

MEMORANDUM - CITY OF PASADENA
DEPARTMENT OF TRANSPORTATION

DATE: February 24, 2011

TO: Transportation Advisory Commission

FROM: Frederick C. Dock, Director of Transportation

RE: Metro Gold Line At-Grade Crossing Update

Over the last several months there has been an increase in the amount of traffic delay on the streets that cross the Gold Line LRT tracks. Most noticeable is an increase in queuing on California Boulevard. Staff has researched the conditions with Metro and determined that the increased queues are the result of an increase in the number of times northbound and southbound trains pass by each other near the at-grade crossings in Pasadena.

When this condition, known as a dual train event, occurs, the result is a longer than average gate down time at the at-grade crossings. The longer gate down time is, in turn, a product of the LRT station spacing, the distance between crossings and the time required to safely clear pedestrian and traffic operations at the adjacent intersections on Arroyo Parkway and Raymond Avenue. What essentially occurs with a dual train event is that there is not sufficient time between the departure of one train and the arrival of the train in the opposite direction to allow the gate crossing arms to safely cycle open and close again, so the gates are held down until trains from both directions clear the crossing. What results is a period of up to a minute or more when nothing appears to be happening on the tracks, yet traffic on the street is being held by red traffic signals and pedestrian crossings are seeing don't walk indications.

While there have always been dual train events in Pasadena, prior to the opening of the Eastside extension to the Gold Line in November 2009, the numbers of those events that affected the at-grade crossings was small since the location where trains from opposite directions pass by each other tended to be in the tunnel portion of the line north of Del Mar. The Eastside extension has affected the operating schedule of the Gold Line to the extent that the location where trains pass by each other is now south of Del Mar more often than has previously been the case. At California Boulevard, the number of dual train events, which in previous years was about 10 percent of all gate down occurrences, has increased to over 30 percent of total crossings. At Del Mar Avenue, the increase has been from about 20 percent of crossings previously to 40 percent currently. At Glenarm Street, the percentage of dual trains has remained between 10 and 20 percent of all crossings.

Because this condition is relatively new and is only just being understood, remedies have yet to be identified. However, DOT staff is working with Metro to identify operational modifications that may reduce gate down times in the future. It is also important to recognize that once the Foothill extension opens, there will likely be operational changes to train operations that will affect the at-grade crossings in Pasadena. These changes will be a function of Pasadena no longer being at one end of the line as we are now, but rather being in the middle of the line.

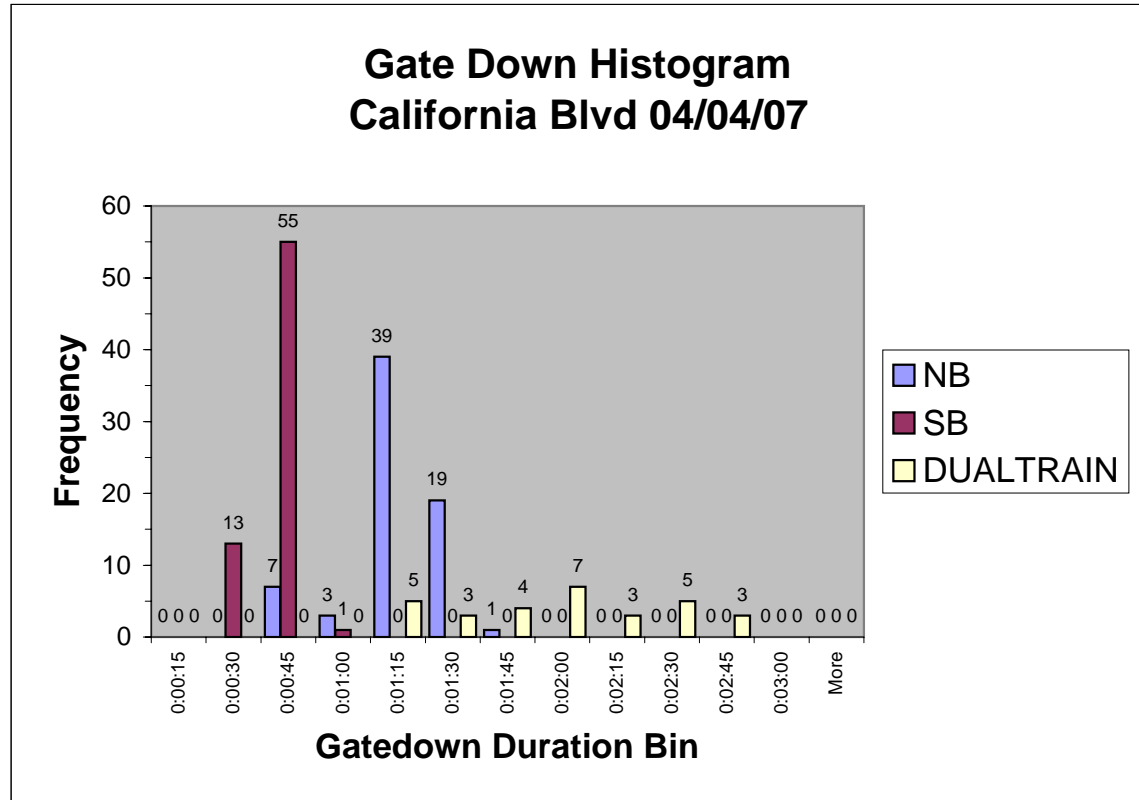
DOT staff has continued efforts, working cooperatively with Metro, to address traffic issues related to the operation of the Metro Gold Line light rail transit (LRT) and monitor the gate down times at the three at-grade crossings. Since our initial work with Metro in 2007 to reduce gate down times in Pasadena, staff has pursued projects to further reduce delays to motorists at the three at-grade crossings. As part of the 2010 CIP, the installation Flashing Yellow Arrow Operation at the intersections of Raymond Avenue/Del Mar Boulevard and Raymond Avenue/ California Boulevard was funded and is currently in design. This project will allow for a shorter advanced preemption to reduce motorist delay at the at-grade crossings in advance of a train arrival. Construction on this project is scheduled to begin in 2011.

