Development Influences Framework

INTRODUCTION

This framework provides information about the Arnold Study Area in relation to facts that serve as a foundation from which long range planning recommendations for the Area are made. In addition, not all lands within the Study Area are suitable for development as illustrated by the following series of maps. The planning team evaluated the Study Area to determine the development feasibility of the land. Understanding how these elements influence development is one basis for future land use recommendations.

This framework identified the following existing conditions and factors that affect the development potential of land within the Study Area.

- **Natural Areas:** Natural areas include the stream corridors and vegetation within the study area that contribute to overall quality of life and are elements residents identified to preserve.
- **Steep Slopes:** Steep slopes in the study area add a rich visual character. The majority of the steep slopes are on the southwestern portion of the city, most adjacent to streams.
- **Floodplain:** Development within the 100-year floodplain is not allowed by ordinance. The floodplain locations influence the recommendation for adjacent development densities.
- **Sanitary Sewer:** The presence of sewer is a strong criterion for development potential of the land.
- **Existing Undeveloped Land:** Includes developed lands comprised of commercial, residential, industrial, and parks and recreational lands.
- **Arnold Growth Projections:** Land Capacity exceeds the projected demand for both residential and nonresidential uses combined by 1,225 acres.
- **Walkability Analysis:** Other transportation options become increasingly important such as the ability of residents to walk or bike throughout the community.
- **Susceptibility to Change:** Is used broadly to indicate the likelihood that an area will change in the near future.

Meramec River.

Existing Natural Resources

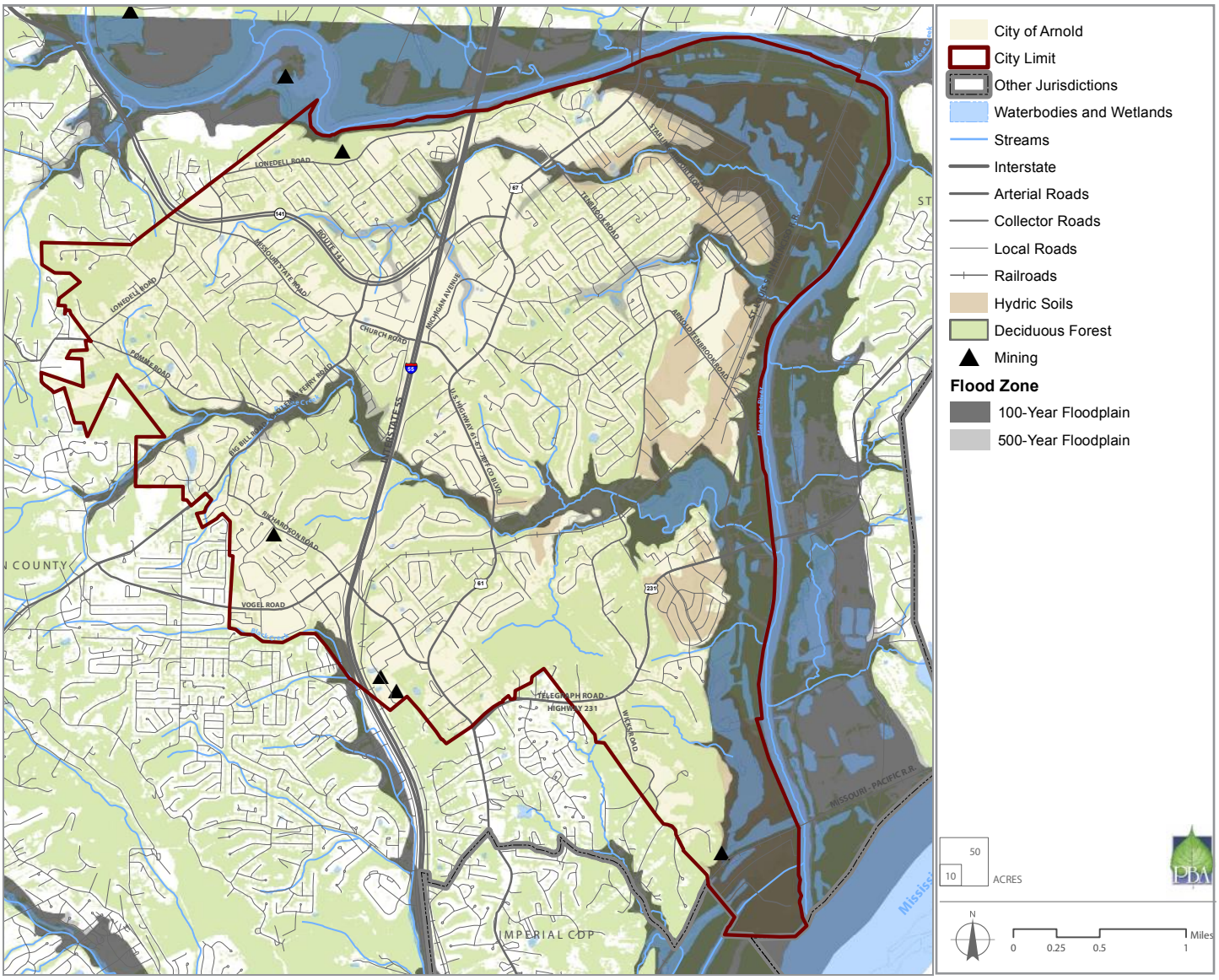
Vegetated Areas:

Vegetated areas impact land development feasibility, serve as a natural drainage system, and add a rich visual character to the area.

The Arnold Study Area has a wealth of natural resources. The planning team evaluated the natural resources within the Study Area, the goal of which was to identify those places that Arnold values most, prioritize what's most important to retain, develop protection strategies to maintain a balance between preservation and promotion of quality growth and development, define opportunity corridors, and define high quality open space set asides. Example implications for development include, minimize fragmentation of contiguous patches of forests. These are of greatest benefit for providing protection for streams from stormwater runoff, wildlife habitat, and recreational amenities. Forest areas can assist in reducing the heat island effect and sequester carbon thus reducing the City's carbon footprint.

