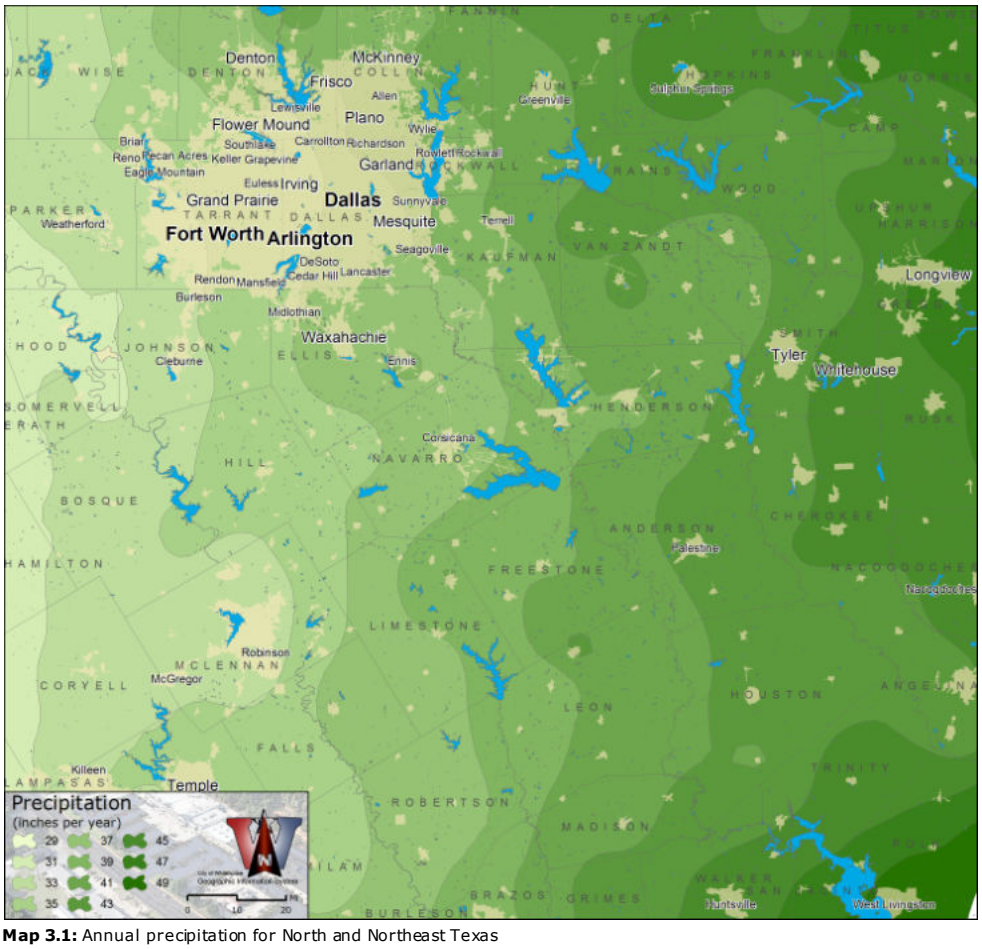
SECTION 3: NATURAL ENVIRONMENT

Studies of the natural environment were not funded as a part of this study. However, some freely available data provided by other government agencies has been aggregated and summarized within this Plan in order to provide at least a partial understanding of the conditions at work within the community. Information such as elevation, soil type, and hydrology were analyzed on this limited basis. Agencies providing such data included the Smith County Appraisal District, the Environmental Protection Agency, and the Texas Natural Resources Information System (TNRIS) clearinghouse.

Climate

Precipitation

Whitehouse is located within an area of high annual rainfall observed throughout the Northeast Texas region. On average, the City receives between forty three (43) and forty five (45) inches of rain per year (Map 3.1).



Map 3.1: Annual precipitation for North and Northeast Texas

Whitehouse, Troup, New Chapel Hill, and other cities in the extreme southeastern portion of Smith County receive the highest annual rainfall. Other cities such as Lindale in the northwestern portions of the County receive as little as forty one (41) inches per year.

Rainfall within the community varies by season with the heaviest precipitation averages occurring between October and December. October is the wettest month averaging 5.1 inches of total precipitation (Chart 3.1). The community also experiences occasional severe weather including tornadoes and flooding. Local emergency management agencies utilize appropriate technology and have access to staff members with credentials including certified storm spotters through the Fire Department. These human and technological assets are deployed as needed to monitor severe weather situations.