As part of the 2009 Metro Call for Projects, the City has allocated over \$1.3 million to address at-grade crossing safety and mobility. The Metro At-Grade Crossing Mobility Enhancement Project will allow for prediction of dual trains at the crossings to allow the traffic signals adjacent to the crossings to provide improved mobility before the dual train event. The project will also allow for 2-way serial communication between the LRT signal controller and the traffic signal controller and will improve the advanced preemption at the Glenarm Street at-grade crossing. The funding allocated to this project is scheduled to be available in FY 2014.

Staff will continue to coordinate operational and mobility concerns with Metro and report to the City Council on its efforts to reduce gate-down-times and improve the interface between the City's traffic control system and the Gold Line train operations.

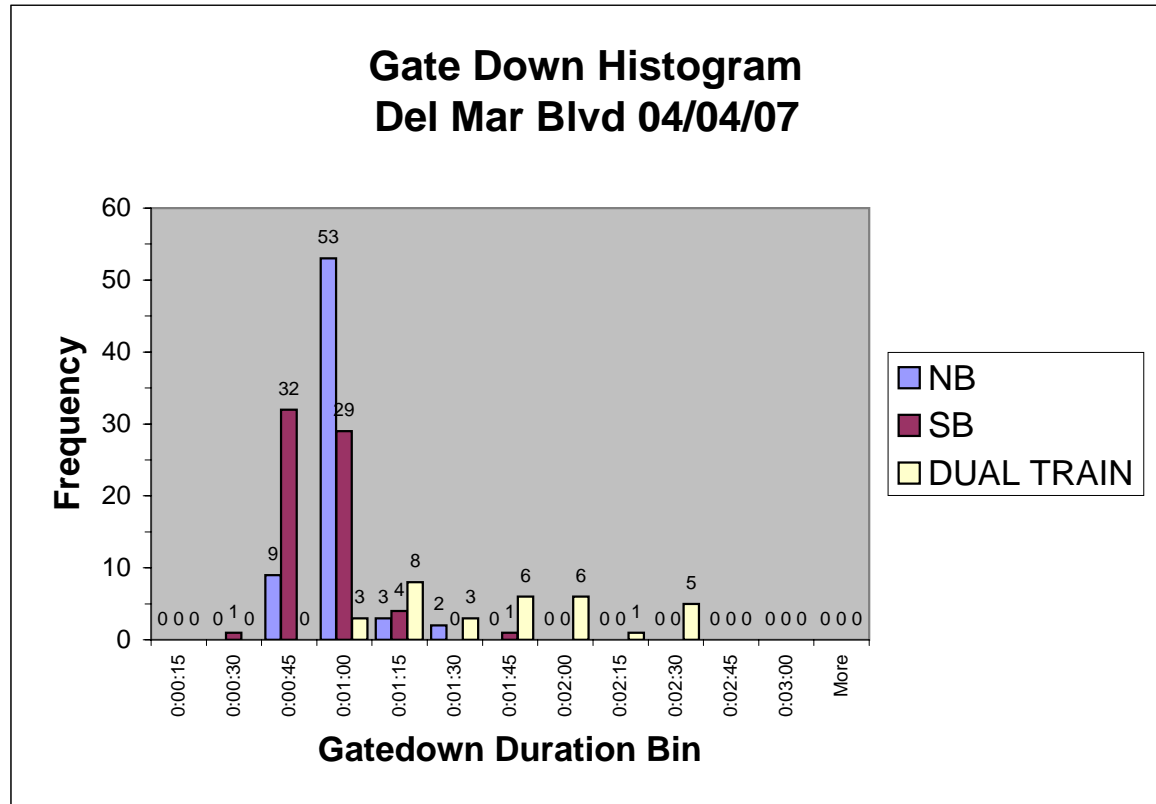
California 04/04/07

<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>DUALTRAIN</i>
0:00:15	0	0	0
0:00:30	0	13	0
0:00:45	7	55	0
0:01:00	3	1	0
0:01:15	39	0	5
0:01:30	19	0	3
0:01:45	1	0	4
0:02:00	0	0	7
0:02:15	0	0	3
0:02:30	0	0	5
0:02:45	0	0	3
0:03:00	0	0	0
More	0	0	0
	69	69	30



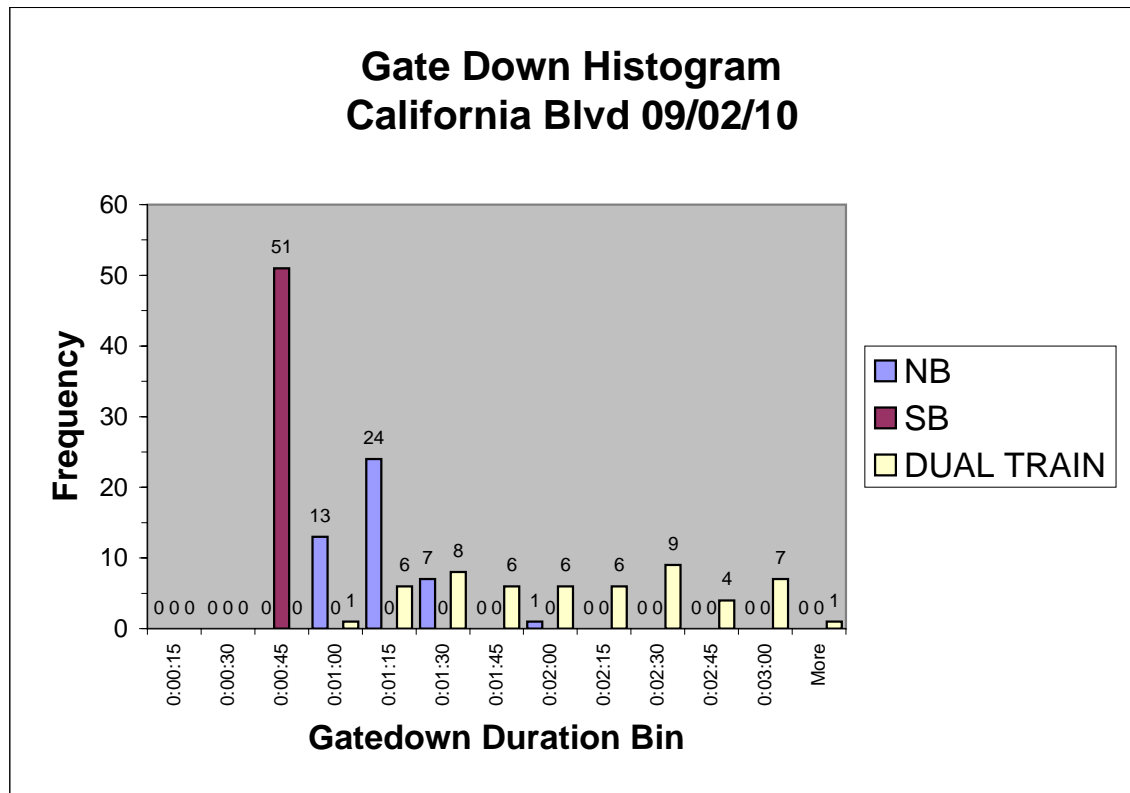
Del Mar 04/04/07

<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>DUAL TRAIN</i>
0:00:15	0	0	0
0:00:30	0	1	0
0:00:45	9	32	0
0:01:00	53	29	3
0:01:15	3	4	8
0:01:30	2	0	3
0:01:45	0	1	6
0:02:00	0	0	6
0:02:15	0	0	1
0:02:30	0	0	5
0:02:45	0	0	0
0:03:00	0	0	0
More	0	0	0
	67	67	32



