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MEMORANDUM

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FROM: Chris Sheffer, Felsburg Holt & Ullevig

DATE: October 27, 2005

SUBJECT: Powers Boulevard Sensitivity Analysis with Fort Carson Growth
FHU Reference No. 01-253

This memorandum provides a sensitivity analysis of traffic projections and operations at the I-25 interchange with SH 16 and adjacent intersections along SH 16 and Powers Boulevard with newly projected growth at Fort Carson. A recent draft Comprehensive Transportation Study prepared by Gannett Fleming has identified growth from an additional 10,000 troops as well as additional base development. This additional growth, if realized, would increase projections beyond the Pikes Peak Area Council of Governments (PPACG) 2030 projections at the I-25 interchange and at adjacent intersections.

The 2030 PPACG regional travel demand model was evaluated to determine what portion of the recently projected growth was already accounted for in the regional model. Fort Carson itself is basically included in one traffic analysis zone (TAZ), which is TAZ 295. Table 1 shows a comparison of traffic volumes into and out of Fort Carson as estimated by Gannet Flemming through the Comprehensive Transportation Study, and as modeled by the PPACG regional model. The Gannett Fleming Study reflects a full build-out of Fort Carson, additional future troops that would be stationed at Fort Carson, and troops that have been deployed overseas and would be returning to Fort Carson.

Table 1 Gannett Fleming vs PPACG Daily Traffic Projections

Gate Number	Gannett Fleming Study	2030 PPACG
1,2 and 3	30,000	30,300
4	23,800	29,800
5 and 6	9,200	1,000
19	2,500	2,000
20	24,300	14,100
Total	**89,800**	**77,200**

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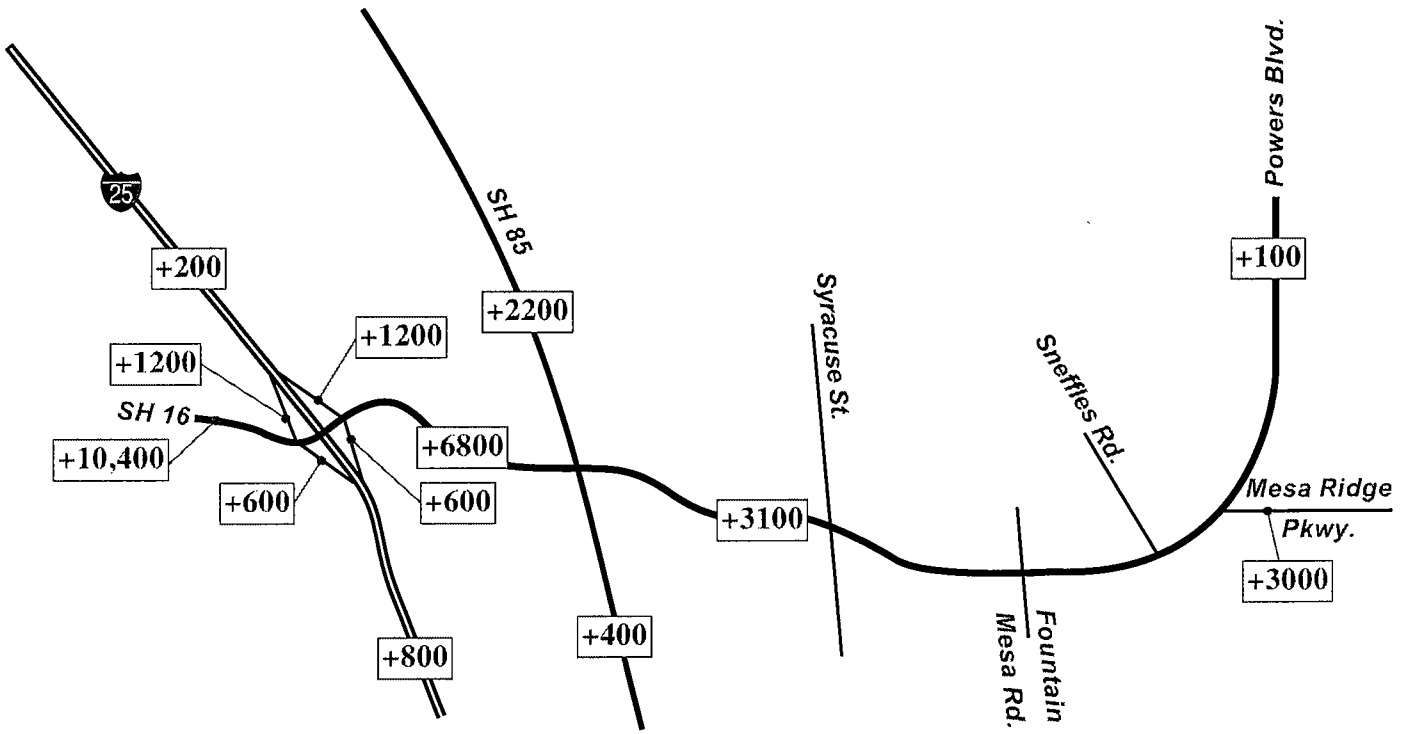
The Gannett Fleming Study forecast of total Fort Carson trip generation is 89,800 daily trips, which is 12,600 higher than PPACG's projections. Land use forecasts for TAZ 295 were modified so that the regional model projections would approximate the higher (89,800) trip generation forecasts.