Existing Natural Resources Map (2011)

Figure: 2 Existing Natural Resources Map



Existing Steep Slopes

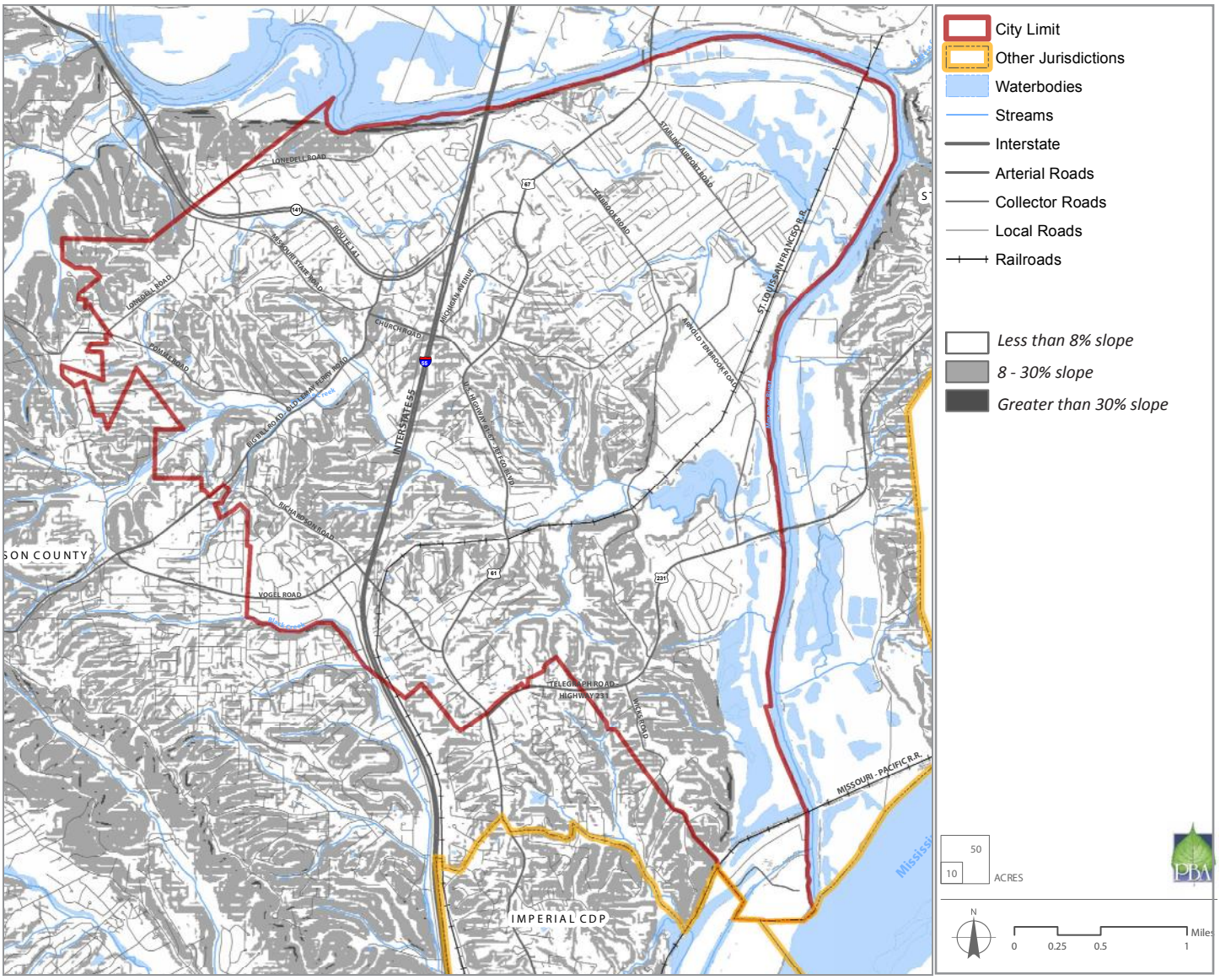
The City of Arnold lies within the Ozark Highlands Ecoregion. This section of the ecoregion is characterized by the dissected hills of the Mississippi and Missouri Rivers and the rugged hills of the Meramec River. Local relief averages 100 to 150 feet with broad, loess covered ridges (fine grained silt sized material deposited by wind) giving way to steep slopes and broad valleys. Slopes within a majority of the City (78.3%) are 8% or less, 21.5% with slopes between 8 and 30%, and the remainder of the City having slopes greater than 30%.

Steep Slopes:

The steep slopes in the study area add a rich visual character. The majority of the steep slopes are adjacent to streams.