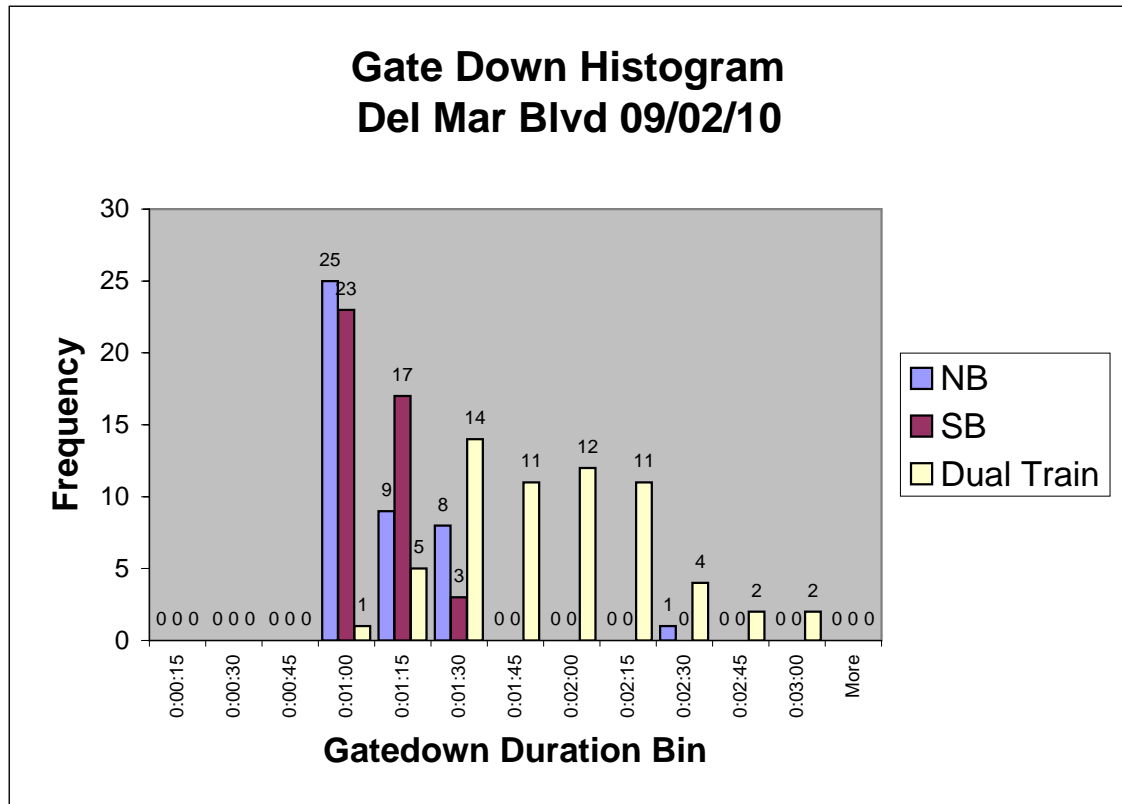
California 9/2/10

<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>DUAL TRAIN</i>
0:00:15	0	0	0
0:00:30	0	0	0
0:00:45	0	51	0
0:01:00	13	0	1
0:01:15	24	0	6
0:01:30	7	0	8
0:01:45	0	0	6
0:02:00	1	0	6
0:02:15	0	0	6
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0:03:00	0	0	7
More	0	0	1
	45	51	54