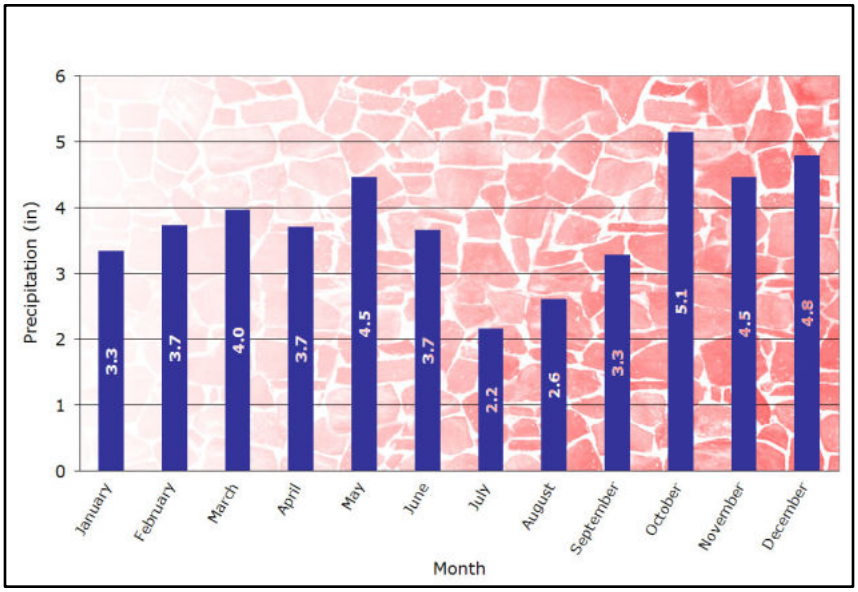


Chart 3.1: Precipitation average by month for Whitehouse (source: http://www.weather.com)

The region rarely experiences notable accumulations of snow during the winter months. Ice and sleet are more common than snow due to rapid temperature changes and high precipitation during winter months, occasionally making driving conditions dangerous.

Temperature

Located within East Texas the City of Whitehouse is relatively humid with hot summers and generally mild winters. The warmest months are July and August

when average high temperatures reach 94°F (Chart 3.2). Due to humidity levels the temperature often "feels" much higher. Low temperatures during the summer months generally remain above 70°F.

The coolest months experienced within Whitehouse are December, January, and February. With its mild climate, average highs during these months remain mild at 57°F to 58°F. No months regularly average low temperatures below freezing. January is the coldest month with an average temperature of 38°F.