Existing Steep Slopes Map

Figure: 3 Existing Steep Slopes Map



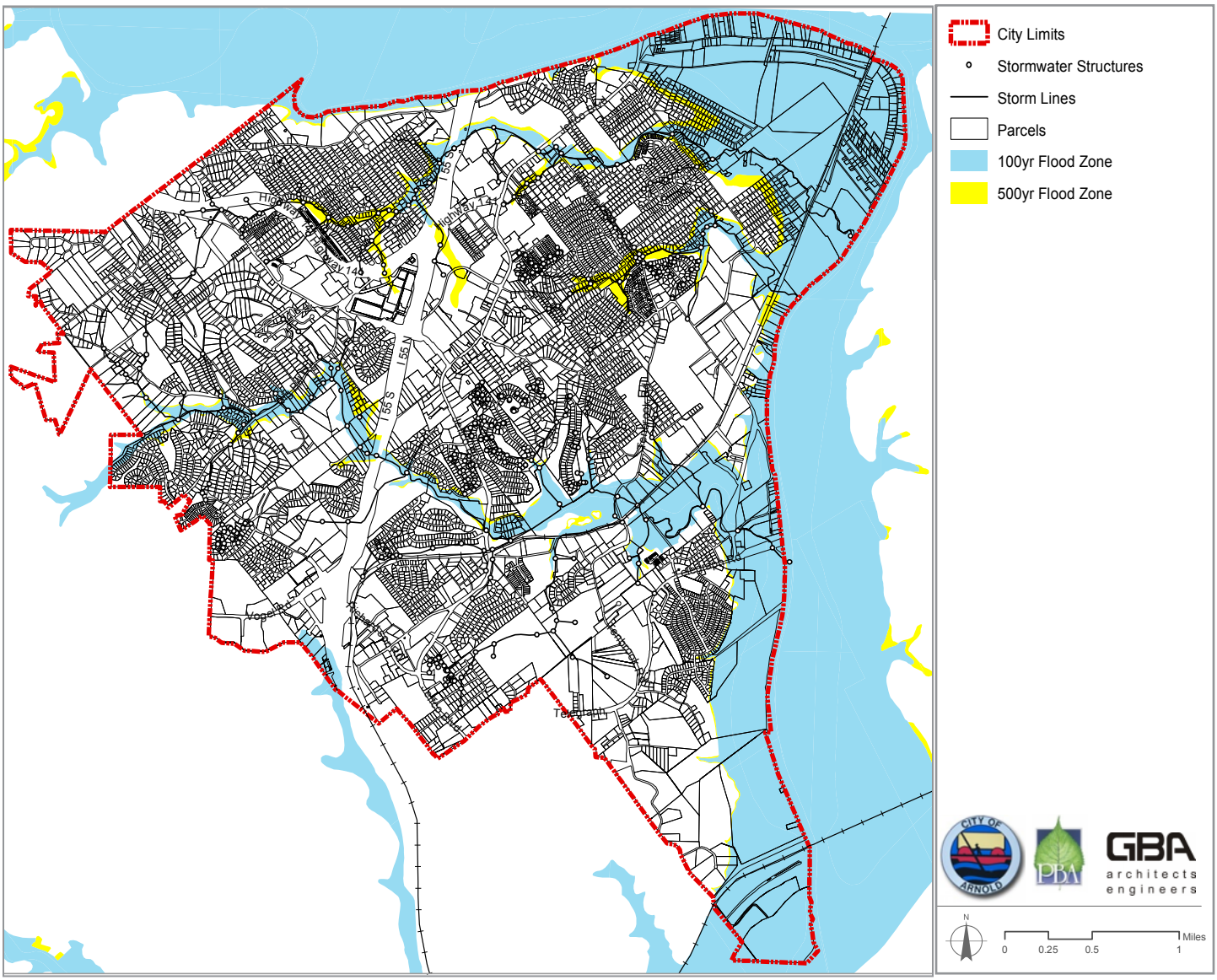
Existing Floodplain

The City is affected by flooding from both the Mississippi and Meramec rivers. Major flooding occurs as a result of high water elevations on the Mississippi River which cause inundation covering a considerable area within the city, blocking major thoroughfares, and causing significant property damage. Flooding along the Meramec River is generally caused from Mississippi River flood events and heavy rainfall. The floodplain management ordinance severely limits new development in the 100-year floodplain.

Floodplain:
The floodplain locations influence the recommendation for development densities. Development within any floodplain is not recommended.

Existing Floodplain Map (2011)

Figure: 4 Existing Floodplain Map



Existing Sanitary Sewer

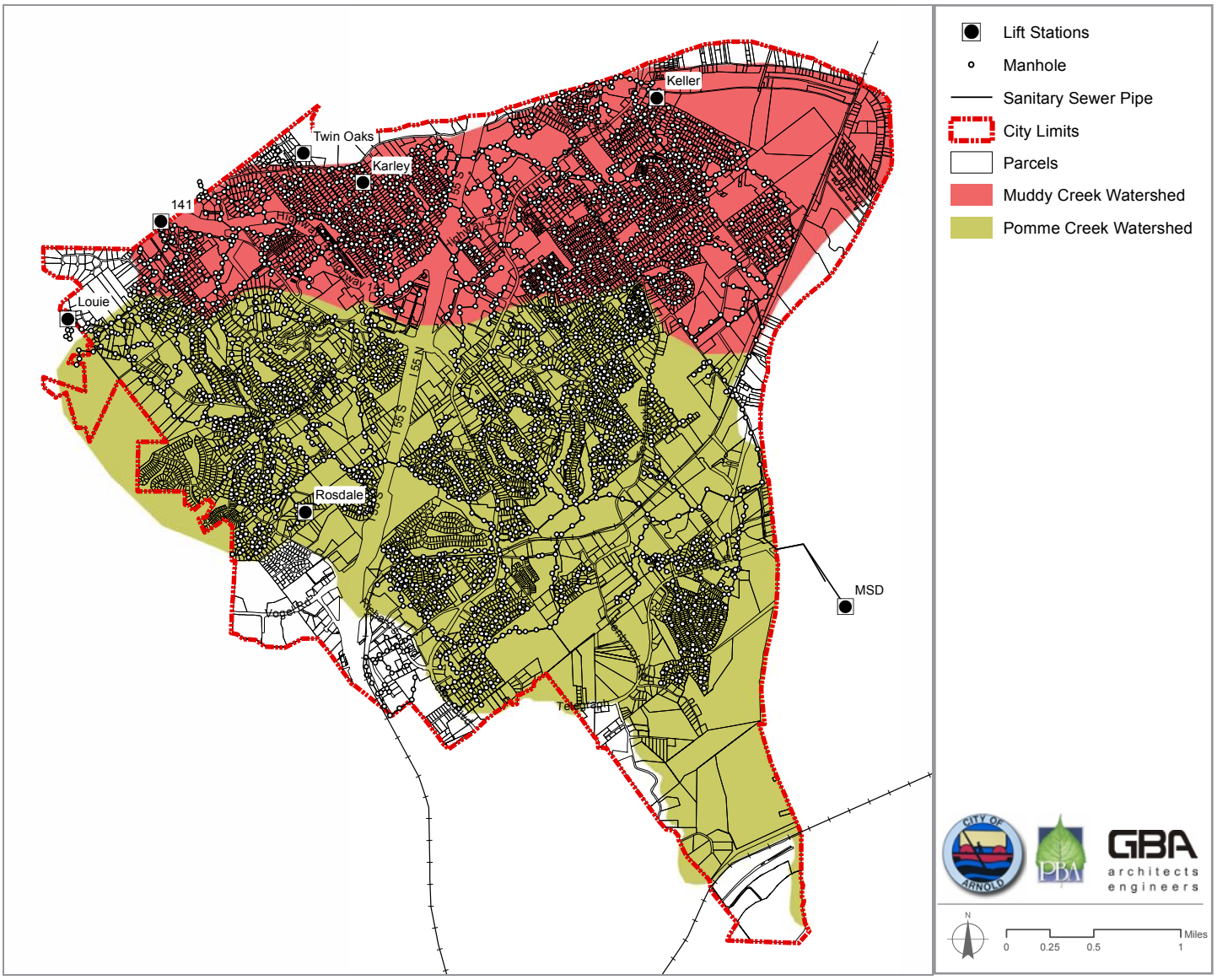
The availability of utilities and infrastructure influences, and is influenced by future development. The study area has two (2) principal watersheds which have been fully developed with the exception of relatively small pockets and unsewered existing developments that haven't been sewered due to terrain issues. The most significant issue with the development of land is being able to provide public sanitary sewer service. This is due to the following: large cost to install gravity sewer mains and wastewater treatment facilities; environmental issues associated with obtaining government approval for new wastewater treatment plants and/or lift stations; and public sentiment against constructing treatment facilities and/or lift stations near residential or commercial developments.

