



May 28, 2021

Ms. Kelly Nelson
Pikes Peak Investments LLC
c/o The Equity Group
90 South Cascade Avenue
Suite 1500
Colorado Springs, Colorado 80903

Re: Meadowbrook Park Traffic Study Letter
El Paso County, Colorado

Dear Ms. Nelson:

This traffic study letter has been prepared for a proposed residential development, Meadowbrook Park, to be located north of Newt Drive between Meadowbrook Parkway and US-24 in El Paso County, Colorado. This letter is an addendum to the *Crossroads-Meadowbrook-Reagan Ranch Master Traffic Impact Study* (MTIS) completed by Kimley-Horn and Associates in April 2021. This supplement to the MTIS is to provide a site-specific analysis addressing comments from master traffic impact study for the Meadowbrook Park. For the purposes of this analysis, full buildout of Meadowbrook Park is expected to include 67 single family residences using private internal roads. A conceptual site plan of the project is attached.

A vicinity map illustrating the location of the property is attached as **Figure 1**. The surrounding area primarily consists of vacant land, industrial uses, and residential use. The existing site is comprised of undeveloped land while residential and industrial uses are located north and northeast of the project site, respectively. The site area is shown in the aerial of attached **Figure 2**.

The purpose of this study is to identify project traffic generation characteristics and to develop an internal roadway circulation plan for the project based on daily traffic volumes projections, as well as to address comments specific to Meadowbrook Park from the MTIS. The existing private driveway along Meadowbrook Parkway with access to the Circle K gas station development and the proposed private access intersection of Spatium View and Meadowbrook Parkway were evaluated. A shared access easement with the Circle K driveway along Meadowbrook Parkway is being proposed as part of this project. This shared access would connect with the internal local streets of Meadowbrook Parkway.

As requested by El Paso County, it should be noted that all known development traffic studies have been included in this study in the last five years and this includes the *Crossroads-Meadowbrook-Reagan Ranch Master Traffic Impact Study* (MTIS) completed by Kimley-Horn and Associates in April 2021. Applicable documents from this master traffic impact study are attached.

Existing Roadway Network

Regional access to the project is provided by Interstate 25 (I-25) and US-24 while primary access to the project will be provided by Meadowbrook Parkway, State Highway 94 (SH-94), and Newt Drive. Direct access will be provided by two private accesses located along the south side of Meadowbrook Parkway.

Meadowbrook Parkway is an El Paso County Urban Non-Residential Collector roadway that provides one lane of travel in each direction with a 35 mile per hour speed limit through the study area. Newt Drive extends northwest and southeast with one through lane of travel in each direction.

Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. Project generated traffic volumes are identified on a weekday daily as well as on a morning peak hour and afternoon peak hour basis. The morning peak hour is the highest one-hour time period of adjacent street traffic during four consecutive 15-minute intervals during the morning peak hour, between 7:00 am and 9:00 am. The afternoon peak hour is the highest one-hour time period of four consecutive 15-minute intervals between the hours of 4:00 pm and 6:00 pm representing the afternoon peak hour.

For this study, Kimley-Horn used the ITE Trip Generation Manual fitted curve equations that apply to Single-Family Detached Housing (ITE 210) for traffic associated with the Meadowbrook Park development.

Meadowbrook Park is expected to generate approximately 720 daily weekday trips with 52 of these trips occurring during the morning peak hour and 69 trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE Trip Generation Manual, 10th Edition – Volume 1: User’s Guide and Handbook, 2017. **Table 1** provides the estimated trip generation for the project with calculation worksheets attached.

Table 1 – Meadowbrook Parkway Project Traffic Generation

Use	Quantity	Daily	Weekday Vehicle Trips					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Meadowbrook Park								
Single Family Housing (ITE 210)	67 Units	720	13	39	52	43	26	69

Project Access Spacing Requirements and Internal Roadway Classifications

The existing west private street access along Meadowbrook Parkway provides full turning movements for the Circle K development. The project is proposing a shared access easement with the existing access to the Circle K gas station along Meadowbrook Parkway. This west access along Meadowbrook Parkway is currently located approximately 250 feet

Responses 07.20.2021:
All roadway classifications were updated within the report and figures to show all internal roadways as Urban Local Low Volume roadways with the exception of Spatium View which will be a Urban Local roadway.

northeast of the Newt Drive intersection of Spatium View and is located approximately 500 feet west of Meadowbrook Parkway

The intersection offsets surrounding the proposed access intersection of Spatium View and Meadowbrook Parkway meets the El Paso County spacing standards of 330 feet along collector roadways with access to local streets.

As the project is only anticipated to generate 720 daily vehicle trips and the internal streets to the project will not have any cut through traffic, all internal streets to the project meet El Paso County average daily traffic threshold standard of 3,000 vehicles per day for an Urban Local street.

All roadways proposed with the exception of Spatium View have a paved cross section that is less than the County urban local low volume roadway. The report should also compare the proposed roadways to the County Urban local low volume(threshold of 300 ADT) as all roadways except Spatium are most like this standard cross section. Per figure 3 it appears that the roadways (except spatium view) meet the 300 ADT threshold of the Urban local low volume. This should be stated in the text.

500 vehicles



303 228 2300

Please also indicate whether Circle K access point will operate acceptably (LOS D) with the added traffic of this development. Is the intent for the Circle K access/Solum Grove access to have a gate for emergency access only as inferred in the Cimarron Hills Fire Department letter attached to the deviation request form? Please address.

Please revise as Spatium View is a roadway. Alternatively, this may be indicated as "access".

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Driveway was changed to Spatium View.