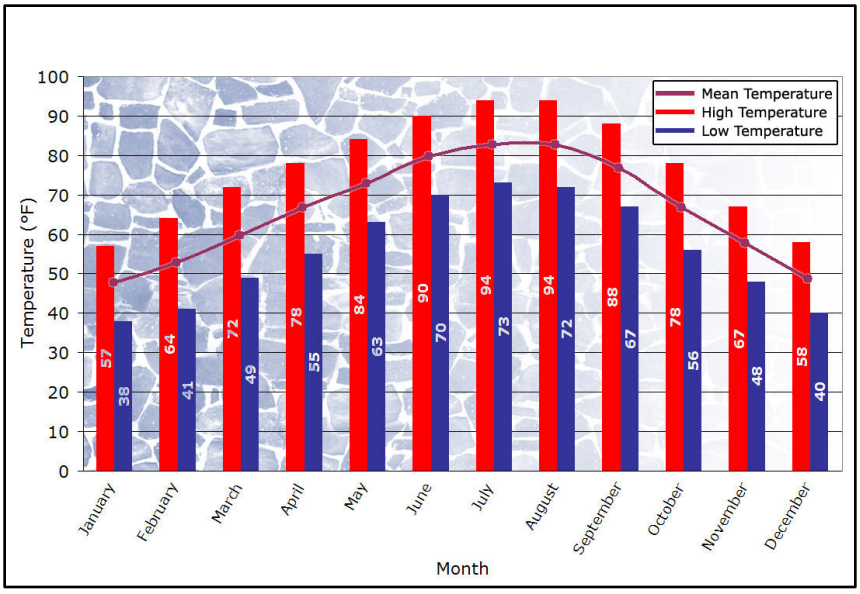


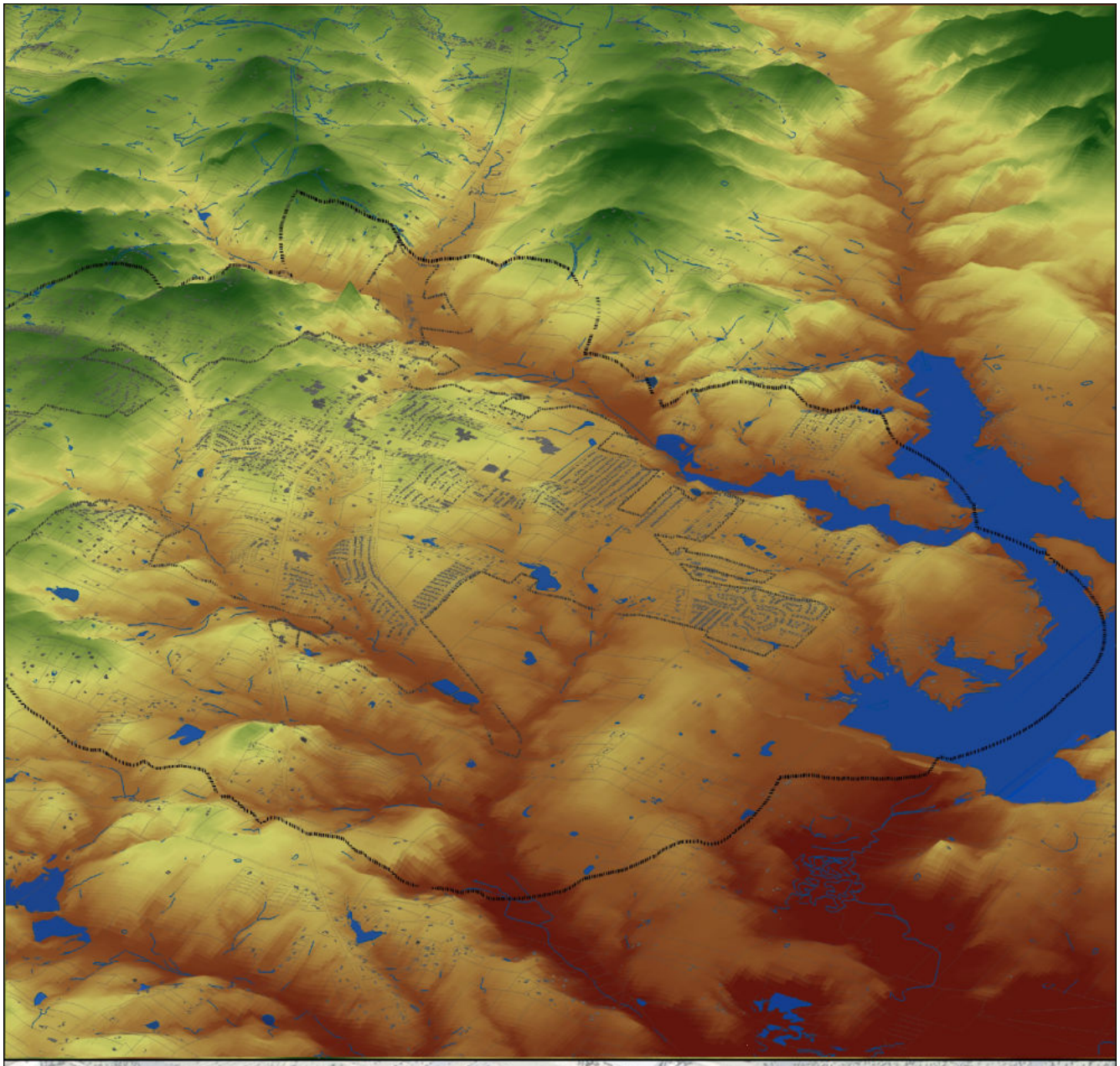
Chart 3.2: High, mean, and low temperature by month in Whitehouse (source: www.weather.com)

Elevation and Topography

General Topography

Much of the land within Whitehouse and its planning jurisdiction rests between 600 and 350 feet above mean sea level. Many small hills and drainage basins are located within the community particularly near Lake Tyler. Other portions of Smith County are significantly higher in elevation.

