

Submitted by Kelly
Webb
at Board Hearing of 9-15-08
Budget Hearing

2008 PATROL ALLOCATION STUDY WEST SLOPE PATROL

This is the follow-up study to the 2006 Patrol Allocation study which was completed in August 2006. In the same manner as that study, this will be a workload based analysis to use in determining how many deputies should be assigned to West Slope patrol. This analysis will use the same activities deputies are assigned to or become involved in (from CAD) as the last study. The study will use that "Obligated Time" to determine the number of shifts, and thus deputies are needed to staff our operations and thus accomplish that amount of work. Obligated Time is primarily the time spent on activities that deputies are dispatched to, or activities associated with a dispatched activity. It also includes activities such as report writing or time at the jail that is associated with certain officer initiated activities. The specific tasks are represented by the CAD status identifiers listed below.

As in the last study, beat 55 is excluded from the data. Patrol management has determined that the department needs deputies at various times in 55, regardless of the workload. Including 55 would skew the data, due to the low workload.

The terms deputy and unit will be used interchangeably.

OBLIGATED TIME – BY ZONE

The CAD status identifiers used for determining Obligated Time are as follows:

CALL
EDSO

ENRT
JAIL
HOSPITAL
LINK
OUT@
REPORT
ROUTE
SUBSTATION

It should be noted that part way through 2007 "LINK" was eliminated and replaced with "HOSPITAL".

The total number of hours spent on those activities will be totaled by Zone, and those values then divided by the amount of time identified as Obligated Time per shift. For the last study it was determined by Patrol management that 5.75 hours per shift would be the amount of time that should be committed to handling obligated time activities, as identified by the ten CAD status identifiers listed above. 5.75 hours is the same amount of time that will be used for this study.

The following table shows the hours spent by patrol deputies on the ten status identifiers. The data represent the amount of time spent on activities by the physical location of the activity or call that initiated the activity, and not the identifier of the handling deputy. In other words, if 11 Charles handles a call in Zone Three, the activity is credited to Zone Three and not Zone One. All data is for calendar year 2007.

2007 Patrol Allocation Study

Unit Status	Zone 1	Zone 2	Zone 3	Zone 4	Tahoe 5 less 55	5 all	55	53
Call	3953	6868	1349	1313	1810	1909	99	100
EDSO	1412	1762	573	653	2432	2515	83	122
ENRT	1291	2189	468	654	750	819	69	254
Jail	330	395	106	95	265	275	10	2
Hospital	121	102	43	25	135	140	5	1
Link	29	31	7	13	19	19	0	0
Out @	1235	1614	481	508	1589	1647	58	493
Report	1881	2791	683	635	762	770	8	74
Route	3418	3951	1212	1384	944	1049	105	74
Substation	0	300	0	8	0	0	0	0
	Z1	Z2	Z3	Z4	Tahoe			
Total Allocated	13670	20003	4922	5288	8706	9143	437	1120
Available	12698	16454	5104	5738	13069	16653	907	2677

Taking the above totals by zone, and dividing by 5.75 hours of obligated time per shift, the total number of hours per year and day, and number of deputy-shifts per day for each zone is obtained. These are, of course, allocated across the 24-hour day. Also, under shifts per day, raw numbers are in parentheses and the non-parentheses numbers are rounded up. The numbers for Zones 3 and 4 reflect three deputies per day, or one per shift as directed by Patrol Division management .

ZONE	HOURS PER YEAR	HOURS PER DAY	SHIFTS PER DAY
1	13,670	37.5	(6.5) 7
2	20,003	54.8	(9.5) 10
3	4,922	13.5	(2.3) 3
4	5,288	14.5	(2.5) 3
Totals	43,883	120.3	23

The table shows that 23 deputy-shifts are required each day, and when 55 is added in totals 24 deputy-shifts per day. As in the last study, this includes Canine units. From 2006 there was a slight decrease in the workload of Zone 1 and a slight increase in the workload of Zone 2 allowing the shift of a deputy from Zone 1 to Zone 2 from the prior study.

SHIFT RELIEF FACTOR

As in the prior study, a shift relief factor (SRF) was developed. This format for determining patrol staffing develops the number of deputy shifts required to accomplish our *daily* workload. Since deputies work 11.5 hour shifts, three days during one week and then 4 days during the next, they work 7 days every two weeks. If no time was ever taken off due to vacation, sick days or training, etc, it would require only 48 deputies to staff west slope patrol operations. Because, however, deputies do take time off or otherwise lose time away from their shifts a factor needs to be developed to compensate for that time away from their shifts in order to have enough deputies available for shift coverage.