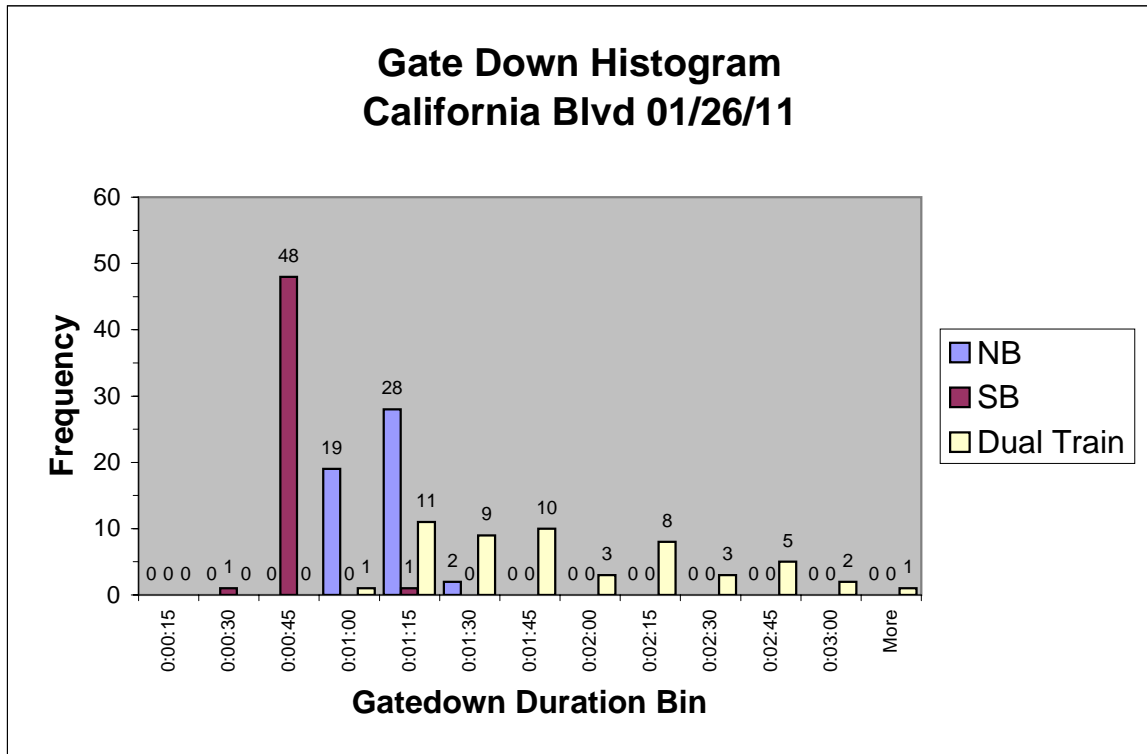


Del Mar 9/2/10

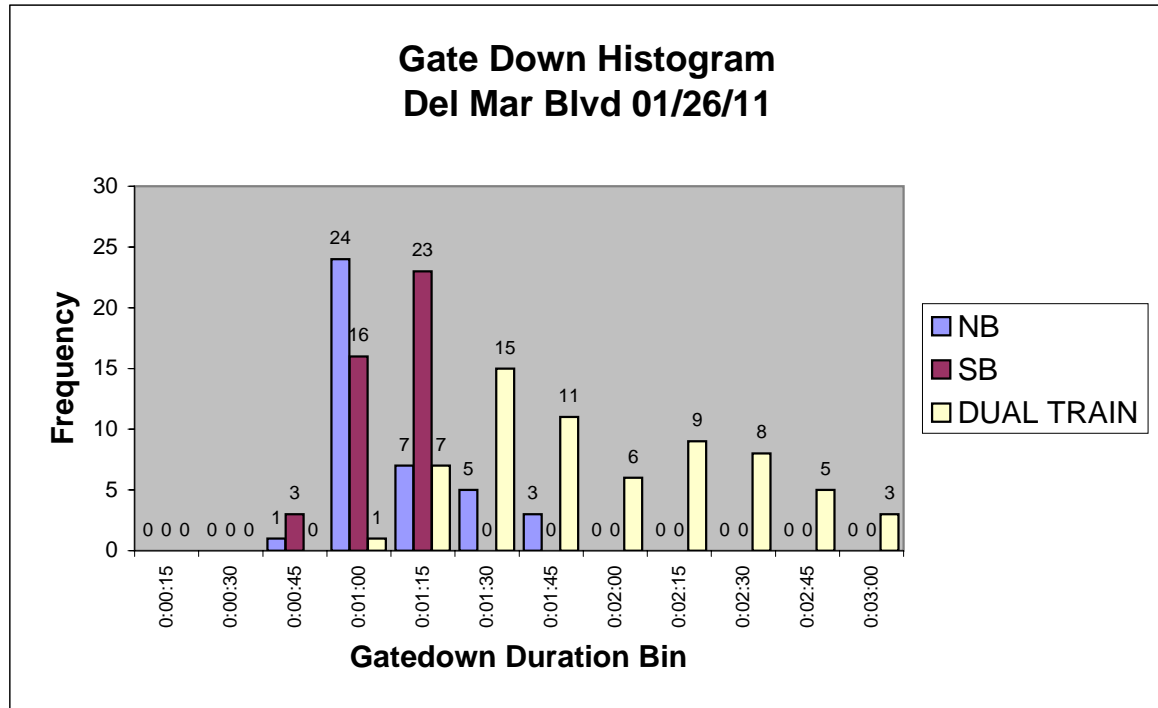
<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>Dual Train</i>
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0:00:30	0	0	0
0:00:45	0	0	0
0:01:00	25	23	1
0:01:15	9	17	5
0:01:30	8	3	14
0:01:45	0	0	11
0:02:00	0	0	12
0:02:15	0	0	11
0:02:30	1	0	4
0:02:45	0	0	2
0:03:00	0	0	2
More	0	0	0
	43	43	62



