# APPENDIX E: BAT ROOST SURVEYS FOR CALIFORNIA HIGH-SPEED TRAIN PROJECT, AUGUST 23, 2010

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# Memorandum

Date: August 23, 2010

To: Leslie Hill and Tricia Campbell

cc: Doug Allen

From: Natasha Walton

Subject: **Bat Roost Surveys for California High-Speed Train Project**

## Introduction

From Monday, August 16th through Wednesday, August 18th, 2010, Doug Allen and Natasha Walton conducted bat roost surveys under bridges and inside culverts for the California High-Speed Train (HST) project from Los Angeles to Anaheim. The HST extends from Union Station in Los Angeles City to the planned Anaheim Regional Transportation International Center (ARTIC) in Anaheim. The HST follows the general path of the present Metrolink Orange Line through urban areas of Los Angeles County to Orange County. To evaluate impacts of this project to biological resources, the impact study area extends 500 feet from the planned path of the HST.

## Methods

Bat roost surveys were conducted during the daylight hours between 1020 hours and 1835 hours. Within the study area, the accessible underside of bridges and inside of culverts were evaluated for bat presence or signs of bats such as guano, urine staining, smell, and piles of insect remains. The bottom portion and sides of each bridge were visually scanned for bats/bat evidence. A bright LED flashlight and/or rechargeable spotlight were used to peer into dark crevices and/or dark corners of the bridges. Binoculars were used to spot bats and/or bat sign along parts of the bridge that were inaccessible for a close-up view of guano and/or staining. An Anabat II bat detector was utilized to evaluate any high pitched sounds suspected of originating from bats. Suspicious items that looked like bat guano (e.g. rodent guano, seed husks) were handled to determine whether or not they were bat guano.

## Results

The following bridges and culverts were surveyed and/or evaluated from a distance. No bats or signs of bats were present at any of the following sites. Some sites will need to be evaluated at a closer distance with better access. Recommendations on how to obtain accessibility and conduct future surveys are provided. Structures are listed in the order surveyed. Rock doves were found

roosting under many bridges so they are not included in any of the following notes. All staining of concrete was deemed to be water staining or bird guano staining.

**16 August 2010 Survey**

Weather: Clear Sky, Wind 0-5 mph

Start Time: 1200 hrs End Time: 1810 hrs

Start Temperature: 91.4°F End Temperature: 87.8°F

| **Bridge/ Culvert** | **HST Section** | **Bats (Y/N)** | **Bat Sign (Y/N)** | **Potential for Bats (if not surveyed)** | **Description** | **Additional Notes** |
|---|---|---|---|---|---|---|
| 1st St. bridge (photos 1&2) | 02 | NA | NA | High | Large, historic bridge with various features | Access via LA River required. Possible roost sites very high (100ft?), so may require emergence surveys. Railroad access required if west end of bridge needs to be surveyed. East end over tracks (not highlighted) surveyed (flagman present), but no bats/bat evidence found. Construction occurring to widen bridge. |
| 4th St. bridge (photos 3&4) | 02 | NA | NA | High | Large, historic bridge with various features | Access via LA River required. Possible roost sites very high (100ft?), so may require emergence surveys. Railroad access required if west or east ends of bridge needs to be surveyed. Part of east side of bridge over Anheiser-Busch property. Far east end of bridge over Mission Road (not highlighted) surveyed, but no bats/bat evidence found. |
| 6th St. bridge (photos 5&6) | 03 | NA | NA | High | Large, historic bridge with various features | Access via LA River required. Possible roost sites very high (100ft?), so may require emergence surveys. **Open access road to river under west end of bridge.** Railroad access required if west or east ends |

