

July 1, 2020

Received by
City of Grove City
06-30-20

Ms. Kim Shields

The City of Grove City
4035 Broadway
Grove City, OH 43123

Re: The Quarry at Pinnacle Traffic Study

Dear Ms. Shields,

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained to perform a traffic impact study for White Road and Jackson Pike in Grove City, Ohio. Kimley-Horn has been working with the Grove City Public Services Department, the Grove City Development Services Department and the Ohio Department of Transportation (ODOT) regarding the proposed Quarry at Pinnacle single-family residential development. Kimley-Horn has attended meetings with these departments to discuss the scope of the traffic study, the status of a safety improvement project currently under design by ODOT at White Road and Jackson Pike and the status of other proposed developments in the area.

At the request of the project stakeholders, Kimley-Horn analyzed the signal warrants for the intersection of White Road and Jackson Pike. Background traffic counts were obtained, and growth rates applied, and trip projected for the proposed subdivision to derive volumes at the intersection. Kimley-Horn determined that proposed traffic volumes will not meet the warrants for a traffic signal. Kimley-Horn submitted this data to ODOT for review.

Upon approval of traffic volume data, Kimley-Horn will analyze the proposed site access points. Kimley-Horn assumes that traffic volumes will warrant a northbound left turn lane on Jackson Pike at the access point and a westbound left turn lane on White Road at the site access point. Kimley-Horn will show these improvements on the Final Development Plan and will continue working with Grove City and ODOT to complete the traffic study. The current traffic analysis is attached for reference.

Please do not hesitate to contact us with any additional questions.

Sincerely,

Kimley-Horn and Associates, Inc.