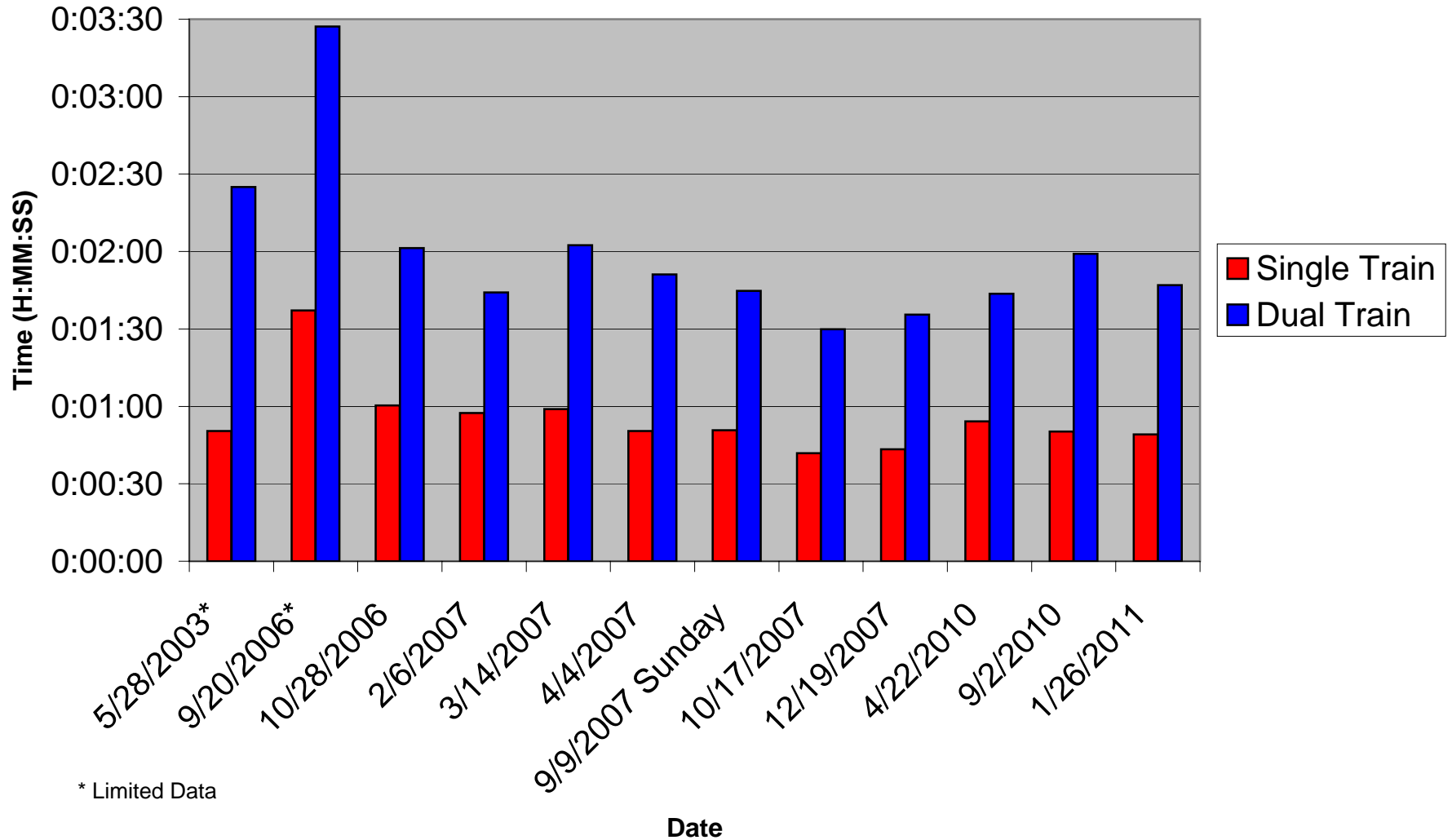
<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>Dual Train</i>
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0:00:30	0	1	0
0:00:45	0	48	0
0:01:00	19	0	1
0:01:15	28	1	11
0:01:30	2	0	9
0:01:45	0	0	10
0:02:00	0	0	3
0:02:15	0	0	8
0:02:30	0	0	3
0:02:45	0	0	5
0:03:00	0	0	2
More	0	0	1
	49	50	53