Sewer Service:

The current sewer service area is represented on the map below. This area is generally sewered through gravity interceptors.

Existing Sanitary Sewer Map (2011)

Figure: 5 Existing Sanitary Sewer Map

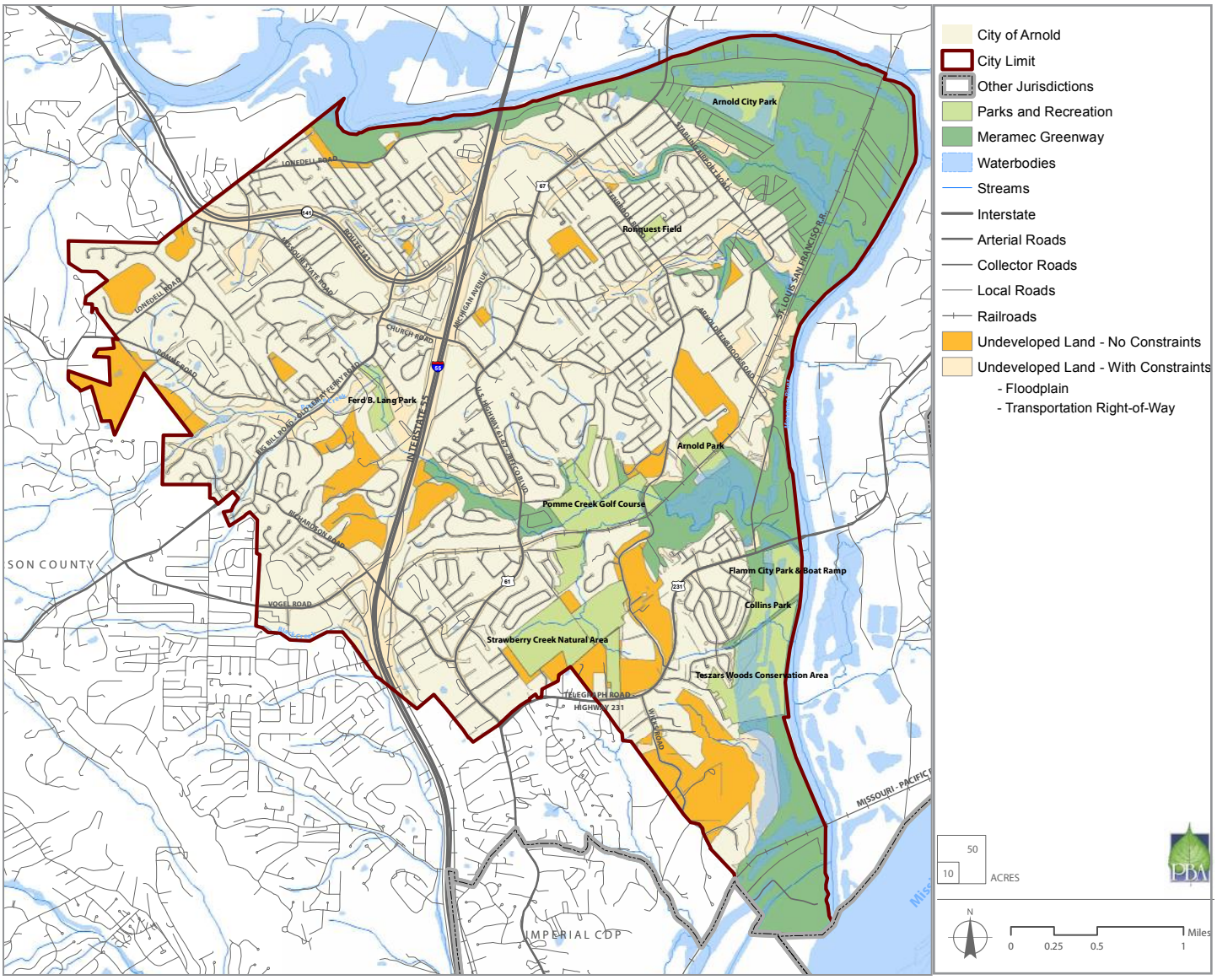


Existing Undeveloped Land

A broad conceptual analysis of Arnold revealed that almost 2/3rds or 58% of the City includes developed lands comprised of commercial, residential, industrial, and parks and recreational lands. Undeveloped lands (dark and light orange) are at an uncharacteristically high percentage, 41% of the total land area, which is non-typical for most communities due to land values. However, Arnold is rich with steep slopes and deep valleys, streamways and floodplains, areas which have been historically undesirable to develop.

