

**MEMORANUDUM OF UNDERSTANDING BETWEEN  
THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY  
AND THE CITY OF LOS ANGELES**

This Memorandum of Understanding ("MOU") is made and entered into by and between the ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY ("ACTA"), a joint powers authority, and the CITY OF LOS ANGELES, acting by and through its Board of Harbor Commissioners ("PORT") (collectively identified herein as "PARTIES").

WHEREAS the State of California, Department of Transportation ("State"), is in the process of replacing the Schuyler Heim Bridge ("Project");

WHEREAS the Project includes an environmental commitment to temporarily relocate Peregrine Falcons ("peregrines") nesting habitat from the existing Schuyler Heim Bridge to an adjacent location prior to demolition of the bridge and the State has determined that the Badger Avenue Bridge will be the best location for the temporary relocation;

WHEREAS the State and ACTA entered into a Cooperative Agreement on July 16, 2009 specifying responsibilities of the State and ACTA on the Project and Section I, paragraphs 16 and 17 of the Cooperative Agreement ("Attachment A") specify that ACTA will obtain the necessary permits, agreements, and/or approvals from appropriate regulatory agencies and that ACTA will be fully responsible for complying with and implementing any and all environmental commitments set forth in the environmental documentation, permits, agreements, and approvals for the Project; and

WHEREAS the City of Los Angeles Harbor Department owns the Badger Avenue Bridge and requested that ACTA enter into an MOU with the PORT in order to relocate the falcon nesting habitat to the Badger Avenue Bridge;

NOW, THEREFORE, in consideration of the mutual interests and benefits to be derived from the Project, the PARTIES agree as follows:

1. The PORT shall allow ACTA to temporarily relocate the peregrine nesting habitat from the existing Schuyler Heim Bridge to the Badger Avenue Bridge for the duration of the bridge construction.
2. Description of the relocation effort to and from the Badger Avenue Bridge, including monitoring and contingency provisions in case relocation back to the new Heim Bridge is not successful, is included in the Relocation Plan ("Attachment B").
3. Relocation of the falcon nesting habitat from the Schuyler Heim Bridge to the Badger Avenue Bridge will be conducted before the end of December 2010, or as reasonably possible thereafter and relocation of the falcon nesting habitat off of the Badger Avenue Bridge and back to the new

Schuyler Heim Bridge will be done when construction of the new bridge is completed, which is anticipated to be on or prior to December 31, 2014, or as reasonably possible thereafter.

4. The PORT shall provide all necessary rights of entry for ACTA staff and/or their consultants to conduct relocation and monitoring activities.
5. The PARTIES mutually agree that the PORT shall not contribute financially to the peregrine nesting habitat relocation except where the PORT is found to be solely responsible for injuries to the peregrines or damage to the nest or is found to be in violation of any state and/or federal laws, statutes and/or regulations regarding peregrines. The PARTIES further recognize and agree that the PORT has no authorization pursuant to this MOU to expend any funding for the activities contemplated under this MOU. ACTA shall be responsible for payment of any fees related to authorizations or permits required from the PORT for conducting the activities under this MOU and the Relocation Plan.
6. The PORT shall comply with all state and federal laws and regulations regarding the protection of the peregrines while they are on the Badger Bridge.
7. Where ACTA utilizes any consultants in conjunction with this Project, ACTA shall require their consultants to include ACTA and the City of Los Angeles Harbor Department, its boards, officers, agents, and employees as additional insureds to liability insurance provided by their consultants.
8. ACTA, and/or its consultant(s) shall be responsible for building a temporary nest on the Badger Bridge and conducting the relocation of the falcon nesting habitat from the Schuyler Heim Bridge to the Badger Bridge. ACTA, and/or its consultant(s), shall also be responsible for conducting monitoring work and contingency actions as needed until the peregrines are determined by the State to have been successfully removed from Heim Bridge and through completion of the first nesting season, anticipated around July 2011. ACTA shall be responsible for paying all costs associated with these activities.
9. ACTA, and/or its consultant(s), shall be responsible for monitoring the peregrines during construction of the bridge, after the completion of the first nesting season mentioned in Paragraph 8. The State and/or ACTA shall be responsible for paying all costs associated with these activities.
10. ACTA, and/or its consultant(s), shall also be responsible for conducting the relocation of the falcon nesting habitat off of the Badger Bridge and back to the new Schuyler Heim Bridge, including the removal of the temporary nest, upon completion of the new Schuyler Heim Bridge, as

well as be responsible for associated monitoring work. The State and/or ACTA shall be responsible for paying all costs associated with these activities.

