

**Appendix B – Traffic  
Forecasting Technical  
Memorandum**

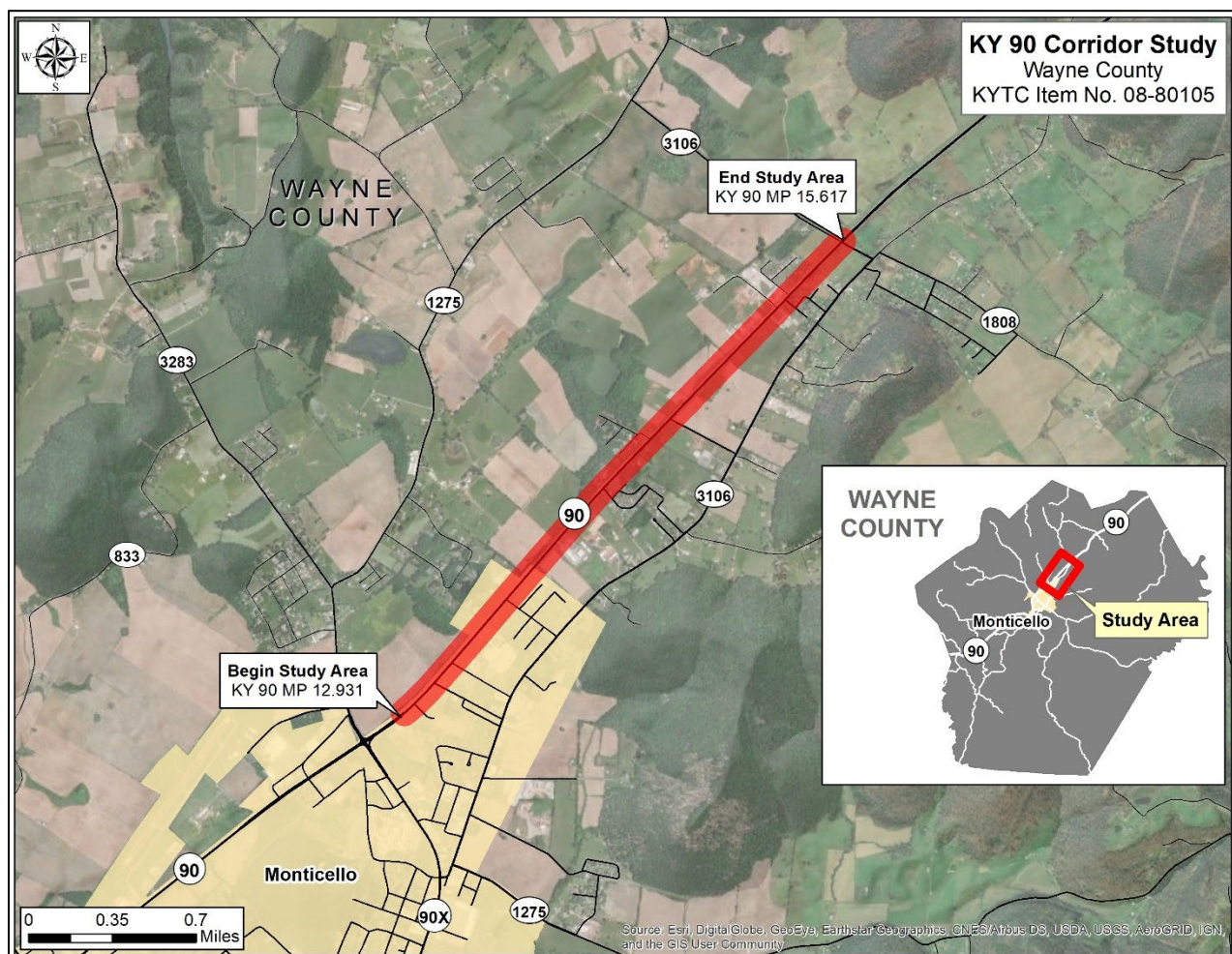
To: David Souleyrette  
 KYTC Division of Planning  
 File: KY 90 Corridor Study

From: Graham Winchester  
 Stantec  
 Date: April 15, 2022

**Reference: KY 90 Corridor Study - Traffic Forecast Technical Memorandum**

## INTRODUCTION

As a part of the *KY 90 Corridor Study* (Item No. 08-80105), Stantec was tasked with developing daily traffic forecasts and peak hour turning movement forecasts within the study area to assist in the evaluation of improvement concepts. Regional population trends and growth rates from the Kentucky Statewide Travel Demand Model version 19 (KYSTMv19) were used to develop the forecasts. **Figure 1** presents the study area, which includes KY 90 between KY 90X and KY 3106 in Wayne County, Kentucky.