Existing Undeveloped Land Map (2011)

Figure: 6 Existing Undeveloped Land Map



Arnold Growth Projections

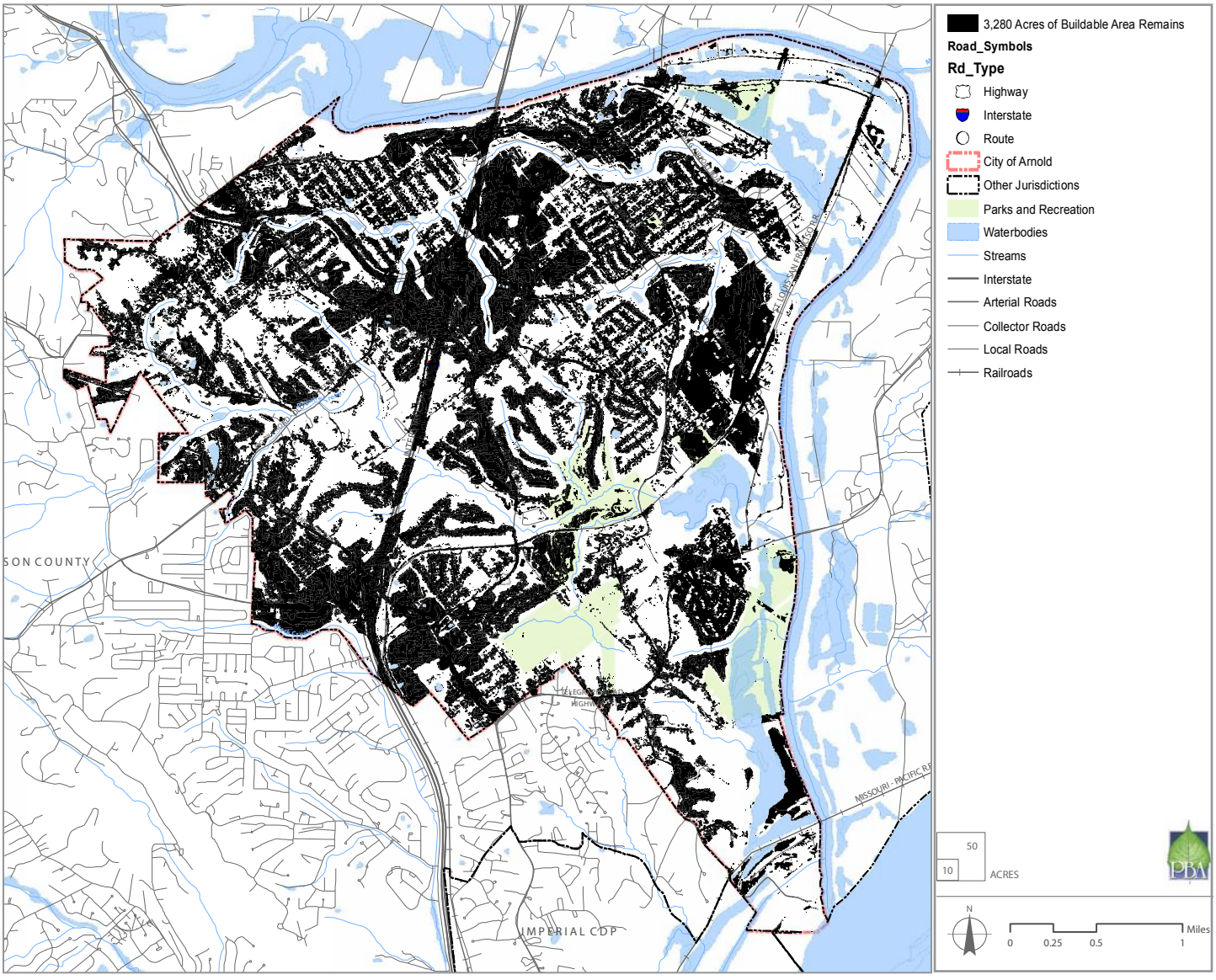
The total amount of land available for development or redevelopment, excluding all environmentally sensitive lands, is estimated to be 3,280 acres as illustrated on the Buildable Areas map below. This area can be further refined by excluding the urbanized area of 1,809 acres, representing existing impervious surfaces, resulting in 1,471 acres of land for future development.

The total projected demand for both residential and nonresidential uses combined equals 246 acres. Residential uses over the next 30 years are projected to need an additional 176.3 acres, while nonresidential uses are projected to need an additional 70 acres.

Land Capacity exceeds the projected demand for both residential and nonresidential uses combined by 1,225 acres. A general guideline is that a city should have, at a minimum two times the projected demand for each use to provide choice and opportunity.

Buildable Area Map

Figure: 7 Buildable Area Map



Walkability Analysis

The primary mode of transportation in Arnold is by car. Arnold is served by a variety of interstate highways, state highways and city streets. Other transportation options become increasingly important throughout the planning process, such as the ability of residents to walk or bike throughout the community.