Based on further coordination with the City and the project team, the Circle K access will operate as an emergency access and will be gated; therefore, was not included for evaluation. The traffic impact study was updated accordingly.

Figure 3 illustrates the circulation plan and street classification map for roadways internal to Meadowbrook Park

Additional Analysis, and Turn Lane Requirements
Meadowbrook Parkway will align with Preble project access will be provided from an existing two-way

left turn lane along Meadowbrook Parkway. The westbound exiting approach of this driveway should provide stop control with installation of a R1-1 "STOP" sign. It is recommended that the existing access to Circle K along Meadowbrook Parkway remain with same lane configurations and stop control. Based on the original master traffic impact study, all movements at the intersection of Spatium View and Meadowbrook Parkway are expected to operate acceptably during the peak hours throughout the 2040 horizon. Applicable documents from the master traffic impact study including intersection operational outputs, traffic volume projections, and recommended lane configurations and control are attached.

Please indicate whether or not the length of the existing two way left turn lane is sufficient for each of the access points and whether auxiliary left turn lanes are required per criteria at the access points.

The El Paso County ECM was used to determine if a right turn lane is warranted along Meadowbrook Parkway at the project access. El Paso County classifies Meadowbrook Parkway as an Urban Non-Residential Collector. According to El Paso County ECM guidelines for Minor Arterials and Lower Classifications, a right turn lane is required for any access with a projected peak hour right turning volume of 50 vehicles per hour or greater.

Based on further coordination with the City and the project team, the Circle K access will operate as an emergency access. The traffic impact study was updated accordingly. Vehicles will be accommodated within the existing two-way left turn lane for southbound left turn movements at the Spatium View and Meadowbrook Parkway intersection.

Based on 2040 traffic volume projections, Spatium View and Meadowbrook Parkway are a

- A northeastbound right turn lane is required along Meadowbrook Parkway based on projected 2040 total traffic volumes being 30 northbound right turns during the peak hour and the threshold being 50 vehicles per hour. It should be noted that the master traffic study conservatively did not evaluate the Circle K driveway access and these 30 northbound turn movements are expected to be less when some traffic is distributed to second access location.

Sight Distance Evaluation

It is recommended that appropriate sight distance triangles be provided at the future access intersection of Spatium View and Meadowbrook Parkway to give drivers exiting the development areas a clear view of oncoming traffic. Landscaping and objects within sight triangles must not obstruct drivers' views of the adjacent travel lanes. Intersection sight distances for left turn from stop and right turn from stop were analyzed for the proposed project access along Meadowbrook Parkway.

With El Paso County standards and a design speed of 40 miles per hour along Meadowbrook Parkway, the intersection sight distance for a vehicle turning from stop is 445 feet. Therefore, all obstructions for turning vehicles from stop should be clear to the right and left within the triangle created with a vertex point located 13 feet (10 feet from local roads) from the edge of the major road traveled way (typical position of the minor road driver's eye when stopped) and a line of sight distance of 445 feet located in the middle of the northeastbound and southwestbound through lanes along Meadowbrook Parkway. It is believed that the project access is appropriately located to provide the necessary sight distance needed but verification should be provided with sight distance triangles incorporated within the design plans.

Conclusions and Recommendations

In summary, this traffic study provides project traffic generation estimates to identify potential project traffic related impacts on the local street system with the proposed Meadowbrook Park project. Based on the analysis presented in this study, Kimley-Horn believes the proposed Meadowbrook Park development will be successfully incorporated into the existing and future roadway network. It is not



A deviation request for the proposed private roadways not meeting ECM standards has been submitted. Please revise the text accordingly.

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The report has been updated with the deviation request for the change in ROW.

anticipated that any deviations from El Paso County ECM criteria will be needed with development of Meadowbrook Park. El Paso County road impact fees will be coordinated with the County through the development process; however, it should be noted that reimbursement may not be available for certain improvements.

The intersection offsets surrounding the proposed access intersection of Spatium View and Meadowbrook Parkway meets the El Paso County spacing standards of 330 feet along collector roadways with access to local streets.

The future access intersection of Spatium View and Meadowbrook Parkway will align with Preble Drive. Left turn movements for entering this project access will be provided from an existing two-way left turn lane along Meadowbrook Parkway. The westbound exiting approach of this driveway should provide stop control with installation of a R1-1 "STOP" sign.

It is believed that the project access along Meadowbrook Parkway is appropriately located to provide the necessary intersection sight distance set forth by El Paso County.

If you have any questions or require anything further, please feel free to call me at (720) 943-9962.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Jeffrey R. Planck, P.E.
Project Manager

Please identify the Road impact fees for the development.



A table with the road impact fees was added to the report. It is anticipated that the road impact fees for this project will be \$256,610.

Please identify any offsite improvements that will be triggered by this project should this be developed first before any of the other projects included in the master TIS. If there is none, then please state that in your narrative.

The development of Meadowbrook Park is not expected to trigger any of the offsite improvements identified in the master TIS. This project is anticipated to be accommodated by the existing street network.



Urban Local Low Volume roadway classification was evaluated and added to the circulation plan figure.

The roadways should be categorized as urban local low volume with the exception of Spatium View which is most like an urban local roadway. Please revise the figure accordingly.

LEGEND

- █ URBAN MINOR ARTERIAL
- █ URBAN NON-RESIDENTIAL COLLECTOR
- █ URBAN LOCAL
- █ PRIVATE ACCESS
- XX,X00 ESTIMATED 2040 DAILY TRAFFIC VOLUME

MEADOWBROOK PARK CIRCULATION PLAN

FIGURE 3