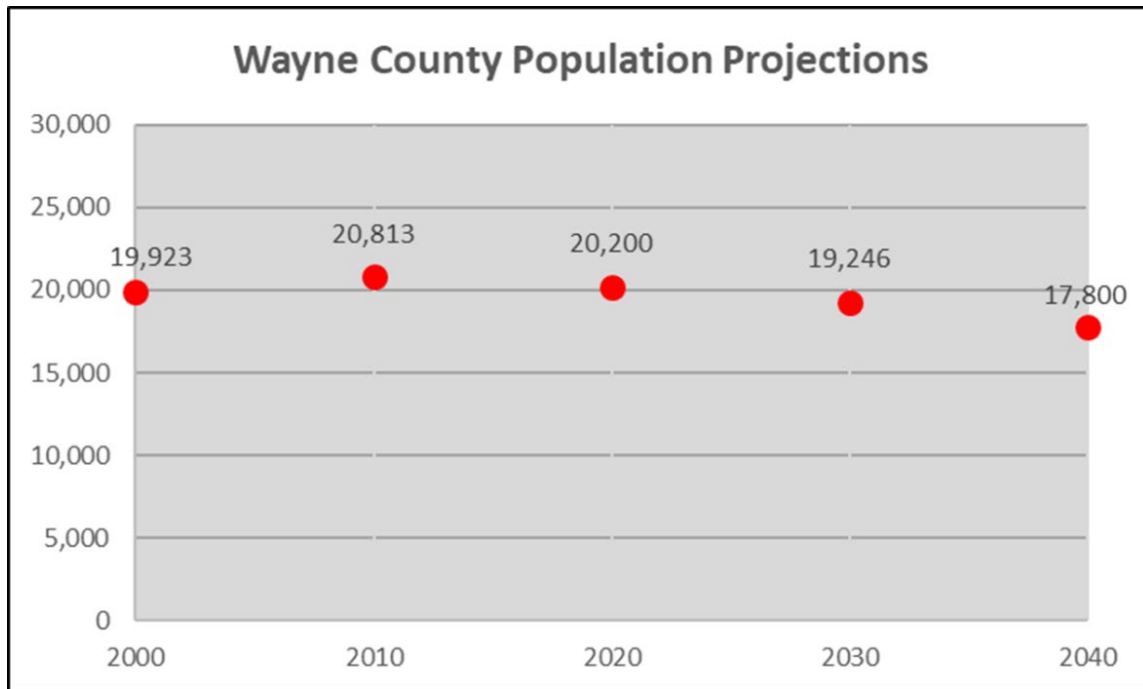


**Figure 1: KY 90 Study Area**

**Reference: KY 90 Corridor Study**

## POPULATION GROWTH

Over the past 20 years, Wayne County has experienced slight population growth of 0.07 percent per year, with 19,923 residents in 2000 growing to 20,200 residents in 2020, as shown in **Figure 2**. However, based on projections from the Kentucky State Data Center, Wayne County is expected to experience slight population decline to 2040, with an annual growth rate of -0.3 percent from 2000 to 2040.



**Figure 2: Wayne County Population Estimates (Source: KY State Data Center)**

## HISTORICAL TRAFFIC VOLUMES

Historical traffic counts from Kentucky Transportation Cabinet (KYTC) count stations indicate that daily traffic volumes on the study portion of KY 90 (station A68) have declined slightly since 2001, with an annual growth rate of -0.7 percent per year. Counts from adjacent routes, KY 90X, KY 3106, and KY 1275, show a similar decline, as shown on **Figure 3** and **Figure 4**.