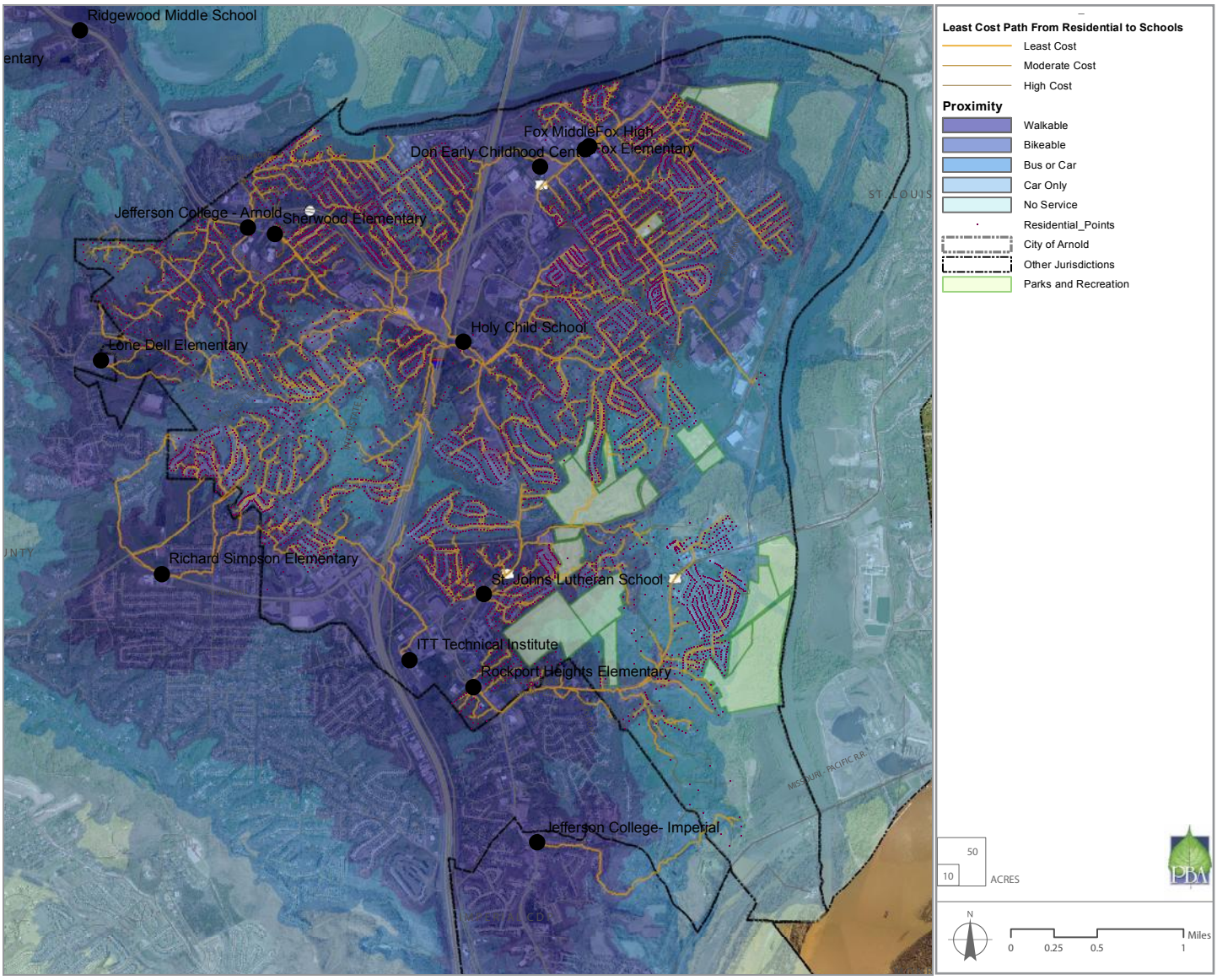
See Transportation Framework for more detail.

Residents to Schools

The map graphic (below) indicates areas well served by schools in dark blue and the least cost path of travel from residential units to schools in orange. Areas in light blue are not well served by schools and dark line segments indicate a difficult travel path.

