Memo

Date:	Wednesday, November 07, 2018
Project:	Steiner Ranch HOA Traffic Study
To:	Steiner Ranch Homeowner's Association
From:	Kathy Smith, P.E., PTOE, HDR
Subject:	Speed Study Results

The Steiner Ranch Homeowner's Association (HOA) has requested that HDR evaluate speeding and traffic operations along University Club Drive in Austin, Texas. This memo summarizes the existing operations and provides recommendations for roadway safety improvements.

Study Location

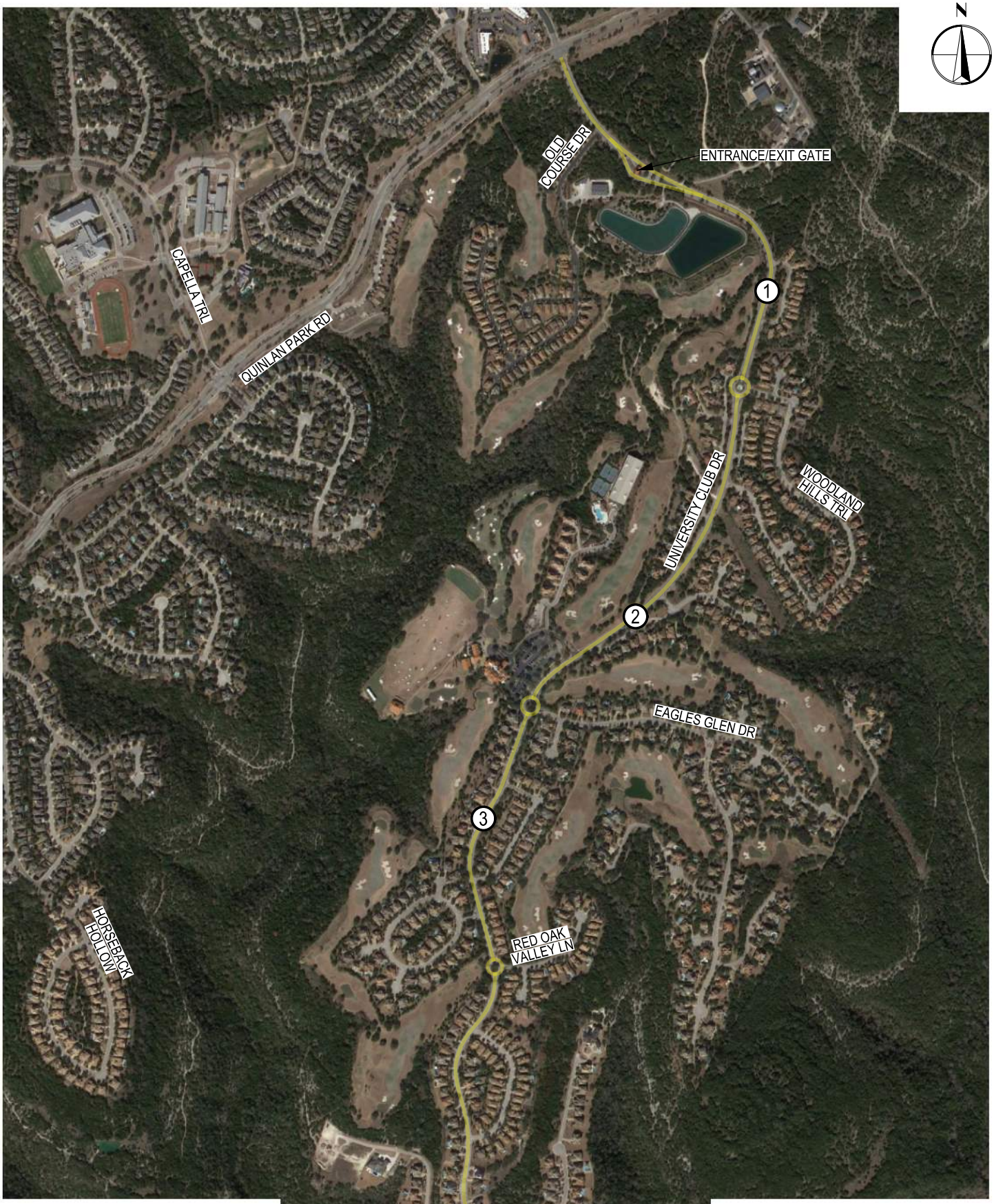
University Club Drive is located off Quinlan Park Road within a gated residential neighborhood in Austin, Texas, as shown in Figure 1. The roadway is undivided and lined by single family homes on both sides with a paved width of approximately 40' within the study area.

