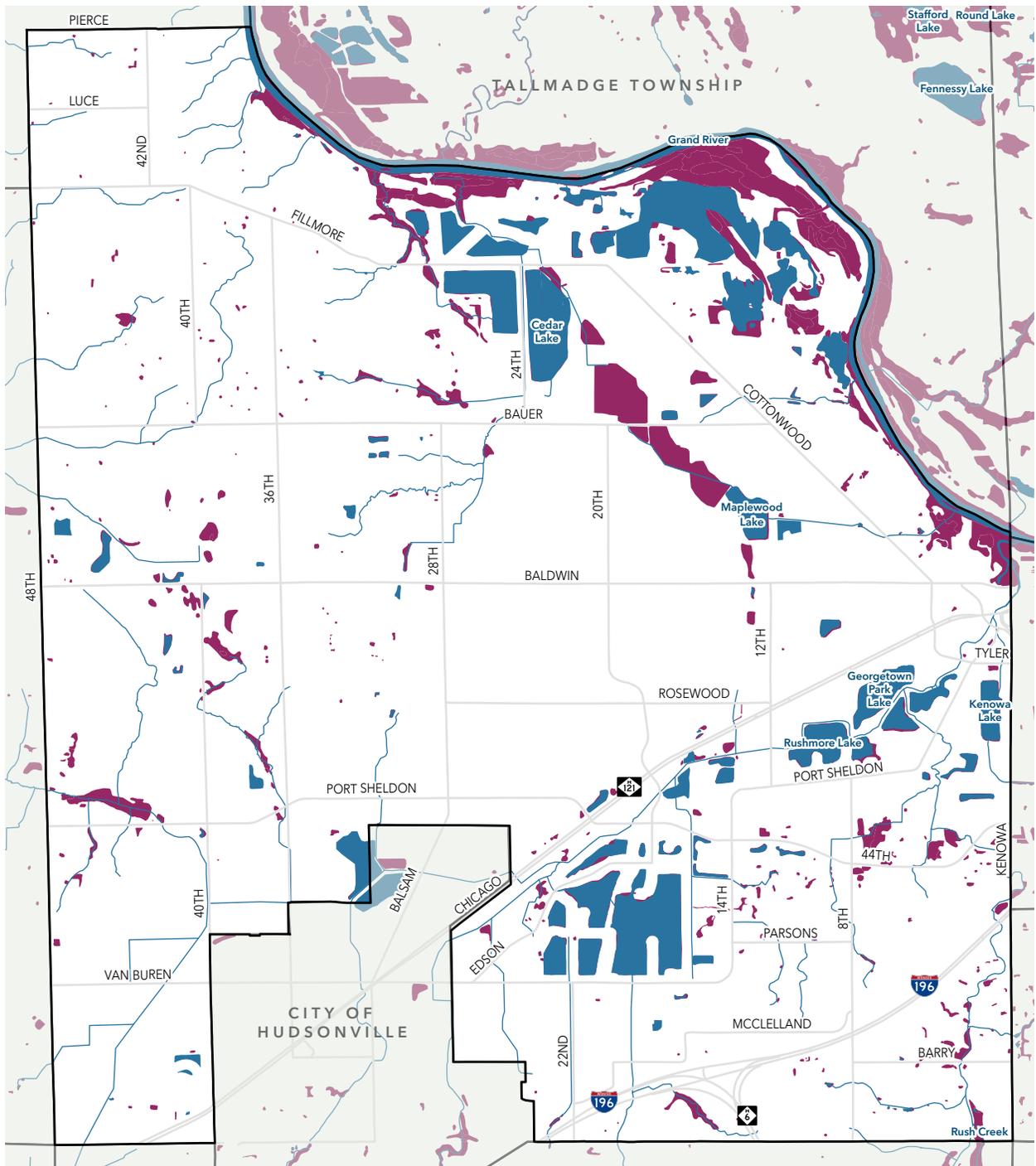
In 1979, the Michigan Legislature enacted the Geomare-Anderson Wetlands Protection Act (1979 PA 203), now incorporated as Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act (1994 PA 451), as amended (NREPA). The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has adopted administrative rules to clarify and guide the interpretation of Part 303. Additionally, certain wetlands in coastal regions, known as Environmental Areas, receive further protection under Part 323, Shorelands Protection and Management, of the NREPA. The law requires that persons planning to conduct certain activities in regulated wetlands apply for and receive a permit from the Department of Energy, Great Lakes, and Environment (EGLE) before beginning the activity.

