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December 9, 2020

Brad Bonnet
 Allred & Associates
 580 Burbank St Suite 125
 Broomfield, CO 80020

RE: S Adams Fire Station 1
 4769 E. 69th Ave

Dear Brad,

The existing Maintenance Facility for the S Adams Fire District is being remodeled to become Fire Station 1. This document will project the number of trips the new facility will generate and compare those trips with the existing trips on the site. The Institute of Transportation Engineers *Trip Generation* manual has very little data for the Fire Station category, thus the daily non-emergency trips are estimated based upon the staffing at the station. The site plan is attached for reference.

Proposed Fire Station

The Fire Station will have a maximum of 5 employees that work daily. The 5 fire fighters work 48 hour shifts with shift changes at 7 am. While not expecting visitors there maybe minimal visitors which are assumed as 1 per day and finally 5 miscellaneous trips such as deliveries, trash pickup, shopping trips, etc.

The following table summaries the number of trips that can occur daily. The fire fighter trips are assumed daily at shift change even though they only change shifts every other day. Thus their trips are over estimated. The visits and miscellaneous trips are estimated based upon typical use.

			Trips Generated - Weekday					
Generator	Size	Daily	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
Fire Fighters	5	10	5	5	10	1	1	2
Visits	1	2	0	0	0	0	0	0
Misc Trips	5	10	0	0	0	0	0	0
Total Non Emergency Trips		22	5	5	10	1	1	2

Fire Station Trip Estimates

The above table shows that the fire station and will generate approximately 22 daily trips with 11 of those trips entering and 11 trips exiting. The firefighter shift change happens every other day and generates 10 AM peak hour trips and 2 PM peak hour trips may also occur.

While visitors are not planned for, there may be 2 visitor trips per day. In addition 10 miscellaneous trips such as mail, trash, deliveries, and shopping may occur daily. Visitors and miscellaneous trips do not normally occur during the peak hours.

In addition, there will be emergency trips that involve lights and sirens. The emergency trips are random and too difficult to predict on a daily basis.

Existing Maintenance Facility

The existing maintenance facility has 2 employees and they have 8 miscellaneous trips per day for deliveries, trash, shopping, firefighters checking on equipment, firefighters bringing equipment for maintenance, etc. The existing facility has 20 daily trips. The following table compares the New Fire Station trips with the existing maintenance trips.

			Comparison of Station 1 with Existing Trips					
Generator	Size	Daily	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
New Station Trips		22	5	5	10	1	1	2
Existing Employees	2	4	2	0	2	0	2	2
Existing Misc Trips	8	16	0	0	0	0	0	0
New Trips at Station (New - Existing)		2	3	5	8	-1	1	0

Comparisons of Trip Estimates

The above table shows that Fire Station 1 will generate 2 additional daily trips when compared to the existing maintenance facility. The existing maintenance facility has only slightly fewer daily trips due to the nature of the maintenance activities. The peak hour trips will increase slightly due to the number of firefighters on site versus the number of maintenance employees.

Summary

This estimate shows how few non-emergency trips a fire station actually generates. The number of daily trips is estimated at 22, which is slightly over estimated due to the fact that shift change only occurs every other day. The firefighter shift change occurs at 7 am, and causes the 10 AM peak hour trips. An occasional PM peak hour trip also occurs.

When compared to the existing maintenance facility, the new fire station on the same site adds very few additional trips, 2 daily trips and 8 peak hour trips. Even though the existing maintenance facility had fewer employees, the nature of maintenance requires that fire equipment be brought to the facility for maintenance work. Maintenance work also requires repair parts that must be delivered to the site. Thus even with fewer employees, the maintenance facility generates almost as much traffic as a fire station does.

The station will also have emergency trips, but these are with lights and sirens that allow the fire equipment to enter the surrounding traffic.

Based on this analysis, converting the existing maintenance facility to a fire station will generate very few additional non-emergency daily trips and the generated traffic will not impact the adjacent roadways.

Sincerely yours,



Fred Lantz, PE





SITE PLAN
A1.0

SACFD FIRE STATION
4769 E. 69TH AVE.

ALLRED & ASSOCIATES

ARCHITECTURE • PLANNING • INTERIOR DESIGN

1000 W. 10TH AVENUE, SUITE 100, DENVER, CO 80202 (303) 733-4444

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SCALE: AS SHOWN REVISIONS: ^ ^ ^ ^ ^

LANTZ ASSOCIATES