Speed data was collected along the roadway over a period of 48 hours, from Tuesday, September 18th, 2018, to Wednesday, September 19th, 2018. The data was collected with the use of roadway tubes at three locations on the roadway, as shown in Figure 1 and listed below:

- Site 1 - University Club Drive, between Quinlan Park Road and Woodlands Hill Trail
- Site 2 - University Club Drive, between Woodlands Hill Trail and Eagles Glen Drive
- Site 3 - University Club Drive, between Eagles Glen Drive and Red Oak Valley Lane

Speed Study Results

The posted speed limit on University Club Drive, between Quinlan Park Road and Woodlands Hill Trail, is 35 miles per hour (mph). The 48-hour speed distribution for this portion of the roadway is provided in Figure 2. As shown in Figure 2, 10 percent of northbound vehicles drove above 35 mph, and 37 percent of southbound vehicles drove above 35 mph.



LEGEND

(X) = SITE NUMBER

Background Map Copyrighted by Google, 2018

FIGURE 1

STUDY LOCATION MAP

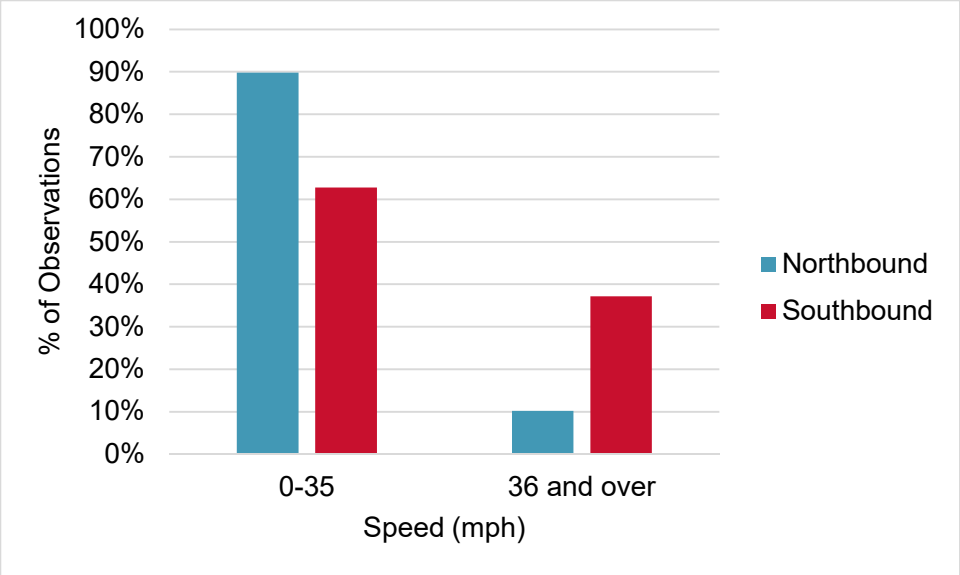


Figure 2: 48-Hour Speed Distribution
Site 1—between Quinlan Park Road and Woodlands Hill Trail

The posted speed limit on University Club Drive, between Woodlands Hill Trail and Eagles Glen Drive, is 35 mph. The 48-hour speed distribution for this segment of the roadway is provided in Figure 3. As shown in Figure 3, 36 percent of northbound vehicles drove above 35 mph, and 71 percent of southbound vehicles drove above 35 mph.