The areas identified as wetlands on the Floodplains and Wetlands map are based on general criteria, which may differ from those used to determine whether a site is a regulated wetland status. Total reliance should not be placed on the mapping included in the master plan, as this is used for general reference to help build general awareness across the Township. A developer would be responsible for obtaining their own wetland delineation, which can be more specific on a given parcel or site.

FLOODPLAINS

The Federal Emergency Management Agency (FEMA) has determined the 100 and 500- year floodplain boundary within Georgetown Township for purposes of administering the federal flood insurance program. The areas within the FEMA 100-year floodplain are included on Flood Insurance Rate Maps, revised May 16, 2013, as amended, as shown on Map #.

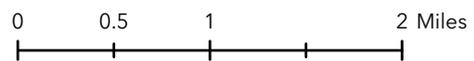
Development within the 100-year floodplain is subject to compliance with federal, state, and local development standards. These requirements are all coordinated into a single system of floodplain management intended to lower the risks to life and property from flooding in the Township. The 100-year floodplain adjoins many of the smaller drainage courses in the Township, in addition to the Grand



Legend

- Wetlands
- Water Bodies

Map: Wetlands



River. Floodplain area is found along Rush Creek, the Lowing-Comstock Drain (main drain and tributaries), Bliss Drain, Watson Drain and Huizenga Drain.

Soils

The Soil Survey Geographic Database (SSURGO) was used to determine each soil type's limitations for development. Agricultural land in Georgetown Township consists of muck soils, primarily used for growing vegetables, and a variety of other soil types used for corn, wheat, and hay. Large areas of muck soils remain undeveloped and are largely in productive agricultural use, predominantly in the southwest corner of the Township. The varying topography, shaped by geological and natural processes, has influenced the distribution of soil types. Soil characteristics evaluated for the Development Suitability map include water table, bearing capacity, percolation rate, and slope.