The focus of this analysis is on the traffic projections at Gate 20, which is accessed from SH 16 and I-25. Additional model modifications specifically addressed projected traffic at Gate 20. The centroid connectors in the PPACG regional model were adjusted so that the model would reflect the 24,300 daily trips at Gate 20 that were forecasted by Gannett Fleming.

A comparison was done with the base 2030 PPACG model and this new model run to determine the net increase in traffic due to the additional base traffic growth and the greater distribution of traffic to Gate 20. Figure 1 shows the net increase in traffic on the adjacent street network as a result of the additional projected traffic at Gate 20. It can be seen that increases of 10,400 vehicles per day are projected on SH 16 west of I-25 and an increase of 6,800 vehicles per day is projected on SH 16 east of I-25. The effect diminishes traveling east, and the increase is increase is negligible on Powers Boulevard north of Mesa Ridge Parkway.

Peak hour traffic with the additional Fort Carson development was derived from the daily traffic increases. Levels of service (LOS) were computed for the key intersections with the proposed action in place. This proposed action includes a four lane section for SH 16 and a diamond with a southbound off ramp loop. The results are depicted in Figure 2. Figure 3 shows 2030 traffic projections and LOS from the Powers Boulevard EA. It can be seen that some degradation of LOS would occur due to the increased traffic at Fort Carson. Slightly worse LOS would be expected at the I-25 / SH 16 interchange and the SH 85 / SH 16 interchange. The ramp terminal intersection LOS would decrease to LOS D during one or more peak hours. Freeway merge and diverge LOS would remain the same with the exception of the southbound off ramp which would decrease from LOS b to LOS c in the Am peak

In summary, interchange operations at the I-25 / SH 16 interchange, and along Mesa Ridge Pkwy., with additional projected Fort Carson traffic would be adequate with the laneage of the Powers Boulevard EA Proposed Action.



+XXX = Fort Carson Buildout increase over PPACG 2030 Model (Daily Trips)