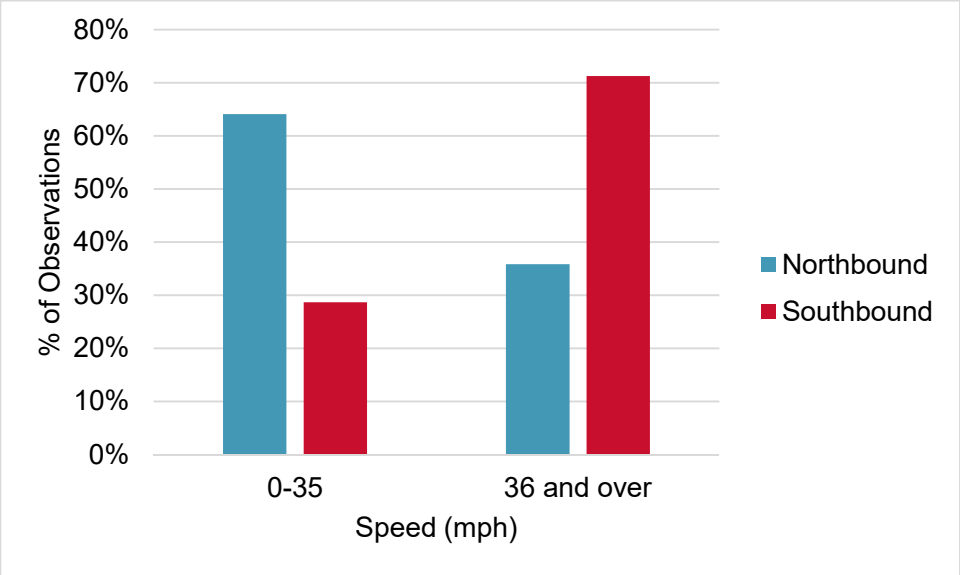


Figure 3: 48-Hour Speed Distribution
Site 2 – between Woodlands Hill Trail and Eagles Glen Drive

The posted speed limit on University Club Drive, between Eagles Glen Drive and Red Oak Valley Lane, is 30 mph. The 48-hour speed distribution for this portion of the roadway is

provided in Figure 4. As shown in Figure 4, 36 percent of northbound vehicles drove over 30 mph, and 45 percent of southbound vehicles drove over 30 mph.

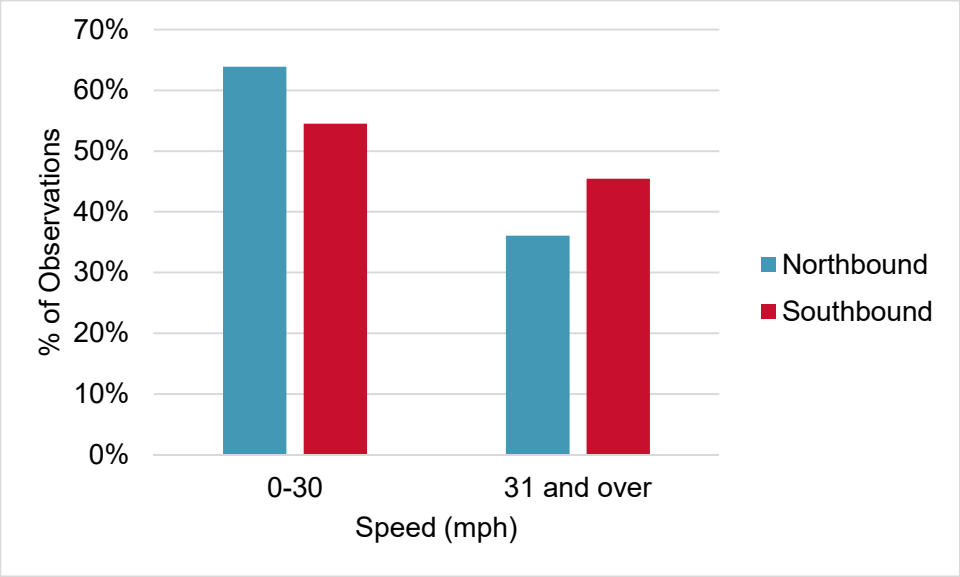


Figure 4: 48-Hour Speed Distribution
Site 3 – between Eagles Glen Drive and Red Oak Valley Lane

A speed study results summary for the study locations on University Club Drive is provided in Table 1.