Reference: KY 90 Corridor Study



Figure 3: KYTC Count Station Map

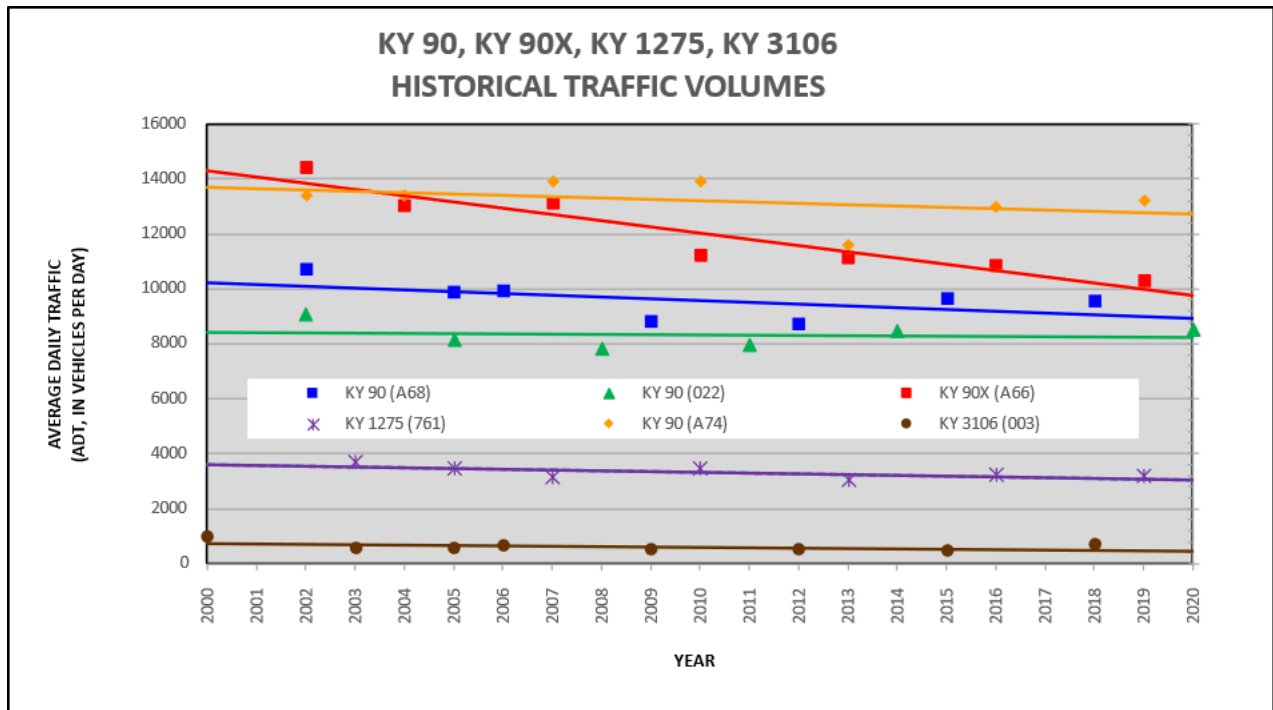


Figure 4: KY 90 Historical Traffic Volumes

### KYSTM GROWTH RATES

KYTC provided an updated version of the Kentucky Statewide Travel Demand Model (KYSTMv19) with a base year 2019. The updated base year model was run, and daily network assignments were compared to future-year (2040) daily network assignments for each link. Annual growth rates were calculated for each link on KY 90, as shown in **Figure 5**, and range from 0.2 – 0.3 percent per year.