Figure 1

Fort Carson Sensitivity Analysis

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DOT

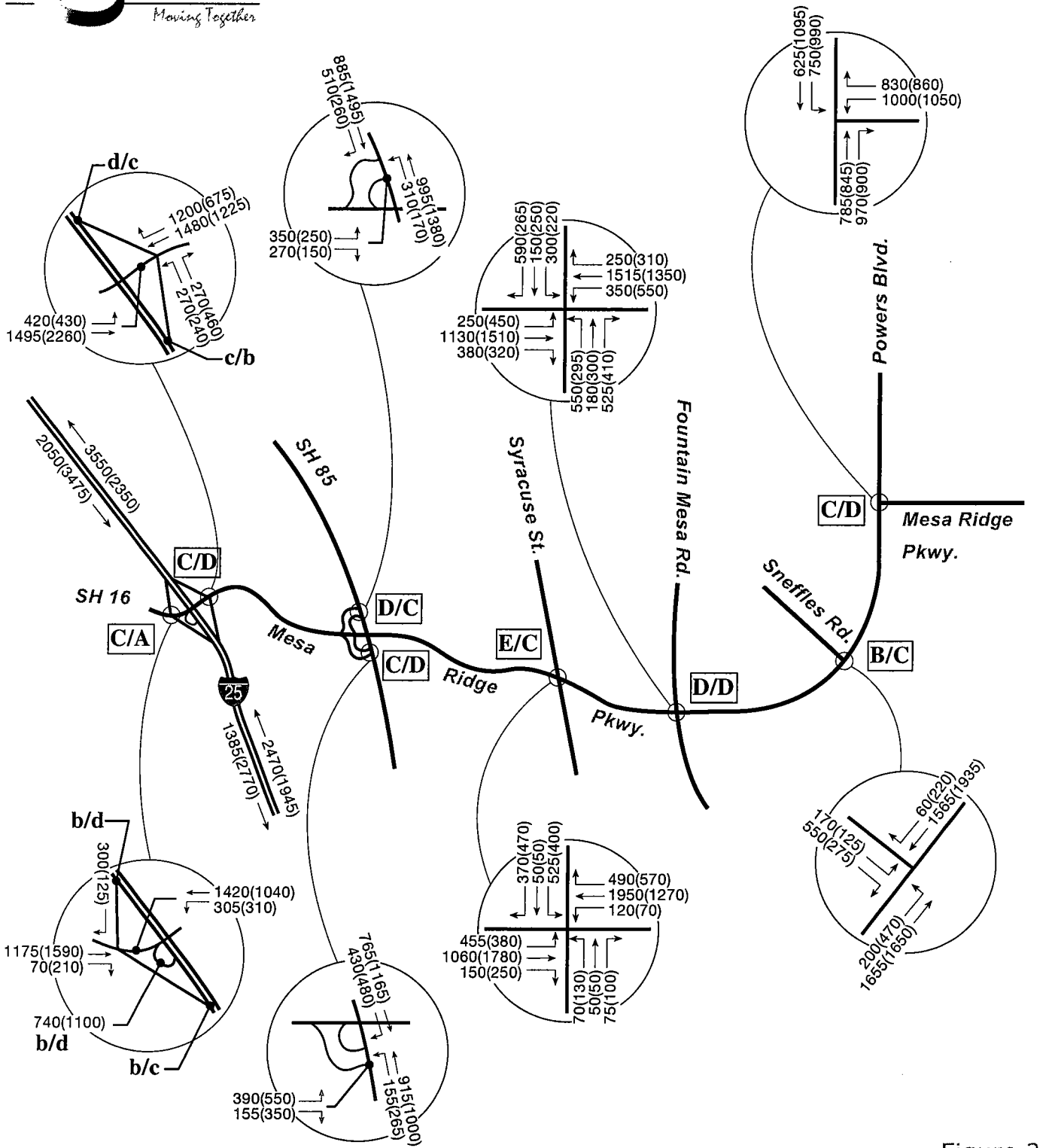

Figure 2

Peak Hour Traffic and Levels of Service with Fort Carson Growth

LEGEND

XXX(XXX)	=	AM(PM) Peak Hour Traffic Volumes
X/X	=	AM/PM Peak Hour Signalized Intersection Level Of Service
x/x	=	AM/PM Peak Hour Merge/Diverge Intersection Level Of Service

N

10/26/05

Powers Blvd. - Proposed Action
2030 AM and PM Peak Hour
Traffic Volumes and Levels of Service

