



August 16, 2024

Mr. Timothy Riddle
Boulder Associates
1426 Pearl Street, Suite 300
Boulder, CO 80302

**RE: AdventHealth Parker Hospital Expansion – Trip Generation Letter
FHU Reference No. 124118-01**

Dear Mr. Riddle:

Felsburg Holt Ullevig (FHU) has completed an evaluation of certain traffic-related elements to assist you in the approval of the AdventHealth hospital expansion in the Town of Parker. The project is located at 9395 Crown Crest Boulevard in the southeast quadrant of the Parker Road (SH 83)/Crown Crest Boulevard intersection, south of E-470. It's understood that the expansion will be for a new 7-story tower that will include varying hospital facilities, coupled with additional hospital beds.

The primary purpose of this letter is to provide information that summarizes specific issues related to the number of new vehicle-trips that can be expected to be generated by the expansion, along with their assignment to the surrounding roadway access points. A summary of the proposed expansion is also included. Following is more information on each of these issues.

SITE PLAN & DEVELOPMENT INFORMATION

AdventHealth is proposing an expansion to their existing hospital that is located along Crown Crest Boulevard to the east of Parker Road (SH 83) and south of the E-470 interchange. The expansion is specifically located adjoining the primary hospital building along its southeast side.

The proposed hospital expansion will include 185,840 square feet (ft) of new space housed across seven (7) stories. The first floor will include an expansion of an emergency room with two catheterization labs and two intervention radiology spaces, while the 2nd floor will include new operating room space and a sterile processing department. The 3rd through 7th Floors will include 30 beds each with medical/surgery units. Central utility plant upgrades for mechanical and electrical equipment will be included and the existing helipad will be relocated directly to the southeast of the emergency room expansion. Some new parking spaces will also be provided. A representation of the project site plan is found on **Figure 1**.

TRIP GENERATION

Table 1 provides a summary of the projected vehicle-trips for the hospital expansion. As noted, the proposed size of the expansion is 185,840 sf over seven (7) stories and it will include a variety of hospital-associated services, including 150 beds. The Institute of Transportation Engineers' publication *Trip Generation* provides several categories to understand the number of potential vehicle-trips that can be projected for a site such as this. For comparison purposes, we've included trip estimates for two of those categories: 1) square footage, and 2) the number of beds. The Average Rate data was used for the daily and peak hour trip estimates since it is the estimation method that is available for both of the independent variables.

Table 1. AdventHealth Parker Trip Generation

Land Use	Unit	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
AdventHealth Parker Hospital Expansion									
Hospital ¹	SF	185.84k	2,001	102	50	152	56	104	160
	Beds	150	3,348	193	76	269	84	170	254
Averages			2,675	148	63	211	70	137	207
¹ Land Use Code 610, Hospital									