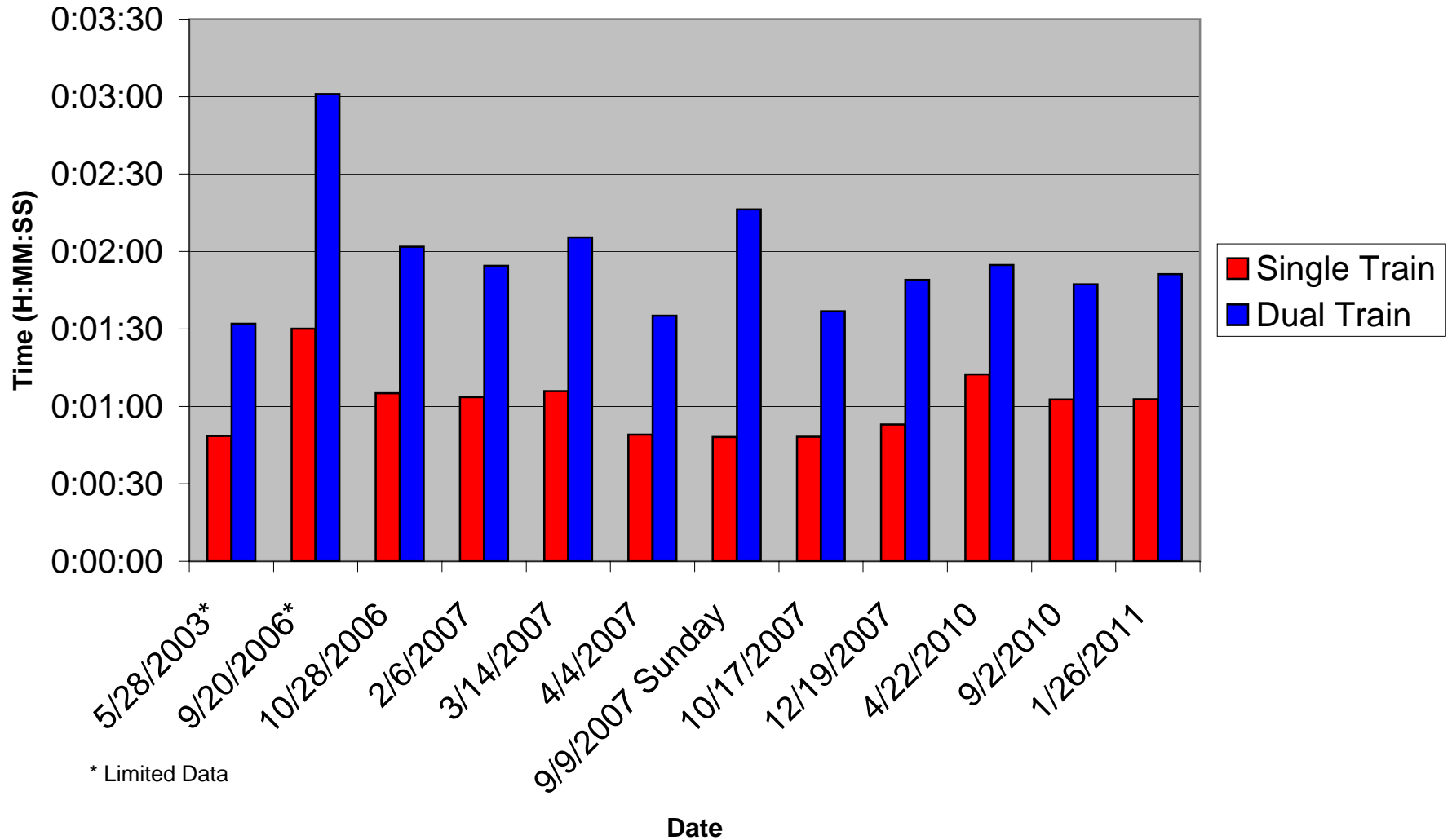
<i>Bin</i>	<i>NB</i>	<i>SB</i>	<i>DUAL TRAIN</i>
0:00:15	0	0	0
0:00:30	0	0	0
0:00:45	1	3	0
0:01:00	24	16	1
0:01:15	7	23	7
0:01:30	5	0	15
0:01:45	3	0	11
0:02:00	0	0	6
0:02:15	0	0	9
0:02:30	0	0	8
0:02:45	0	0	5
0:03:00	0	0	3
More	0	1	2
	40	43	67