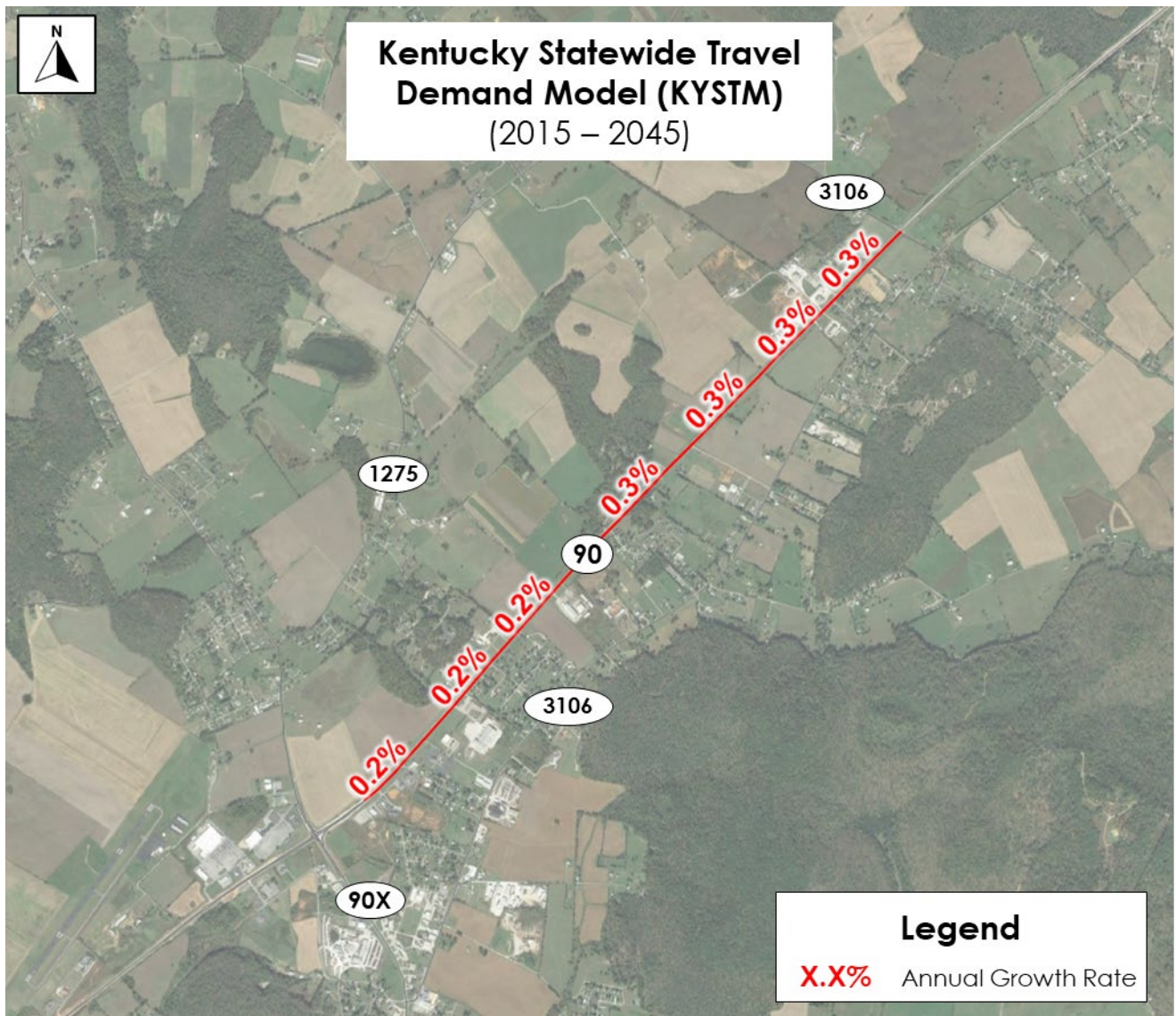


Figure 5: KYSTM Growth Rates

**Reference:** KY 90 Corridor Study

## **ANNUAL GROWTH RATE**

Based on Wayne County population projections from the KY State Data Center, historical KYTC traffic counts, and KYSTM growth rates, an annual rate of 0.3 percent per year was used for this forecast.

## **2021 DAILY TRAFFIC ESTIMATES**

The annual growth rate of 0.3 percent per year was applied to the latest KYTC traffic counts in the study area to develop 2021 daily traffic estimates as shown in **Figure 6**.

## **2045 DAILY TRAFFIC FORECASTS**

The annual growth rate of 0.3 percent per year was applied to the 2021 daily traffic estimates to develop 2045 daily traffic forecasts, as shown in **Figure 7**.