Residents to Schools Cost Distance Map

Figure: 8 Residents to Schools Cost Distance Map

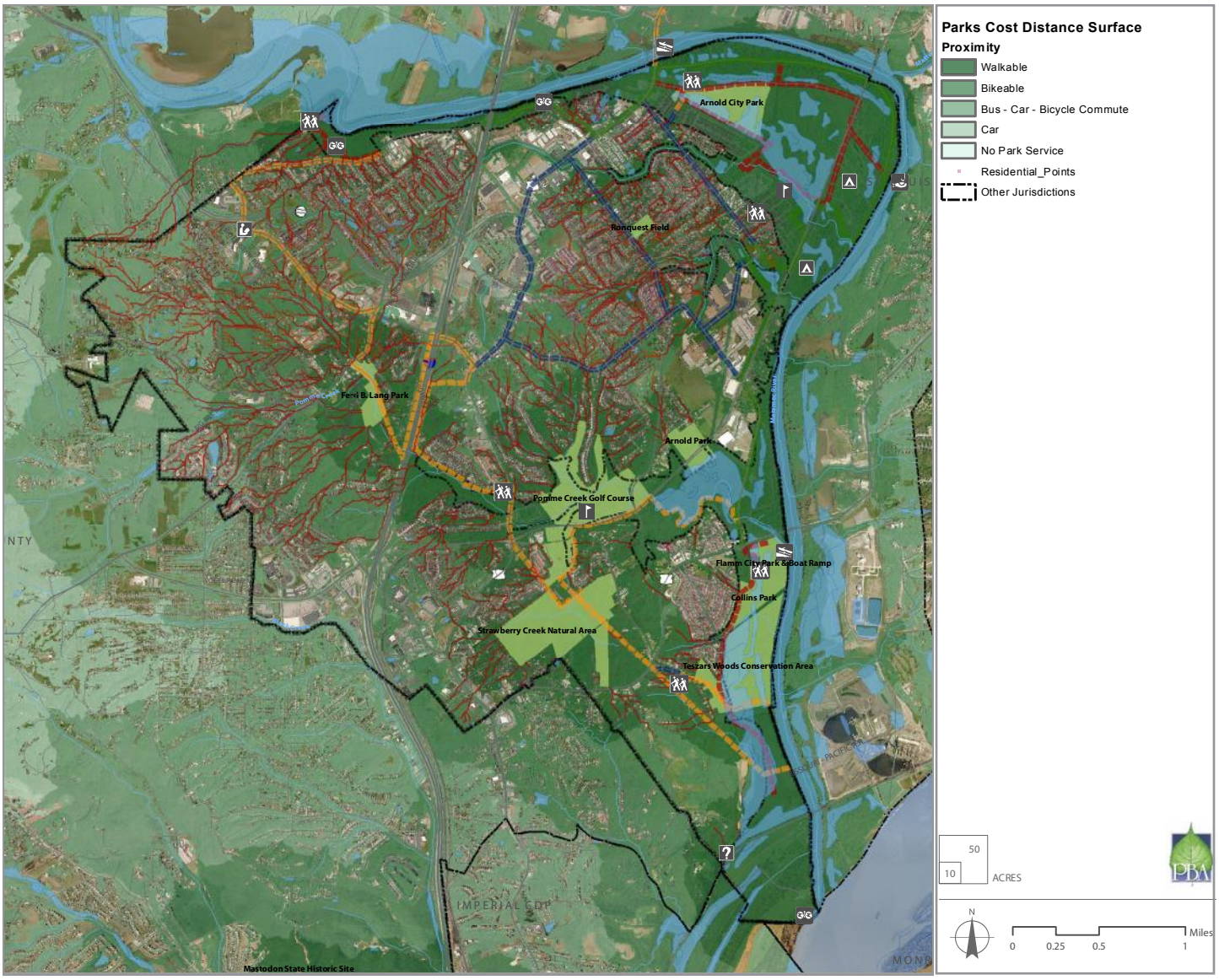


Residents to Parks

The map graphic (below) indicates areas well served by parks in dark green and the least cost path of travel from residents to parks as a red line. Areas in light green and brown lines indicate areas not well served by parks or residential units with a more difficult path of travel to a park.

Residents to Parks Cost Distance Map

Figure: 9 Residents to Parks Cost Distance Map



Susceptibility to Change

The Susceptibility to Change analysis is a planning model developed to assess the urban growth potential or the likelihood that an area will change in the near future. Analysis of a range of factors provide a snapshot of the urban development potential of lands to help shape policy decisions.

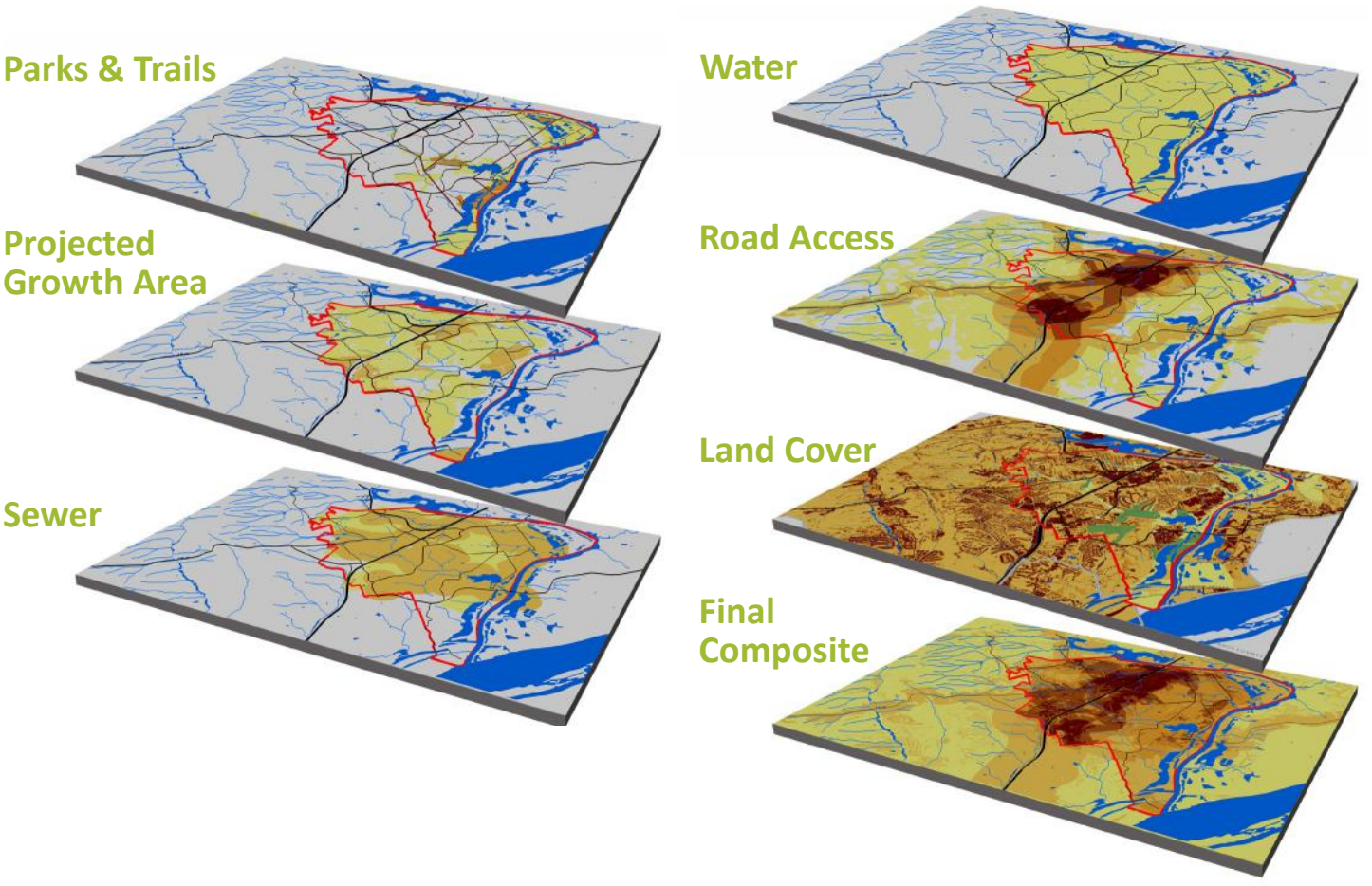
Six factors

Each of the six factors of road access, projected growth areas, water and sewer infrastructure, location of parks and trails, and land cover were ranked based on attributes.