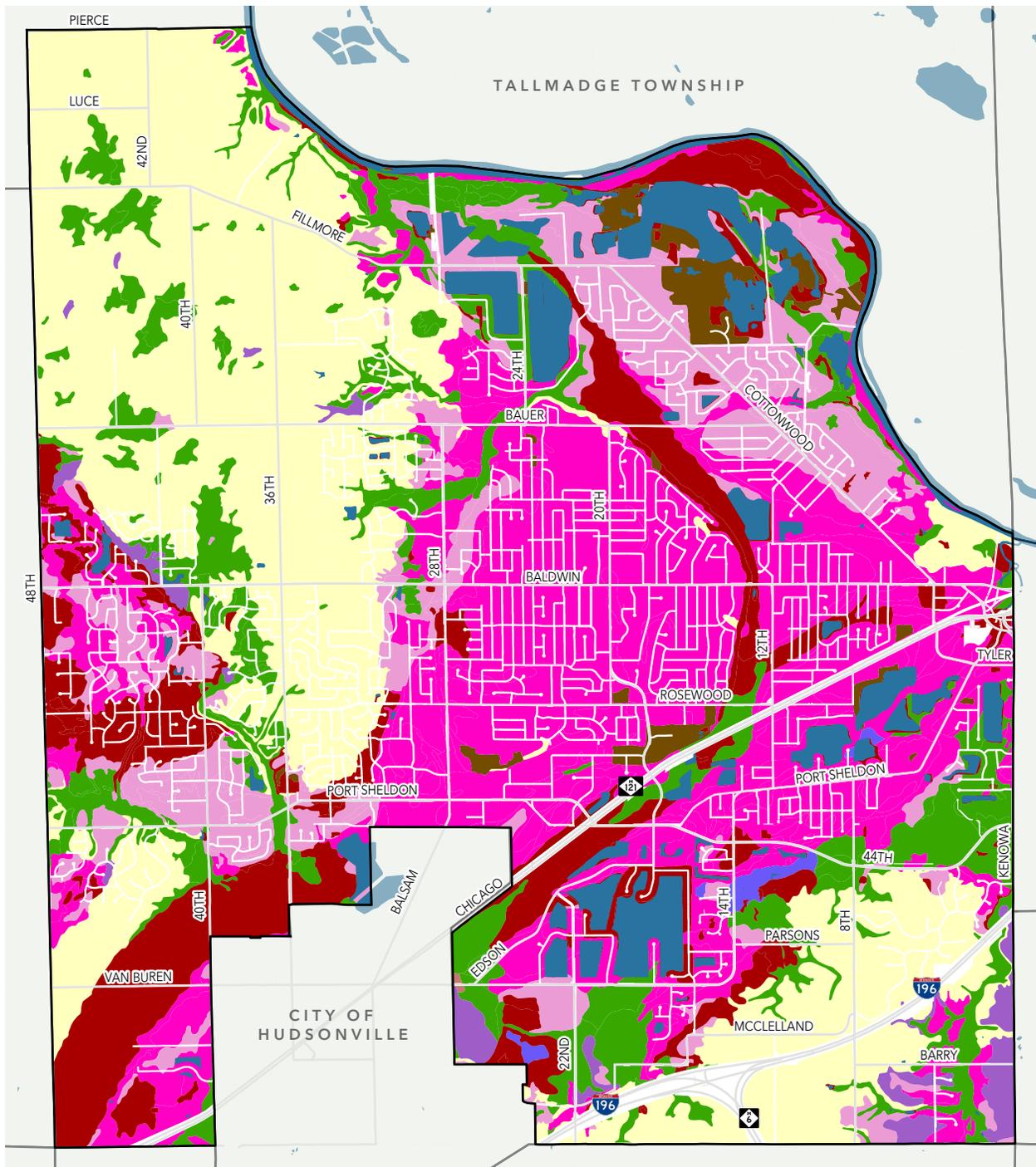
Map #, titled Soil Classification, indicates that a large portion of the Township is subject to the constraints described above. A review of this map shows that the Township's development to date has been strongly influenced by natural features. In particular, soil conditions, along with the availability of water and sewer service, have played a significant role in shaping the pattern of growth. Loamy sandy soils, known for being fertile and well-suited for development, are largely occupied by the Township's existing residential subdivisions, leaving limited space for future growth.

The areas where much of the Township's growth is occurring are subject to severe soil constraints. Sandy soils often have poor bearing capacities which can result in higher development costs for foundations, soil stabilization, and stormwater management. Unfortunately, problems can arise when developers seek to avoid these higher costs. The consequences are often passed on to the public and local government, who are left to address issues such as flooding, poor drainage, and soil erosion and sedimentation.

The Township also has a significant presence of former and a few existing gravel pit operations. These sites were used extensively for aggregate extraction throughout the 20th century, leaving behind large basins and ponds. Gravel pit soils are typically composed of coarse sand, gravel, and other well-draining materials, making them less suitable for agriculture but easier to develop in some cases. Georgetown has a notable amount of this soil type, reflecting its long history of gravel mining. Beginning around 2020, Ottawa County began acquiring approximately 149 acres of the reclaimed mining land to expand the Bend Area Space as part of the Grand River Greenway Initiative.

Prime Farmland

Agricultural land uses have decreased over the past 20 years due to the continued development of new residential uses in prime farmland areas. Areas with muck soils shown in Map#, are extensively farmed despite the development pressures.



Legend

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|--|---|
|  Pit |  Sandy |
|  Loamy Sand |  Sandy Over Clayey |
|  Loamy |  Sandy over Loamy |
|  Fine Loamy |  Muck |
|  Fine silty | |

Map: Soil Classification