A listing of 50 deputies who worked the entire year (2007) in patrol was obtained to determine the patrol SRF. The categories used to determine the SRF were Sick Leave, Vacation, Comp Time taken, Family Sick, and 4850. Additionally, "Other" was added to account for time away from shifts for training or other administrative reasons. No actual accounting exists, so it is a best estimate based on interviews with sergeants and administrators. We estimated

80 hours per year per deputy. The following are the totals for the various categories, with average per deputy rounded up:

	<u>Total</u>	<u>Average per Deputy</u>
Comp Time Taken	6188	122
Family Sick	839	17
4850 Time	675	14
Personal Sick	2031	41
Vacation	4682	94
Other	4000	80
Totals	18,415	368

368 hours divided by 11.5 hours per shift = 32 shifts. As shown above, deputies work seven days every two weeks, so 26 two-week periods per year times 7 shifts = 182 shifts per year. 182 would be the number of shifts per year per deputy if they took no other time off. The above table shows that they take off, on average, 32 additional shifts per year, for a total of 214 shifts per year.

As in the 2006 study, the definition of and formula for determining SRF as recommended by the International Association of Chiefs of Police is:

Total hours required to cover one shift position every day for one year divided by the average number of hours worked on patrol per year per deputy.

OR

$$365 \times 11.5 / (365 \times 11.5 = 4,197 \text{ hours}) - (214 \times 11.5 = 2461 \text{ hours})$$

OR

$$4197 / 4197 - 2461 =$$

$$4197 / 1730 = 2.42$$

So 2.42 is the new SRF. It was 2.47 for the last study.

If 24 deputy shifts are needed per day, then $24 \times 2.42 = 58.08$ or 58; so 58 deputies are needed to accomplish the **workload** for west slope patrol. The best way to approach it, however, is on a shift-wide basis.

Deputies are deployed among the three shifts and requires that each shift have its own SRF for adequate shift relief on a day to day basis. If the SRF is assigned by positions for each of the three shifts, It is:

Dayshift	$8 \times 2.42 =$	19.36	rounded up to	20
Swing shift	$10 \times 2.42 =$	24.2	rounded down to	24
Graveyard	$6 \times 2.42 =$	14.5	rounded up to	15
Total				59

Of course, Patrol Division management can allocate the positions among the three shifts as they see fit. This could produce minor changes, but would not change the total by more than one deputy.

Patrol should have a total of 59 deputies for Beat assignments, including Canine units according to the workload. In order to have enough deputies for relief on the graveyard shift, one additional deputy should be added for a total of 60 deputies. This does not include School Resource Officers, SED deputies or other sworn positions assigned to Patrol. It does not include any additional deputies that will be required to handle the workload increase that the soon-to-open Casino will be responsible for.

If the casino and casino related crimes resulted in a workload increase of only 1 deputy for each of the three shifts (or 5.75 hrs per shift), then the SRF adjustment would indicate that an extra 7.26 deputies will be required ($3 \times 2.42 = 7.26$).

CALLS FOR SERVICE

A breakdown of all Calls For Service (CFS) was obtained from Phil Dold for 2007. The total number of CFS (with traffic stops removed) by zone are as follows:

Zone 1	13,049	
Zone 2	18,796	
Zone 3	5,023	
Zone 4	5,364	
Total	42,232	or 115.7 CFS per day

With a recommended 23 shifts per day (not including 55) the average number of CFS per deputy per day is 5.03. This can later be compared to the South Lake Tahoe Allocation Study.

2008 PATROL ALLOCATION STUDY

SOUTH LAKE TAHOE

This portion updates the 2007 South Lake Tahoe Allocation study. The methods will be the same, with some minor adjustments that will be identified as they arise.

OBLIGATED TIME

SLT deputies are currently working a shift similar to Placerville. They work 3-12 hour shifts one week, and 3-12 hour shifts and an 8-hour shift the next. Their administrative time per shift remains the same as Placerville based deputies, or 3 hours per shift. The obligated and un-obligated times remain the same leaving 5.75 hours of obligated time per shift.

From page 3, above, the total hours for South Lake Tahoe for the patrol status codes for Zone 5 minus 55 and 53 are:

CALL	1710
EDSO	2310
ENRT	496
JAIL	263
HOSPITAL	134
LINK	19
OUT@	1096
REPORT	688
ROUTE	870
SUBSTATION	0
TOTAL	7586

7586 hours per year divided by 365 days = 20.8 hours per day. 20.8 divided by 5.75 hours of obligated time per shift = 3.6 shifts per day rounded up to 4, spread over the 24 hour day. 4 shifts per day times 2.42 = 9.7 rounded up to 10 deputies assigned to patrol. (Workload justifies five deputies per day.)