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| | | | | | | of bridge need to be surveyed. Part of far west end of bridge (not highlighted) by Mesquit St. surveyed, but no bats/bat evidence found. Mud bird nest over tracks on east end. |
| Train bridge over Garfield (photos 7&8) | 10 | N | N | NA | Cement slab with shallow crevices | Heavy car traffic. |
| Train bridge over Telegraph (photos 9&10) | 10 | N | N | NA | Open steel girders | |
| Train bridge over Garfield (photos 11&12) | 10 | N | N | NA | Open steel girders | Heavy car traffic. |
| Train bridge over Green-wood (photos 13-15) | 10 | N | N | NA | Two spans: car bridge made of concrete box beams with crevices; train bridge made of closed concrete box beams | Moderate car traffic |
| Train bridge over Rio Hondo (photos 16-19) | 11 | N | N | NA | Concrete slab | Bird mud nests under bridge. Culvert on SE side of bridge. Walked through both sides of culvert with lights and exited through one N entrance. Room (~10 X 20 X 6 ft) at center of culvert. Inspected wooden cycling bridge N of train bridge. No bats/bat evidence found. Good foraging habitat available. |
| Train bridge over Paramount (photos 20-22) | 11 | N | N | NA | Two spans: one with open steel girders & one a slab concrete bridge with shallow | Moderate to heavy car traffic. |

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| | | | | | crevices | |
| Train bridge over Rosemead (photos 23&24) | 12 | N | N | NA | Two spans: both open steel girder bridges | Heavy car traffic. |

**17 August 2010 Survey**

Weather: Clear Sky, Wind 0-5mph

Start Time: 1100hrs End Time: 1835hrs

Start Temperature: ~88$^{o}$F End Temperature: 84.2$^{o}$F

| **Bridge/ Culvert** | **HST Section** | **Bats (Y/N)** | **Bat Sign (Y/N)** | **Potential for Bats (if not surveyed)** | **Description** | **Additional Notes** |
|---|---|---|---|---|---|---|
| Bike path bridge on E side of Santa Ana River (photo 25) | E of 33 | N | N | NA | Concrete slab with no crevices | Low water flow running through. N of train bridge over Santa Ana River. UTM: 0418969 E, 3740709 N. |
| Train bridge over Santa Ana River (photos 26-28) | E of 33 | N | N | NA | Open steel girder bridge | No water and denuded ground under bridge. Local resident said to have seen bats flying under bridge, but not roosting there. Cement basin (check dam) south of bridge with water, sparse vegetation, fish, snowy egret, killdeer, and juvenile black-crowned night heron. Entrance of culvert on west side of check dam inspected and no bats/bat evidence found. |
| I5 bridge over Santa Ana River (photos 29-32) | E of 33 | N | N | See additional notes | Concrete slab with drainage holes | No water and denuded ground under bridge. White-throated swifts inside of drainage holes (could hear only). Open entrance to culvert NE of bridge inspected and no bats/bat evidence found. Two small open culverts |

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| | | | | | | immediately NW of bridge inspected by binoculars only, but deemed low potential for bat roosts due to small size and closeness to ground. Bridge portion over bicycle path on west end inspected from a distance and appears to have low potential for a bat roost. |
| Train bridge over Katella (photos 33&34) | 33 | N | N | NA | Concrete closed box beam bridge | Crevices filled. Moderate car traffic |
| Train bridge over Lewis (photos 35&36) | 32 | N | N | NA | Two spans: one with enclosed cement box beams and the other a concrete slab with drainage holes | Some crevices very shallow and others filled with styrofoam and glue. Low car traffic. |
| Train bridge over Lincoln (photos 37&38) | 30 | N | N | NA | Enclosed cement box beams | Decent sized crevices. Only remnants of plants growing in crevices. |
| Raymond retarding basin culvert (photos 39-41) | 29 | NA | NA | Low | Concrete covered culvert with one small opening visible on NE side | Inaccessible – should contact Orange County Flood Control District for access. Large portion of basin filled with water. Spotted various bird species from NW side at intersection of Carbon Creek and Balsam St. Species include black-necked stilt, killdeer, double-crested cormorant, juvenile barn swallows, ducklings (probably mallard), female mallard , western kingbird, American avocet, black phoebe, egret species, and willet. All birds spotted outside of buffer but could be utilizing areas within buffer. |
| Train bridge over Fullerton Creek (photo 42) | 27 | NA | NA | Moderate | Concrete | Inaccessible – fenced off with locked gate. No crevices seen from outside, but access needed. |
| Train bridge over Lemon | 26/27 | N | N | NA | Two spans: both enclosed | Some nice crevices. Remnants of vegetation in crevices – probably |