Table 1: Speed Study Summary

Location	Speed Limit (mph)	Vehicles above Speed Limit (%)	
		Northbound	Southbound
Site 1	35	10%	37%
Site 2	35	36%	71%
Site 3	30	36%	45%

From the analysis results, the highest percentage of speeding vehicles on University Club Drive were observed at Site 2, between Woodlands Hill Trail and Eagles Glen Drive. Speeding is also more prevalent for southbound traffic compared to northbound traffic.

Re-evaluating the speed limit using the Texas Department of Transportation's (TxDOT) guidance for establishing speed zones is not recommended for the roadway. Traffic calming measures are recommended on University Club Drive to decrease speeding over the posted speed limit, as summarized below.

Traffic Calming

Option 1

One option that is available for traffic calming that also encourages pedestrian connectivity is the installation of speed tables or pinch-points on University Club Drive. Speed tables, shown as Detail A on Figure 5, reduce traffic speeds by raising the wheelbase of a vehicle, and also provide a flat-top for pedestrians to cross the roadway. Pinch-points, shown as Detail B on Figure 5, are mid-block curb extensions that reduce travel speeds due to the reduction in lane width. Pinch-points can also facilitate midblock pedestrian crossings. Based on the speed study data, speed tables or pinch-points could be placed near Sites 2 and 3, and their recommended locations are shown in Figure 5.

Option 2

Reducing the travel lane widths can reduce traffic speeds; therefore, another traffic calming option is installing pavement markings along University Club Drive to reduce the travel lane widths. The current roadway width of University Club Drive is 40 feet. Striping for protected bike lanes (7 feet per side) and double yellow lines (1 foot) will leave approximately 12.5-foot travel lanes on each side, as shown in Figure 6.

Option 3

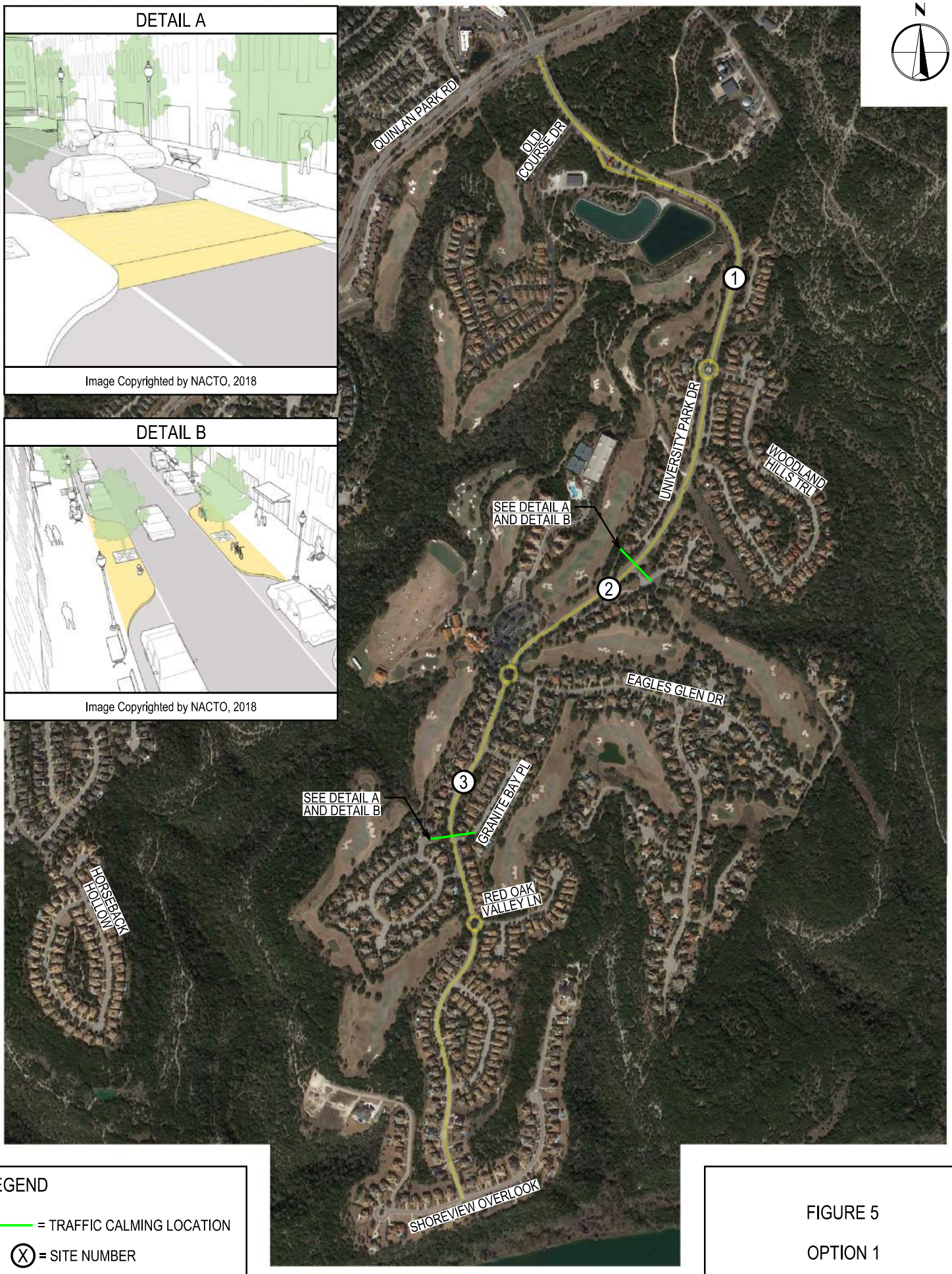
An alternative traffic calming option are the installation of speed cushions or chicanes. Speed cushions, shown as Detail A in Figure 7, operate similar to speed tables except they include wheel cutouts to allow large vehicles to pass unaffected. Chicanes, shown as Detail B in Figure 7, are mid-block curb extensions that reduce travel speeds by creating a slight bend in the roadway. Based on the speed study data, chicanes and speed cushions could be placed near Sites 2 and 3, and their recommended locations are shown in Figure 7.