Map 3.2 represents an exaggerated topography rendering of the Whitehouse study area. The viewing angle "looks" to the northwest toward Tyler, Texas. In general, the terrain slopes to the southeast within the study area. State Highway 110, the community's primary north/south thoroughfare bisects several drainage basins which channel rainwater runoff toward Lake Tyler and other creeks meandering in a generally southerly direction.



Map 3.2: Bird's Eye View Topography

Exaggerated Elevation Model (by a factor of seven)

high : 670 feet

low : 320 feet

Whitehouse City/ETJ Limits

Built Structures

Streams and Creeks

Lakes and Ponds

Perspective rendering has been exaggerated by a factor of seven. View of the render's horizon points toward the northwest and Tyler, Texas. About the background image: The image is an artistic rendering of typical single-family residential homes in Whitehouse. Also pictured is a commercial rose farm located behind the homes.

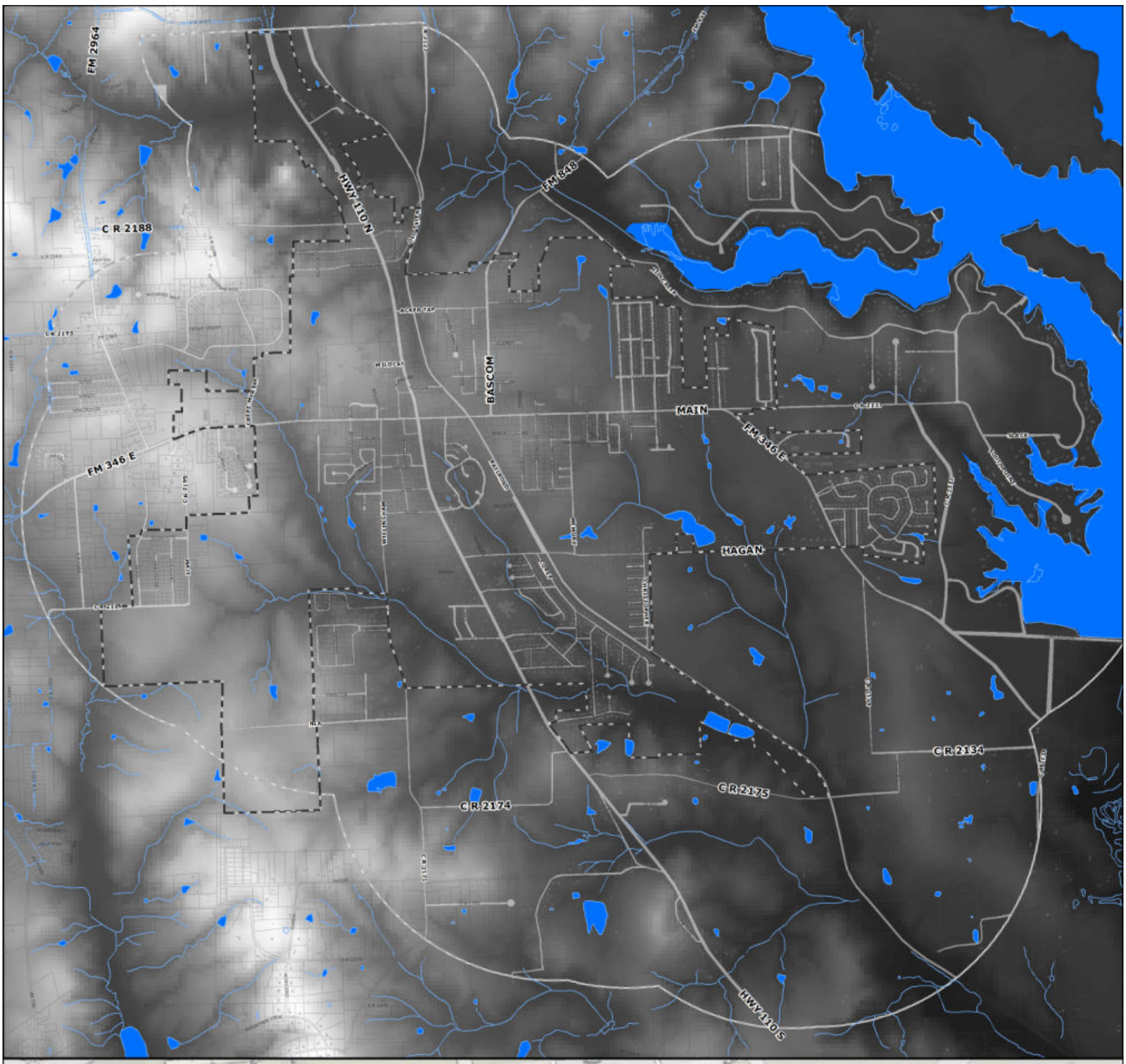
Much of the land within the community that is situated on relatively high ground has already been developed for urban use. Some significant areas of unimproved land with high elevations remain within the community. However due to jurisdictional encroachment by the City of Tyler, the City of Whitehouse may become development locked as much of the land lying to the southeast of the current City Limits is situated on flood prone land. This topography will have a noticeable impact on future land use planning and annexation activities undertaken by the City.