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| (photos 43&44) | | | | | concrete box beams | vines torn out. Mourning dove nesting on light fixture. Heavy car traffic. |
| Train bridge over Harbor (72) (photos 45&46) | 26 | N | N | NA | Three spans: each one a concrete slab with no crevices | Moderate to heavy car traffic. |
| Train bridge over Highland (photos 47&48) | 26 | N | N | NA | Concrete slab with drainage holes | Moderate car traffic. |
| Train bridge over Euclid (photos 4 &50) | 25 | N | N | NA | Two spans: both open steel girders | High car traffic. |
| Train bridge over Commonwealth (photos 51&52) | 25 | N | N | NA | Open steel girders | Narrow seams |

**18 August 2010 Survey**

Weather: Scattered Clouds, Wind 0-5mph

Start Time: 1020hrs End Time: 1540hrs

Start Temperature: 87.8$^{o}$F End Temperature: 95$^{o}$F

| **Bridge/ Culvert** | **HST Section** | **Bats (Y/N)** | **Bat Sign (Y/N)** | **Potential for Bats (if not surveyed)** | **Description** | **Additional Notes** |
|---|---|---|---|---|---|---|
| Train bridge over Gilbert (photos 53 & 54) | 24 | N | N | NA | Enclosed concrete box beams | Rodent feces along W edge. Narrow crevices. |
| Train bridge over Dale (photos 55-56) | 23 | N | N | NA | Enclosed concrete box beams | Exclusions for rock doves newly in place. Workers placing exclusions have not seen any bats roosting in bridge. |
| Dale road | 23 | N | N | NA | Solid concrete | Crevices filled in. Gate was open |

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| bridge over Brea Creek (photos 57 & 58) | | | | | | so had good access. Able to crawl under southern end of bridge for full view. |
| Train bridge over Brea Creek (photo 59 & 60) | 23 | NA | NA | Moderate | Concrete girder | Access needed. To crawl under bridge may require flagman if approach from road level. Creek access will require boots for water. Mourning dove and house sparrow nearby. Barn swallow dropped down from the bridge. Culvert on NW side of wash with broken gate – inaccessible from here. |
| Train bridge over Beach Blvd. (photos 61&62) | 22 | N | N | NA | Enclosed cement box beams | Crevices narrow. |
| Train bridge over Coyote Creek South (photos 63) | 22 | NA | NA | Moderate | Cement | Access needed. Need flood control access and boots for low water level. Fenced off. |
| Train bridge over La Mirada Creek (photo 64) | 21 | NA | NA | Moderate | Two spans: both have cement girders | Access needed - probably via LA County Public Works (on sign posted). Soft bottom with low water so may require boots. Decent foraging habitat below bridge. |
| Rosecrans bridge over Coyote Creek (photo 65&66) | 19 | N | N | NA | Enclosed box beams | Barn swallow flying into mud nest under bridge. Three barn swallows in nest. Black phoebe nearby. Four large culverts SW of bridge and outside of buffer, but have high potential for bat roosts. Two culverts SE of bridge are covered. |
| Train bridge over Coyote Creek (photo 67&68) | 19 | N | N | NA | Steel girders | Cement crevices between girders. Closed culverts near bridge. |
| Culvert NW of | 19 | NA | NA | High | Cement | Large and should be explored |

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| train bridge over Coyote Creek (Photo 69) | | | | | | further. Has low water coming out so boots recommended. UTM: 0403686 E, 3752171N. |