DETAIL A

Image Copyrighted by NACTO, 2018

DETAIL B

Image Copyrighted by NACTO, 2018



LEGEND

= TRAFFIC CALMING LOCATION

(X) = SITE NUMBER

Background Map Copyrighted by Google, 2018

FIGURE 5

OPTION 1

PROPOSED CROSS-SECTION

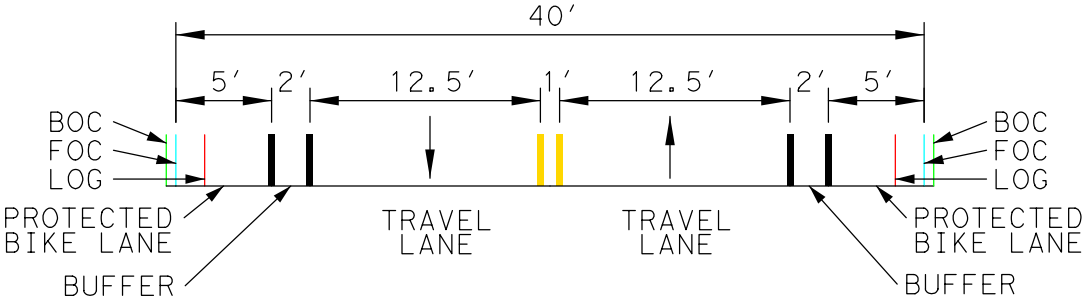


FIGURE 6

OPTION 2
PROPOSED CROSS SECTION

DETAIL A

DETAIL B

LEGEND

= TRAFFIC CALMING LOCATION

(X) = SITE NUMBER

FIGURE 7

OPTION 3

Summary

Based on the speed study data, Sites 2 and 3 had significant percentages of drivers traveling at speeds in excess of the posted speed limit. Due to University Club Drive functioning as a neighborhood collector, the re-evaluation of the speed limit was not recommended. Therefore, multiple traffic calming measures were considered including speed tables, travel lane width reduction, etc. The identified traffic calming measures can be implemented on their own or in conjunction with each other to reduce traffic speeds.