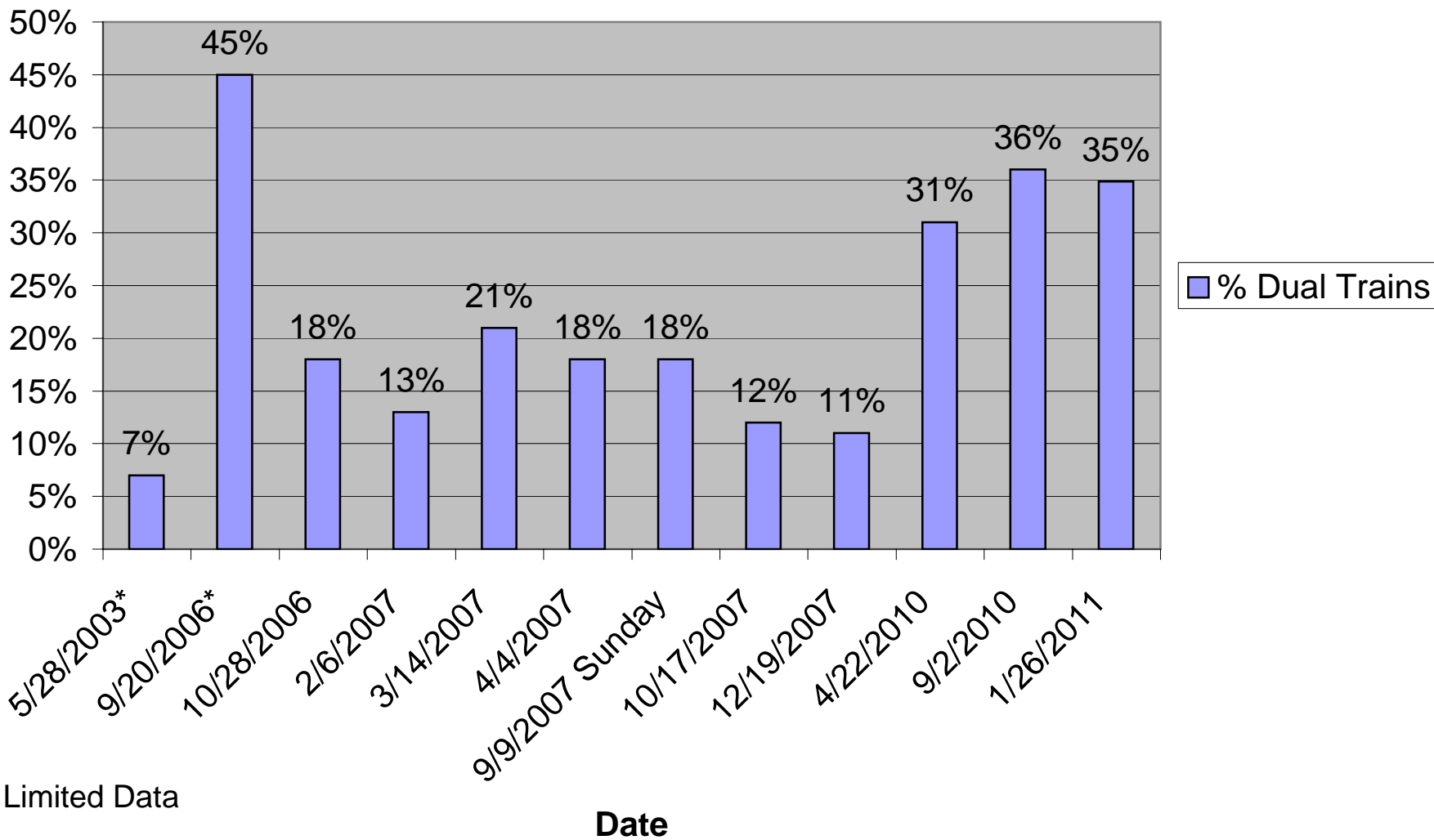
California Blvd - Average Gate Down Times



Del Mar Blvd - Average Gate Down Times



California Blvd - % Dual Trains in 24-Hour Period



Del Mar Blvd - % Dual Trains in 24-hour Period