## Photographs

**1)** 1st St. Bridge – N side



**2)** 1st St Bridge – Under E end over train tracks surveyed



**3)** 4th St. Bridge – E end surveyed



**4)** 4th St. Bridge – S side view from W end



**5)** 6th St. Bridge – N side

**6)** 6th St. Bridge – part of W side surveyed



**7)** I5 over Garfield – N side



**8)** I5 Bridge over Garfield – under bridge



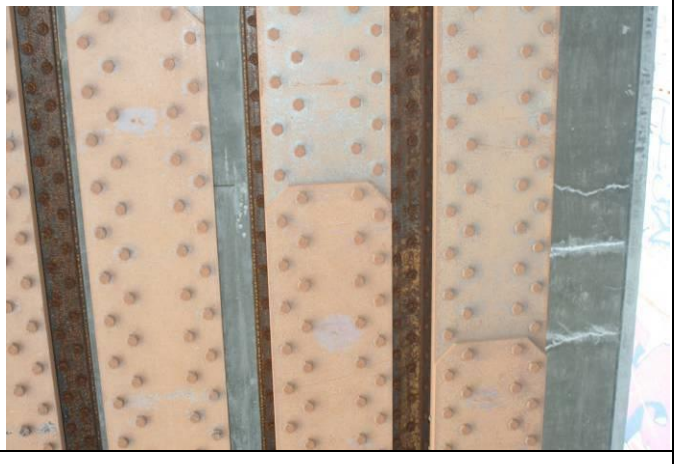

**9)** Train bridge over Telegraph – S side




**10)** Train bridge over Telegraph – underneath



**11)** Train bridge over Garfield



**12)** Train bridge over Garfield - underneath



**13)** Bridge over Greenwood – N side



**14)** Car bridge over Greenwood - underneath




**15)** Train bridge over Greenwood - underneath




**16)** Train bridge over Rio Hondo River – N side




**17)** Train bridge over Rio Hondo River – underside with



**18)** Culvert entrances SE of train bridge over Rio Hondo

mud nest



River



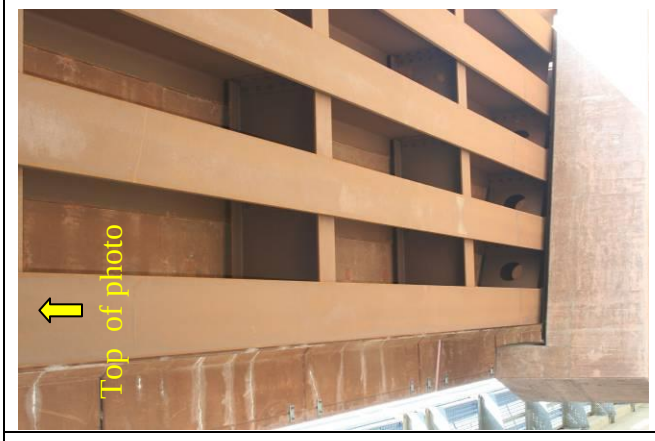
**19)** Cycling bridge N of train bridge over Rio Hondo River