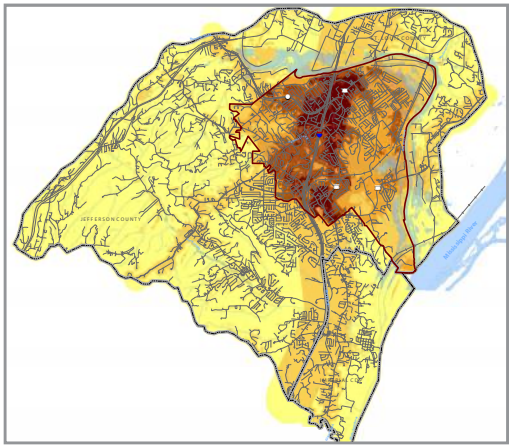
Change can include: new development on previously undeveloped land, redevelopment, change of use, or intensification of use.

- **Higher values (dark brown) represent ideal conditions for change.**
- **Lower values (light yellow) represent conditions less likely to change.**

This analysis is not a predictive model intended to project where development will and will not occur, rather it is a simple and rapidly applicable planning model meant to give a snapshot of the urban development potential of a community so salient recommendations can be made.

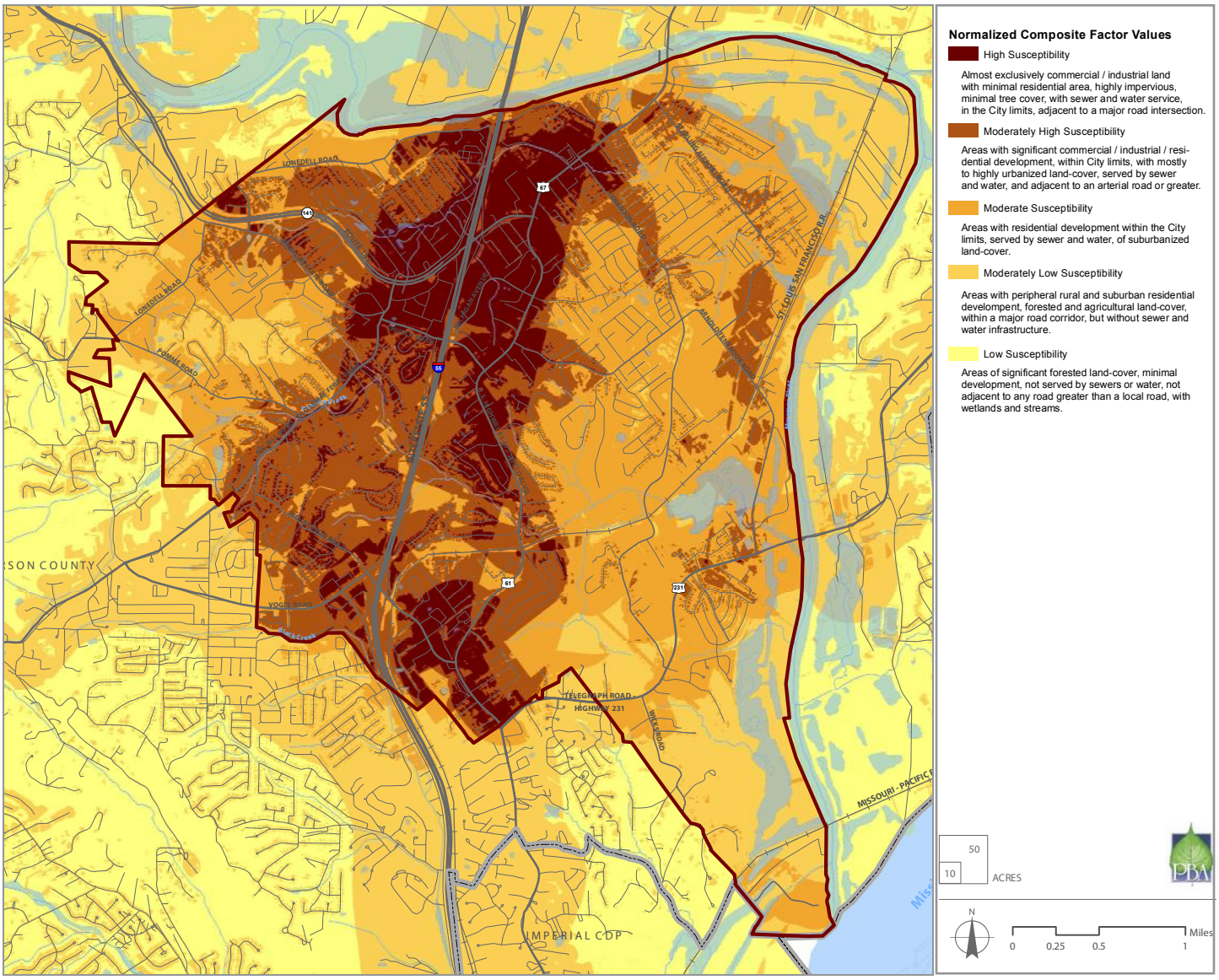


Arnold Watershed Context:



Susceptibility to Change Map

Figure: 10 Susceptibility to Change Map



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