Michael C Reeves, P.E.
Associate



Dean M. Antony, P.E.
Project Manager

MEMORANDUM

To: Andrew Hurst, ODOT District 6
Kevin Koesters, P.E., City of Grove City

From: Perry Morgan, P.E.
Kimley-Horn

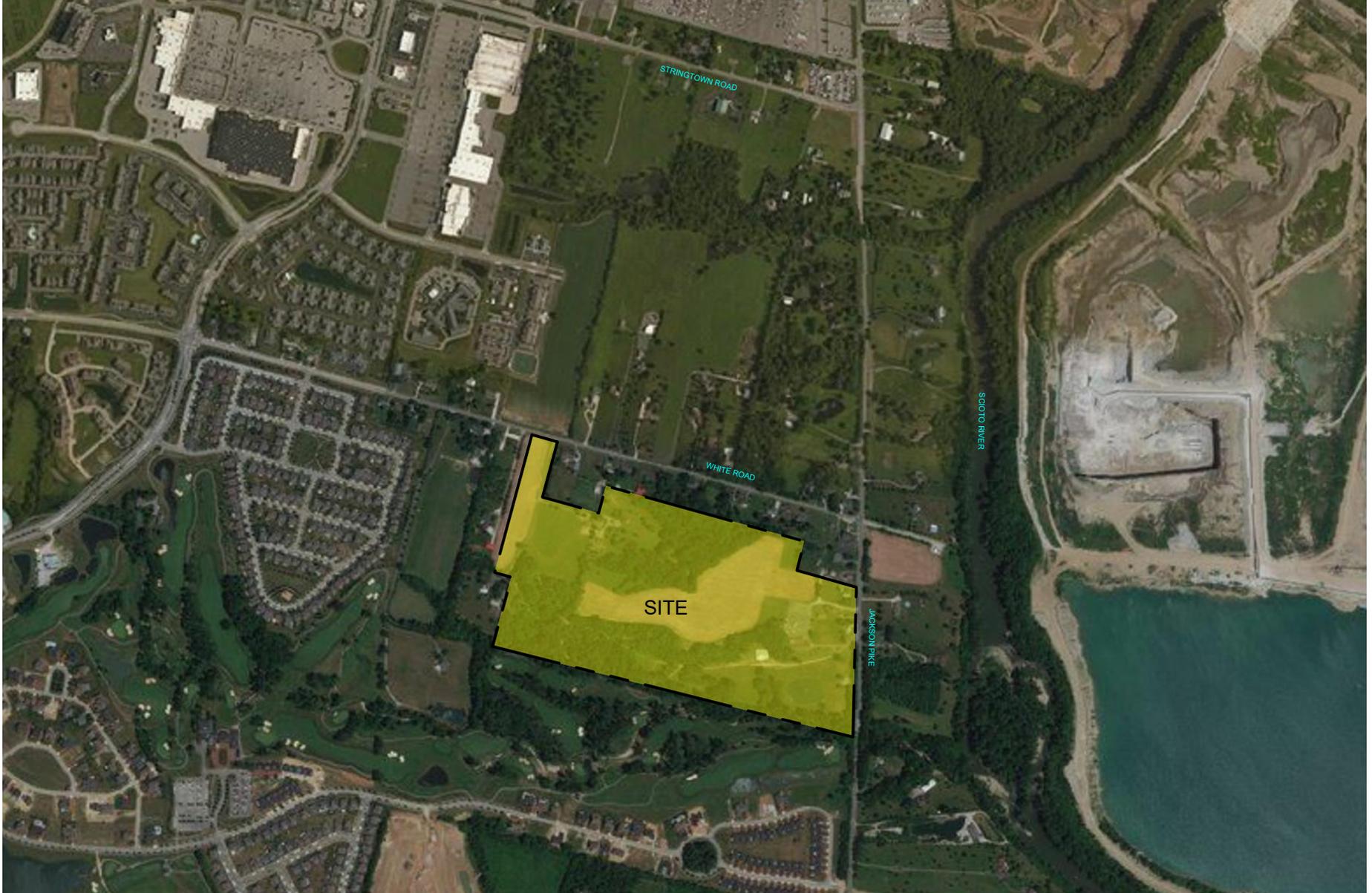
Date: May 11, 2020

Subject: Traffic Study – White Road and Jackson Pike

INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained to perform a traffic impact study for White Road and Jackson Pike in Grove City, Ohio. The site is located just west of the Scioto River and south of Stringtown Road. The proposed development will be accessed via two drives, one on the south of White Road to the east of The Landings subdivision and the other on the west of Jackson Pike to the south of Jackson Chapel Methodist Church. The subject site and surrounding roadway network are presented in **Exhibit 1**.

This memo presents the existing traffic counts, site trip generation and distribution, and projected traffic volumes.



EXISTING CONDITIONS

The subject site is located west of the Scioto River and south of Stringtown Road in Grove City, Ohio. The proposed development will replace existing farmland. The immediate site vicinity generally consists of single-family homes.

White Road is a two-lane collector roadway generally running east-west in the site vicinity. White Road has a posted speed limit of 45 miles per hour and terminates to the east at Jackson Pike. Jackson Pike is a two-lane arterial state route generally running north-south in the site vicinity with a speed limit of 55 miles per hour. Access to the proposed development will be provided via two full-access driveways, one on the south side of White Road to the east of The Landings subdivision and the other on the west side of Jackson Pike to the south of Jackson Chapel United Methodist. The study area for this analysis includes the intersection of White Road and Jackson Pike.

Existing Traffic Volumes

Traffic volumes quantifying current levels of auto activity within the study area were derived from counts collected on March 12, 2020. A copy of the traffic count is in the **Appendix**. The intersection was analyzed during a 12-hour period from 6:00 AM to 6:00 PM and the AM and PM peak hours were identified (7:00 AM to 8:00 AM and 4:45 PM to 5:45 PM). The existing traffic counts for these two periods are summarized in **Exhibits 2-3**.

TRAFFIC VOLUME DEVELOPMENT

Trip Generation

The trip generation data for the proposed development is based on the ITE Trip Generation Manual, 10th Edition. The traffic generation potential of the proposed development during the analysis period (7:00 AM to 8:00 AM and 4:45 PM to 5:45 PM) was based on the following:

- At the completion of the proposed development, there will be 220 single-family homes, expected to yield approximately 2,148 total daily trips.
- **Table 1** summarizes a typical trip generation for the single-family development with 220 homes.

Table 1. Trip Generation for Proposed Single Family Development (220 dwelling units)

Land Use	Intensity	Daily			AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out	Total	In	Out
<i>Residential</i>	<i>220</i>	<i>2,148</i>	<i>1,074</i>	<i>1,074</i>	<i>161</i>	<i>40</i>	<i>121</i>	<i>217</i>	<i>137</i>	<i>80</i>

Directional Distribution

The site generated traffic distribution for the proposed development was based on existing traffic volumes, prevailing land uses, and population densities in the area. **Table 2** summarizes the estimated trip distribution.

Table 2. Estimated Trip Distribution

To/From	Portion of Site Traffic
North on Jackson Pike	70%
South on Jackson Pike	15%
East on White Road	15%

Other Planned Developments

The Sugar Maple Commons and the Farmstead residential subdivision are two developments that are planned along SR-104 south of the proposed development. Traffic volumes, as outlined in the *Sugar Maple Commons Traffic Access Study (November 2019)* and the *Farmstead Traffic Impact Study (September 2018)*, have been added as background traffic on SR-104. This includes 88 northbound trips and 32 southbound trips in the AM period, and 59 northbound trips and 99 southbound trips in the PM period.

Expected Growth Traffic Assignment

As development in Grove City, Ohio increases over the next 20 years, the expected vehicular volume is anticipated to increase as well. Based on the annual average growth of 1.00% experienced in Franklin County, a growth factor of 1.22 for the 20-year period was calculated and applied to the current vehicular volume to grow the current vehicular volumes represent the expected traffic at the existing intersections in 2040. The calculated vehicular volumes for the study area in 2040 are illustrated in **Exhibits 4-5**.

Site Traffic Assignment

The site traffic assignment, representing traffic volumes associated with the proposed development at the study intersections, are a function of the estimated trip generation and the directional distribution (**Table 2**). The site traffic assignment for the peak hours of site generated traffic at the completion of the single-family development (7:00 AM to 8:00 AM and 4:45 PM to 5:45 PM) is summarized in **Exhibits 6-7**.

Total Traffic Assignment

The total traffic assignment represents future anticipated traffic volumes at the study intersections upon construction of the proposed development. The total traffic assignment consists of the existing traffic plus the projected site traffic assignment for the development. The total traffic volumes for the study area are projected for 2020 and 2040. The total traffic volumes for the study area are illustrated in **Exhibits 8-11**.