ACCESS ROUTES

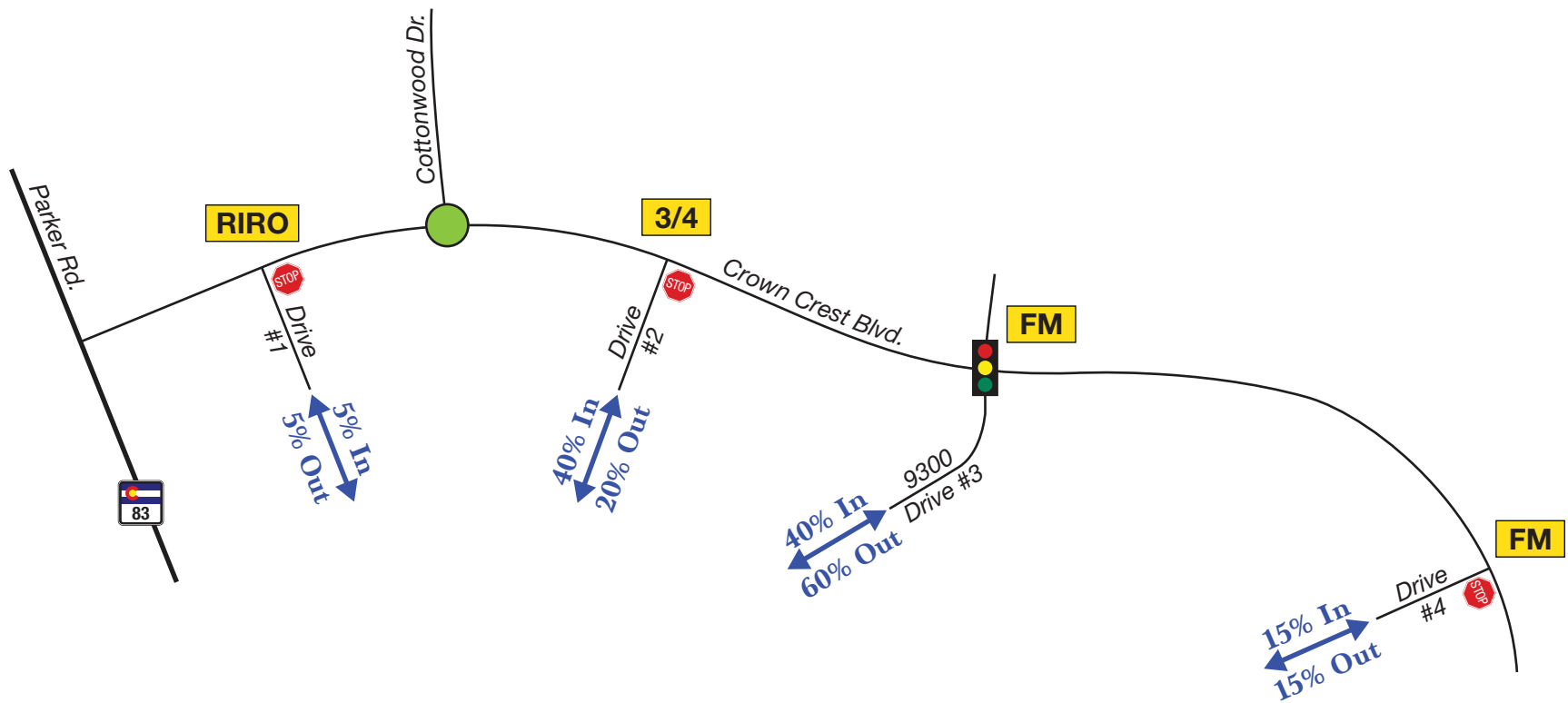
Access for the building expansion will be oriented to/from the same access intersections that serve the existing hospital and medical office buildings. Vehicular access is provided along Crown Crest Boulevard at four (4) locations (west to east):

1. 400' East of Parker Road (Access #1) – This access is restricted to only inbound and outbound right turn movements (RIRO),
2. 475' East of the Cottonwood Drive Roundabout (Access #2) – Access is restricted to only ¾ movements (inbound and outbound right turns, and an inbound left turn in the westbound direction,
3. 9300 Intersection (Access #3) – A four-legged, full-movement access that is controlled by a traffic signal, and
4. East Access (Access #4) – Located about 1,100' to the east of the traffic signal, a full-movement access.

Considering these access routes, an estimate of the percentage of new vehicle trips that would use each one is based on the following assessments:

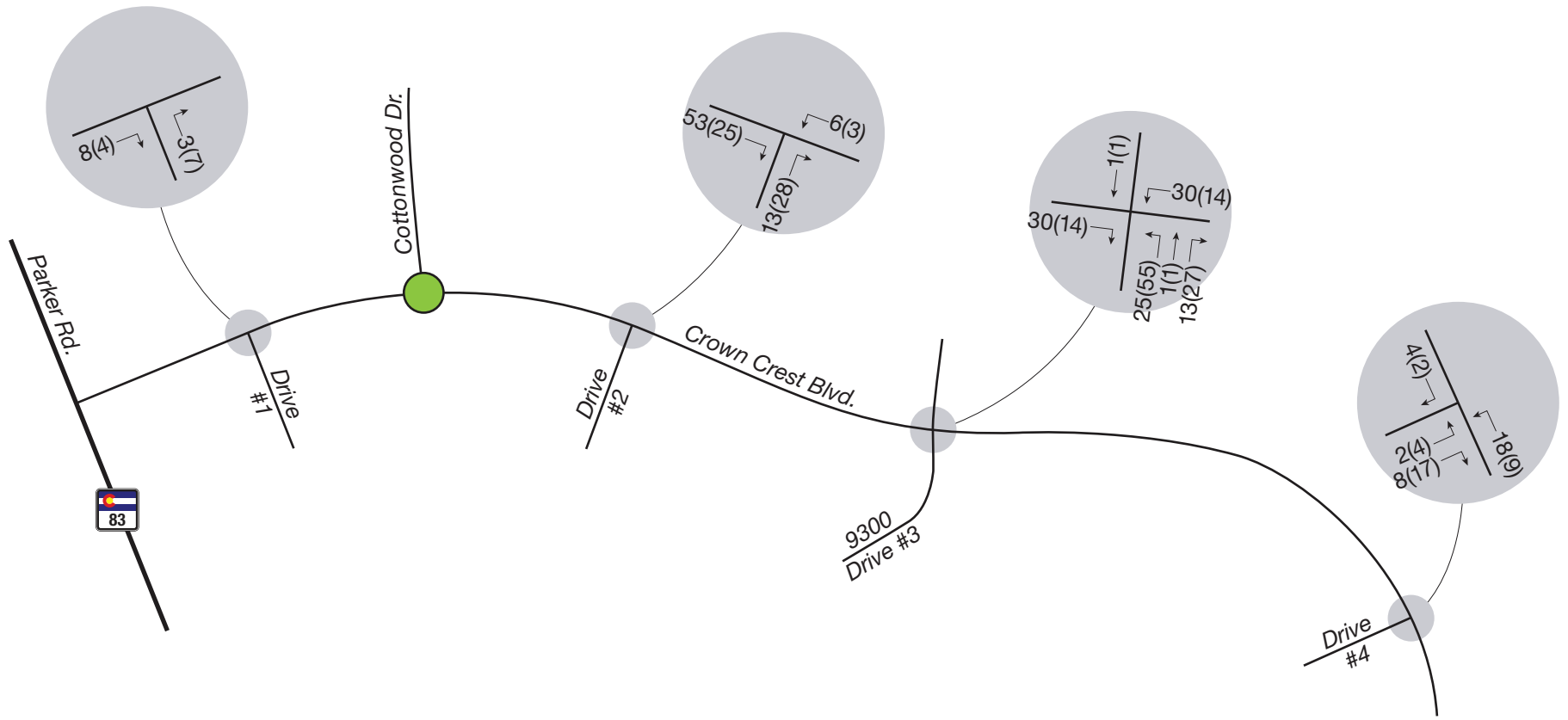
- Access #1 is projected to be used by the least number of hospital patrons given its location along the west edge of the hospital property.
- Most arrivals and departures are projected to use the two access points identified as #2 and #3 above. These appear to provide the most direct access to the main body of the hospital. Access #3 is projected to garner the highest level of outbound movements since it allows motorists to make a left turn at the existing traffic signal.
- Access #4 can also provide outbound left turn movements but they are projected to be much lower than at Access #3 given its location at the very east end of the property.

Trip distribution of vehicle-trips are represented on **Figure 2** and the assignment of the vehicle-trips can be found on **Figure 3**.



LEGEND

- RIRO** = Right-In/Right-Out
- 3/4** = Right-In/Right-Out/Left-In
- FM** = Full Movement
- XX%** = Trip Distribution Percentage
- STOP** = Stop Sign
- Traffic Signal** = Traffic Signal
- Roundabout** = Roundabout



LEGEND

XX(XX) = AM(PM) Peak Hour Traffic Volumes

● = Roundabout

As can be seen in **Table 1** and on **Figure 3**, the number of projected vehicle-trips during the AM or PM peak hour is 148 vehicles per hour (vph) or less, for either inbound or outbound movements. This level of vehicle activity equates to about 2.5 vehicles per minute during the highest hour of the day (inbound movements during the AM peak hour), with these vehicle-trips distributed across four access points. Even if all of the trips were concentrated at one location, 2.5 vehicles per minute is not an excessive level.

It is recognized that more outbound left turn movements will be concentrated at Access #3 to utilize the traffic signal. The trip estimates find that only about one vehicle will be added to the left turn lane every minute, and only during the hour with the highest projected outbound level, being the PM peak hour. All other hours of a typical weekday, and also on the weekends, will be less.

SUMMARY

The evaluation of the AdventHealth expansion finds that it will generate a level of vehicle-trips that can be accommodated across the four intersections that are available for access to/from the hospital site. A maximum of 55 trips are projected for any one movement – outbound left turns at the Access #3 traffic signal – about one per minute during the PM peak hour.

Considering the information contained in this letter, I believe that the proposed hospital expansion can be an cohesive part of the AdventHealth hospital campus without causing unwanted delay or congestion.

If you have any questions related to the information contained in this letter, please do not hesitate to contact me at 720-200-8951 or at rich.follmer@fhueng.com.

Respectfully,

FELSBURG HOLT & ULLEVIG



Richard R. Follmer, PE, PTOE
Associate