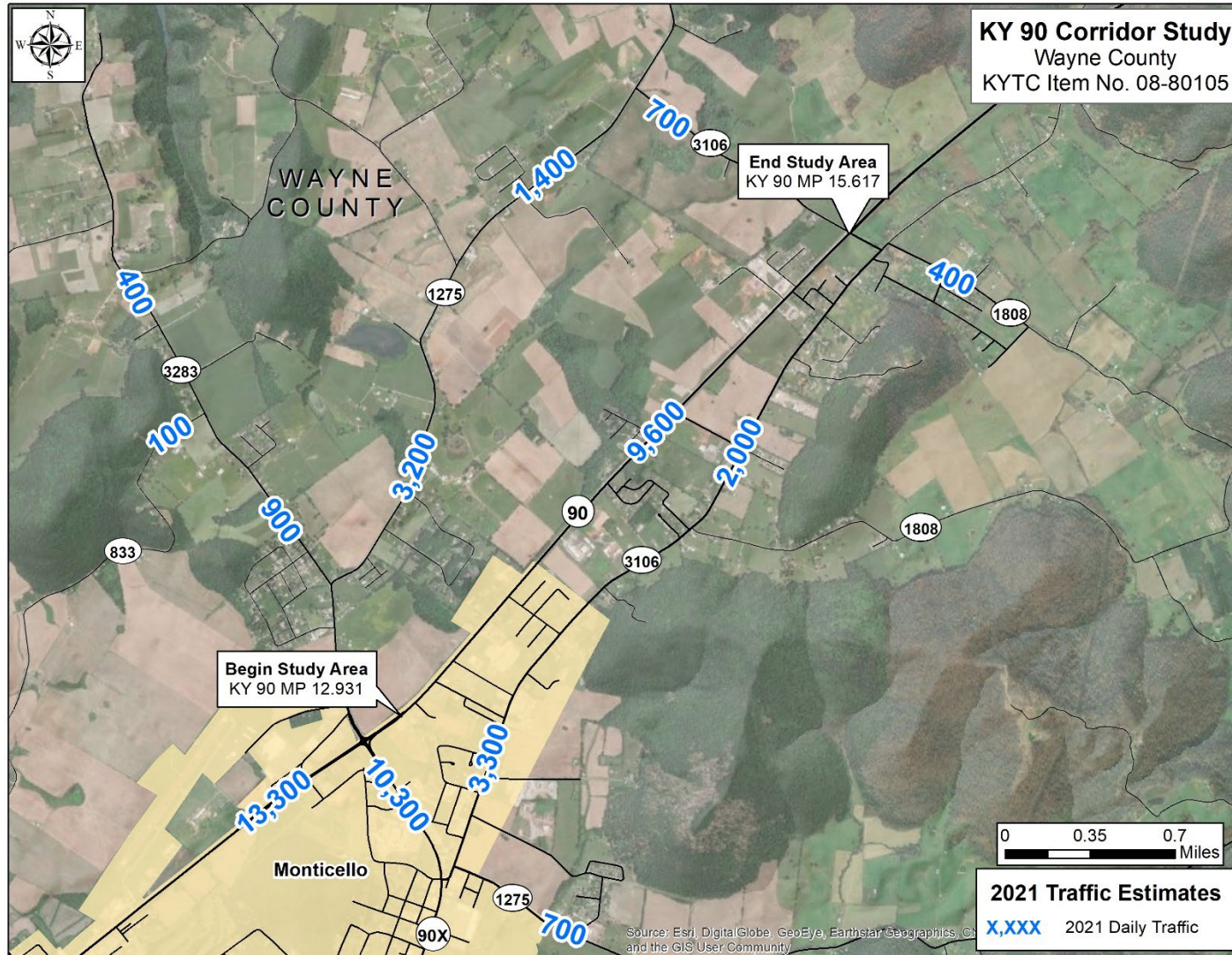


Figure 6: 2021 Daily Traffic Estimates

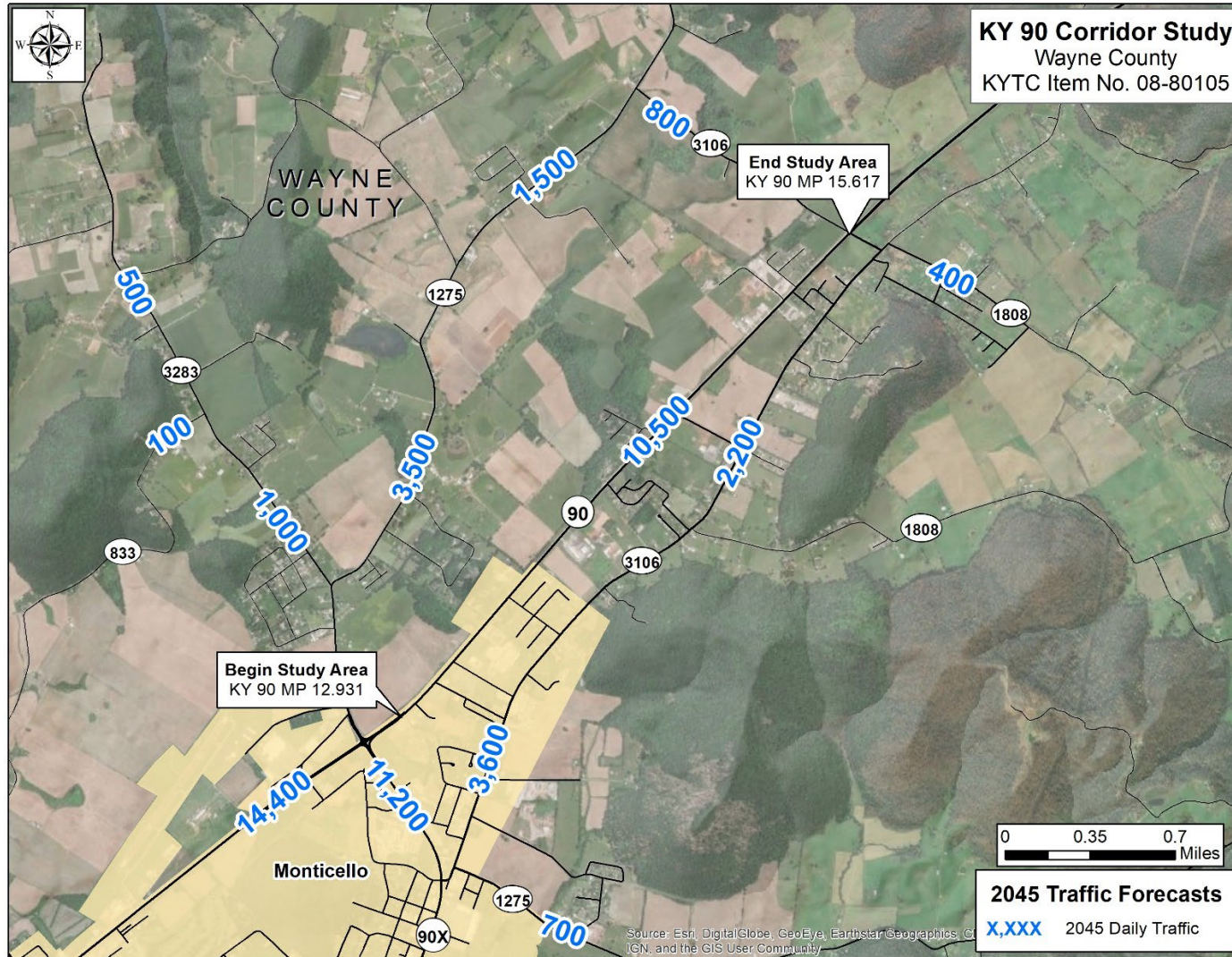


Figure 7: 2045 Daily Traffic Forecasts



**Reference:** KY 90 Corridor Study

## **2045 PEAK HOUR TURNING MOVEMENT FORECASTS**

The annual growth rate of 0.3 percent per year was applied to 2021 peak hour turning movement counts to develop 2045 peak hour turning movement forecasts, as shown in **Figure 8** and **Figure 9**.