There are currently 14 patrol deputies assigned to SLT, not including the two 53 deputies. Of the 14, one is a Canine handler and one is a boat / SAR deputy. If the boat / SAR deputy is removed from the equation, it leaves 13 deputies currently assigned to SLT patrol on a year-round basis. Canine handlers are counted in workload studies.

With a well thought-out schedule, there would be sufficient overlap at the busiest times to cover all calls-for service occurring in the Tahoe basin. Below is a listing of yearly calls for service listed by time blocks, starting with 0100 hrs, and divided by 365 to obtain an average per-day per-time-block. The time blocks approximate the shift times and overlaps:

0100 – 0700	1.6 CFS per day
0700 – 1400	5.4 "
1400 -- 2000	5 "
2000 -- 0100	4.1 "

These numbers **include** the CFS that occur on the west shore in Beat 53.

By scheduling two deputies per shift (Day, Cover, and Graveyard), or six per day there would be more than sufficient overlap between Dayshift and Graveyard to handle the workload between 1400 and 0100 hrs. In fact, a shift could be devised with less than six deputies per day. The six-per-day schedule would require a total of twelve deputies. There would seldom be the need to cover shifts with overtime, given the amount of work per hour, assuming that Sergeants are usually available to provide back-up.

A comparison of CFS per-deputy per-day with Placerville (Zones 1-4), and using CFS without traffic stops is

Placerville Zones 1-4 42,232 CFS divided by 365 = 115.7 CFS per day.
115.7 divided by 23 deputies per day = 5 CFS per deputy per shift.

SLT including Beat 53 5,907 CFS divided by 365 = 16.2 CFS per day
16.2 divided by **6 deputies** per day (based on workload need of 5 deputies and including one 53 unit per day)
= 2.6 CFS per shift per deputy

16.2 divided by **7 deputies** per day (6 deputies plus one 53 unit) = 2.3 CFS per deputy

Beat 53 currently has two resident deputies. The yearly total for all combined status codes is 1120 hours. 1120 divided by 365 = 3 hours per day, or less than the workload for one shift. Those hours are spread over a 24 hour period, and many after-hours calls have historically been handled by the other Zone 5 units. Also, the three hours per day includes such non-call related activities as EDSO, ENRT, and OUT@. These three activities are partially inflated by the remoteness of the Beat 53. The three total 872 hours for the year, for an average of 2.4 hours per day. Removing these three from the math leaves about a half an hour per day of obligated time activities. There is not enough workload to justify more than one resident deputy. Re-allocation of that position to south shore would provide additional coverage for shift relief and covering the few calls that occur on the west shore on the days off of the other remaining resident deputy. If this were to be considered, it would be necessary to obtain CFS information on how often CFS actually occur in Beat 53 during the hours that the deputies assigned there are actually working. The data I obtained did not have 53 broken out from the hourly totals.

CONCLUSION / RECOMMENDATIONS

Neither workload nor Calls For Service justify the number of deputies assigned to the Tahoe office, including 53. The problem with reducing the number of deputies to be more in-line with workload and CFS , especially in relation to Placerville, is scheduling in a way that allows for absences. Some options include:

Leave things as they are.

- Reduce the West Shore resident posting to one. The remaining deputy would have a schedule and be available for call-out to handle emergencies on the few days per year that Hwy 89 @ Emerald Bay is closed. Re-allocate that position to Placerville. Handle the workload for west shore from south shore on the days that the resident deputy is off duty. Other than drive-time, the workload increase would be minimal and easily handled by south shore patrol deputies. Conduct a study to determine the busiest hours and days of week for the scheduling of the remaining west shore deputy.
- Staff south shore patrol with five deputies per day.
 1. **Option one:** two deputies on Dayshift, two on cover shift, and one on Graveyard. Stagger the Cover shifts deputies so one starts at 1500 and one starts at 1600. There would be at least three deputies on-duty until 0400 hrs. After 0400, one deputy and one sergeant could easily handle the CFS. There is an average of one CFS every two days between the hours of 0400 and 0700.
 2. **Option two:** Staff Dayshift and Graveyard with two deputies each, and one for Swing Shift. By butting Dayshift and Graveyard against each other, there would always be two or three deputies on duty, with three during the busiest times. Add a vacation relief deputy

and a total of eleven deputies can staff south shore patrol. This would allow the re-allocation of two more deputies to Placerville. Vacant shifts could be staffed by pulling in the 53 unit (during his working hours), or filling with OT as necessary, as is done now.

- Staff with two deputies per shift for a total of six deputies per day. Because of the low workload there would be no need for vacation relief, so a total of twelve deputies could staff south shore patrol. One deputy position could be reallocated to Placerville.