**20)** Train bridge over Paramount



**21)** Steel girder bridge over Paramount – underside

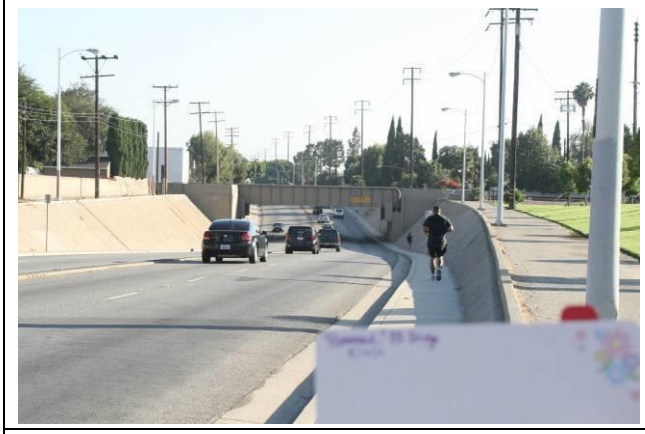



**22)** Cement slab bridge over Paramount – underside



23) Train bridge over Rosemead

24) Train bridge over Rosemead – underneath two spans



**25)** Bike path bridge on E side of Santa Ana River



**26)** Train bridge over Santa Ana River – facing S



**27)** Train bridge over Santa Ana River - underneath



**28)** Check dam south of train bridge over Santa Ana River – facing W; culvert visible on W side



**29)** I5 bridge over Santa Ana River – N side




**30)** I5 bridge over Santa Ana River – underneath



**31)** Culvert to NE of I5 bridge over Santa Ana River



**32)** Train bridge over cycling path on W side of Santa Ana River




**33)** Train bridge over Katella – S side



**34)** Train bridge over Katella - underneath



**35)** Train bridge over Lewis



**36)** Train bridge over Lewis - underneath



**37)** Train bridge over Lincoln




**38)** Train bridge over Lincoln - underneath



39) Raymond retarding basin culvert – E side of tracks



40) Raymond retarding basin – NE portion of basin outside of 500ft buffer; view facing S.



41) Carbon creek entering into Raymond Retarding Basin –



42) Bridge over Fullerton Creek

facing S





43) Train bridge over Lemon

44) Train bridge over Lemon – underneath with mourning dove nesting on top of light fixture





**45)** Train bridge over Harbor (72) – N side

**46)** Train bridge over Harbor (72) – underneath





**47)** Train bridge over Highland

**48)** Train bridge over Highland - underneath



**49)** Train bridge over Euclid



**50)** Train bridge over Euclid - underneath



**51)** Train over Commonwealth – E side



**52)** Train bridge over Commonwealth – underneath



**53)** Train bridge over Gilbert



**54)** Train bridge over Gilbert - underneath



**55)** Train bridge over Dale



**56)** Train bridge over Dale -underneath



**57)** Dale road bridge over Brea Creek – E side



**58)** Dale road bridge over Brea Creek - underneath



**59)** Train bridge over Brea Creek



**60)** Culvert NW of train bridge over Brea Creek



61) Train bridge over Beach Blvd.



62) Train bridge over Beach Blvd. - underneath



63) Train bridge over Coyote Creek South



64) Train bridge over La Mirada Creek



**65)** Rosecrans bridge over Coyote Creek – N side



**66)** Rosecrans bridge over Coyote Creek - underneath





**67)** Train bridge over Coyote Creek – S side

**68)** Train bridge over Coyote Creek - underneath





**69)** Culvert NW of train bridge over Coyote Creek



## Discussion

Although no bats or evidence of bat roosts was found at any of the surveyed structures in the HST study area for biological resources, bats may have remain undetected in some structures. If so, such bats may inhabit the study area in such small numbers that they may remain undetected. For example, we scanned for bat guano under one bridge immediately after a man with a leaf blower cleared the sidewalk of debris. Had guano been present in small amounts on that sidewalk, it would likely have been blown away to a less visible area. Yet, bridges without any protective features (e.g. crevices or dark corners) are not be expected to harbor bat roosts.

Various other structures still need to be surveyed for bats and/or signs of bats. Some were listed and discussed in the above tables. Other bridges were quickly scanned in the field and/or deemed inaccessible at this moment via Google Earth maps. Additional bridges requiring train track access and LA River access include 7$^{th}$ St. (HST map 3), I10 and Olympic (HST map 4), Washington (HST map 5) and the three train bridges (HST map 5) near Washington bridge. Train track access will also be required for the Escalona (HST map 21) and 91 FWY (HST map 28) bridges. Access permission from Cal Trans will likely be required to survey the train bridge over I5 (HST map 10). Remaining structures in the HST study area that are not mentioned above can be evaluated for preliminary accessibility issues via Google Earth.