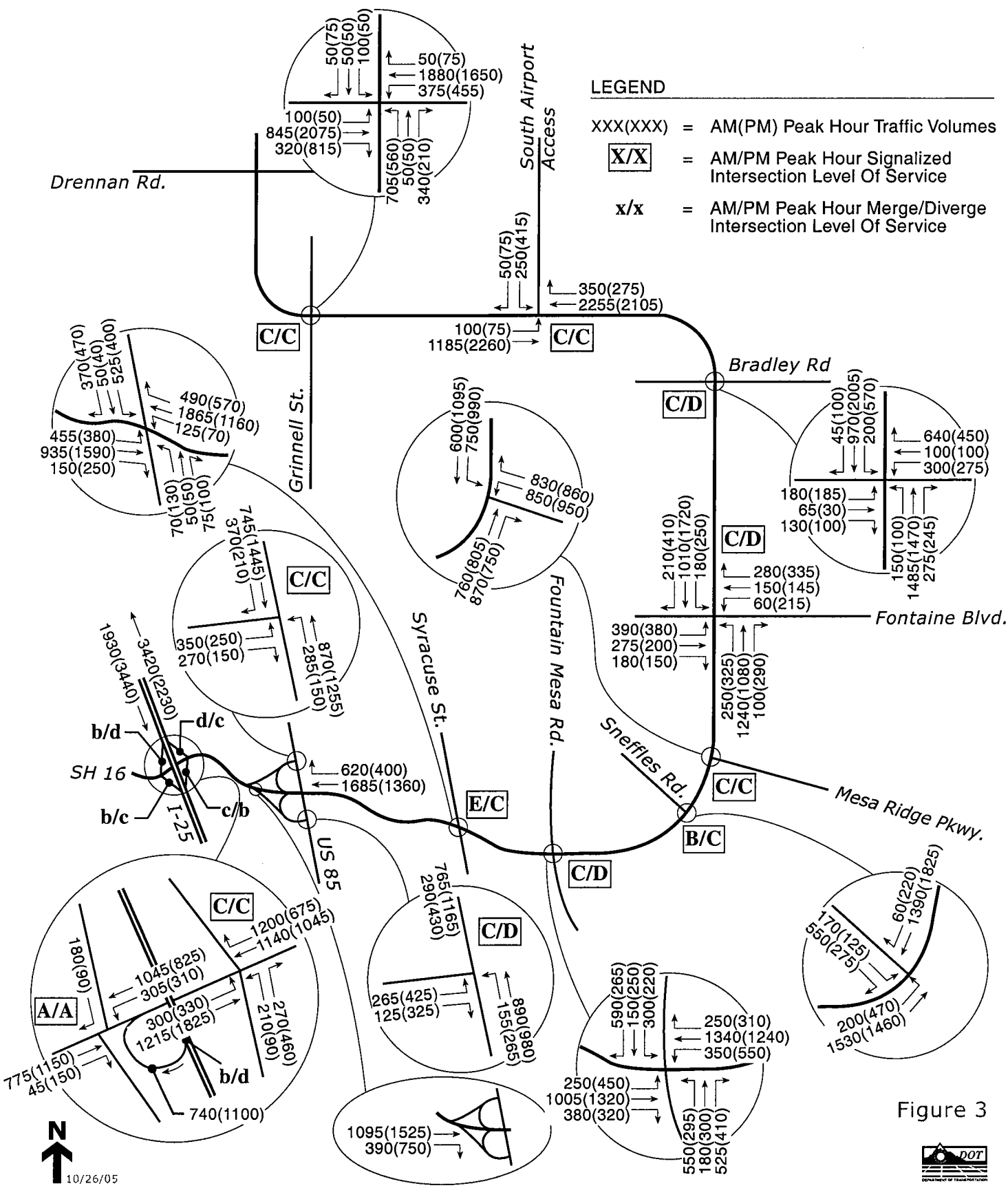

Figure 3