Flooding and elevation concerns will also factor heavily into decisions regarding the location and construction of future thoroughfares. For example, the concepts of an eastern bypass, which will be discussed at length within this study, will be heavily impacted by low-lying land and the Lake Tyler itself.

Flood Zones

Official flood zone maps for Whitehouse and Smith County have not been digitized which limits their inclusion in the spatial analysis software utilized for this Plan. Due to funding limitations this information has not been included within the analysis portions of this Plan to the same extent as other available natural environment data sets. Nevertheless, some portions of the community clearly suffer from high flood potential given their location and elevation (Map 3.3). For the purposes of future land use planning this study has been designed with flooding hazards in mind.

Official flood zone maps are available to City officials in a non-digital format. These maps should be consulted extensively when development is proposed within areas identified as potentially impacted by flooding within this study.



Map 3.3: Water Bodies

Topography (elevation)
high : 670 feet
low : 320 feet
Whitehouse City/ETJ Limits
Built Structures
Streams and Creeks
Lakes and Ponds

City of Whitehouse
Geographic Information System

0 0.5 1 Mi

About the background image: The image is an artistic rendering of Whitehouse High School. The first students to graduate from the facility were the Class of 2001.

Hydrology

Streams and Creeks

The current development of Whitehouse is based on the location of several prominent stream and creek channels (Map 3.3). The Blackhawk Creek system bisects the southwestern quadrant of the community. Other named and unnamed channels will also have potential impacts on future and existing land development.

Lakes and Ponds

The most notable water feature within the Whitehouse study area is Lake Tyler (Map 3.3). Constructed in the late 1940s, the lake is man-made and occupies low land on an established stream channel to the City's east. Lake Tyler and Lake Tyler East (which are connected by an artificial canal) were developed by the City of Tyler in order to provide a stable water source for the City's growth. For the past few decades, the City of Whitehouse has purchased water from the City of Tyler for use as drinking water. The City of Tyler also leases much of the lakefront property to private individuals for residential purposes (Image 3.1). Several smaller ponds and tanks are also found within

Image 3.1: One of two inlets of Lake Tyler which extend into the Whitehouse study area

the City Limits and planning jurisdiction of Whitehouse. Some of these water bodies are as large as 20 acres in size and are in most cases privately owned.

A project is also in progress under the direction of the United States Army Corps of Engineers to construct a new lake south of Whitehouse. The lake is to be named Lake Columbia in honor of the lost NASA shuttle and crew. Though not immediately adjacent to the Whitehouse study area, this new lake is expected to noticeably impact Whitehouse through increased vehicular traffic. Whitehouse also owns a percentage of the water rights as a drinking water source. The lake is expected to reach normal flood levels by 2011 and become fully usable by 2014.

"[Lake Columbia will be filled by] 2011, with a usability date of 2014... we're looking at eight to ten years and Lake Columbia could be a reality."
- Mike Peterson

Vegetation

Image 3.2: Richland Hills, one of many older subdivisions within the community was constructed with the intention of retaining the thick evergreen and deciduous tree mix found naturally within the region.

The community is located within the East Texas Piney Woods. As a result, evergreen and pine trees dominate the area. Other deciduous trees and bushes also thrive within Whitehouse. In many cases well developed tree canopies of both early and late successional trees have been retained within older neighborhoods and occasionally as a component of some new residential development (Image 3.2). Unfortunately, the majority of new construction has resulted in clearing of the land and removal of many mature trees.