## **NEXT STEPS**

The next steps are for Stantec to analyze the 2045 No-Build peak hour turning movement forecasts using the Highway Capacity Software (HCS) and to develop improvement concepts.

## **STANTEC CONSULTING SERVICES INC.**



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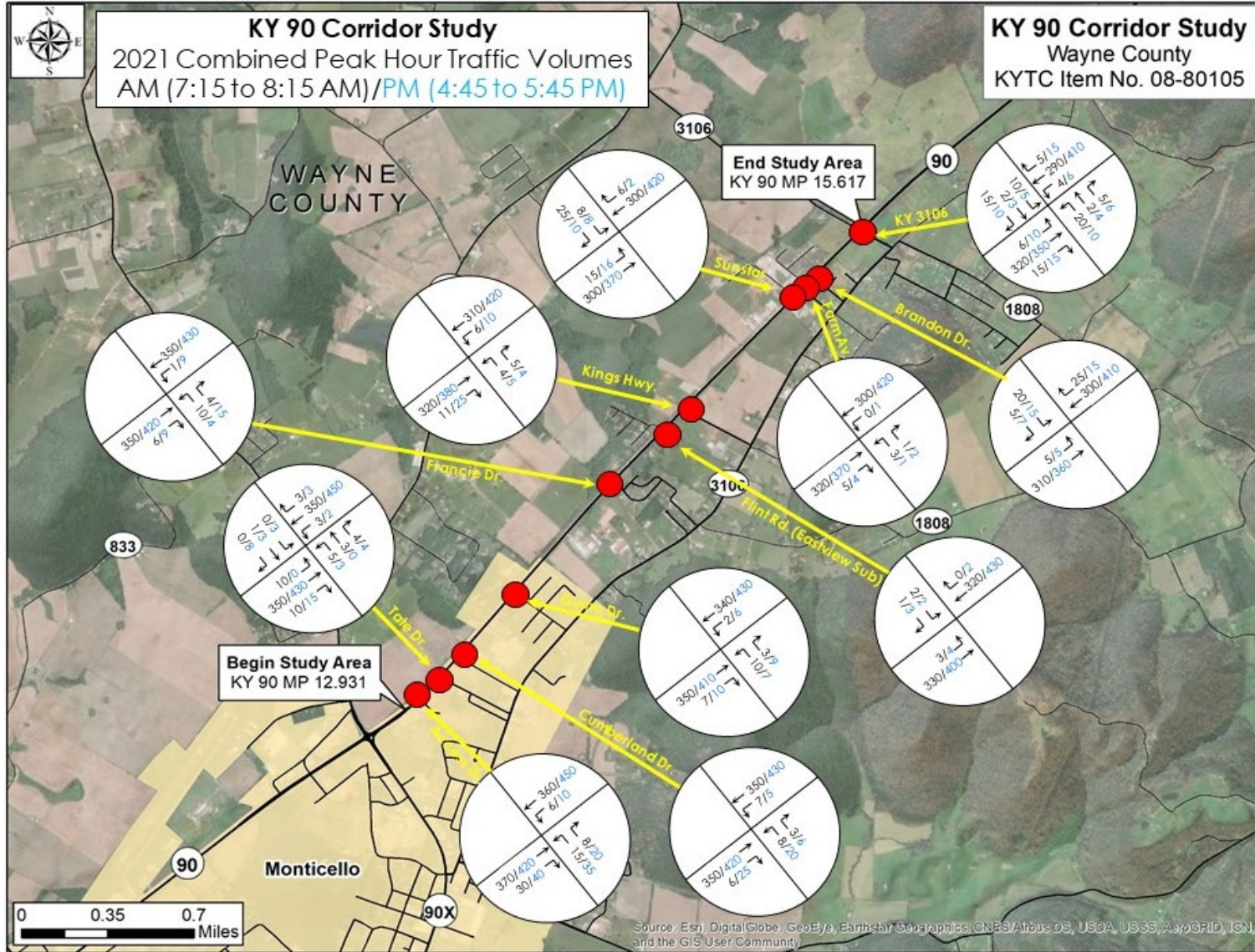


Figure 8: 2021 Peak Hour Turning Movement Counts