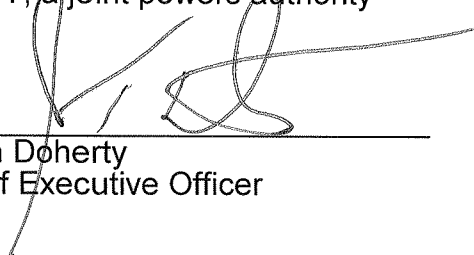
11. ACTA shall coordinate with the PORT'S Environmental Management Division, Engineering Division and Real Estate Division regarding all Relocation Plan activities, including construction of any kind, conducted on the Badger Bridge and agree to obtain all authorizations and approvals necessary from the PORT prior to entering onto or performing any activities or construction on the Badger Bridge.
12. The PARTIES mutually agree that this MOU may terminate on July 31, 2015, which is anticipated to be the end of the peregrines' first breeding season on the new Schuyler Heim Bridge. However, in the event that the peregrines' breeding season is not completed by July 31, 2015, as shall be determined in accordance with the Relocation Plan, then the PARTIES agree that the date of termination of this MOU shall be July 31, 2016.
13. Neither the PORT nor any officer, employee and/or agent thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by ACTA under or in connection with any work, authority, or jurisdiction conferred upon the ACTA under this MOU. It is understood and agreed that ACTA will fully defend, indemnify, and save harmless PORT and all of its officers, employees and agents from all claims, suits, or actions of every name, kind and description brought forth under, including, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by the ACTA under this MOU.
14. Neither the ACTA nor any officer, employee and/or agent thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by the PORT under or in connection with any work, authority, or jurisdiction conferred upon the PORT arising under this MOU. It is understood and agreed that the PORT will fully defend, indemnify, and save harmless ACTA and all of its officers, employees and agents from all claims, suits, or actions of every name, kind and description brought forth under, including, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by the PORT under this MOU.
15. This MOU, including "Attachment A" and "Attachment B" contains the complete and entire agreement of the PARTIES regarding the matters addressed herein and supersedes any prior written and/or oral agreements regarding all of these matters identified herein. Any additions, deletions, and/or modifications to this MOU shall be completely and

entirely in writing and signed by the respective representative(s) of the PARTIES identified herein.

IN WITNESS WHEREOF, the parties hereto have executed this MOU on the date to the left of their signatures.

ALAMEDA CORRIDOR TRANSPORTATION  
AUTHORITY, a joint powers authority

Dated: 12/8/10

By:   
\_\_\_\_\_  
John Doherty  
Chief Executive Officer

THE CITY OF LOS ANGELES, by its Board of  
Harbor Commissioners

Dated: \_\_\_\_\_

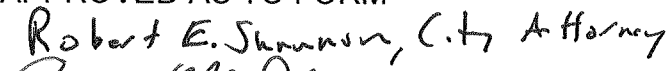

By: \_\_\_\_\_  
Executive Director

Attest: \_\_\_\_\_  
Secretary

APPROVED AS TO FORM

  
\_\_\_\_\_, 2010  
CARMEN A. TRUTANICH, City Attorney

APPROVED AS TO FORM

  
*Robert E. Shannon, City Attorney*  
  
\_\_\_\_\_, 2010  
Charles Gale, ACTA Co-Counsel

07-LA-47 PM 3.5/5.8  
SR47 Expressway  
EA 07271-238501 & 138201

District Agreement No. 07-4872

COOPERATIVE AGREEMENT

THIS AGREEMENT, ENTERED INTO, EFFECTIVE ON July 16, 2009, is between the STATE OF CALIFORNIA, acting by and through its Department of Transportation, referred to herein as "STATE", and

ALAMEDA CORRIDOR TRANSPORTATION  
AUTHORITY, a joint powers agency, referred to  
herein as "ACTA"

RECITALS

1. STATE and ACTA, pursuant to Streets and Highways Code sections 114 and 130, are authorized to enter into a Cooperative Agreement for improvements to State highways within the Cities of Los Angeles and Long Beach.
2. STATE and ACTA desire State highway improvements consisting of the construction of an expressway on State Route 47 from Ocean Boulevard to State Route 1 in the Cities of Los Angeles and Long Beach, referred to herein as "PROJECT".
3. STATE is willing to fund a portion of PROJECT in an amount that is comparable to the capital and support costs that would have been required to replace the Schuyler Heim Bridge in the absence of PROJECT, and ACTA is willing to fund the remaining portion of PROJECT.
4. The Project Approval and Environmental Document (PA&ED) for PROJECT was covered in a prior Cooperative Agreement executed by STATE and ACTA on February 5, 2004 (District Agreement No. 07-4656).
5. Construction of PROJECT will be the subject of a separate future agreement.
6. The parties now define herein below the terms and conditions under which the design and right of way acquisition for PROJECT are to be accomplished.
7. The terms of this Agreement shall supersede any inconsistent terms of any prior agreement relating to PROJECT.

SECTION I

ACTA AGREES:

1. To fund all design and right of way capital and support costs for PROJECT, except for the contributions from STATE that are described in Section II.
2. To have detailed Plans, Specifications, and Estimate (PS&E) prepared at no cost to STATE, except for the portion of the PS&E that is described in Section II, Article 1 to be furnished by STATE. ACTA shall submit the PS&E to STATE for review, concurrence, and/or approval at appropriate stages of development. The final PS&E for PROJECT shall be signed on behalf of ACTA by a Civil Engineer registered in the State of California. The landscape plans shall be prepared and signed by a licensed California Landscape Architect.
3. To have all necessary right of way maps and documents used to acquire right of way by ACTA prepared by or under the direction of a person authorized to practice land surveying in the State of California. Each right of way map and document shall bear the appropriate professional seal, certificate number, expiration date of registration certification and signature of the licensed person in responsible charge of work.

4. To permit STATE to monitor and participate in the selection of personnel who will prepare the PS&E, provide the right of way engineering services, and provide right of way acquisition services. ACTA agrees to consider any request by STATE to discontinue the services of any personnel considered by STATE to be unqualified on the basis of credentials, professional expertise, failure to perform, and/or other pertinent criteria.
5. To submit to STATE for review, comment, concurrence, and/or approval all Right of Way Engineering Land-Net Maps and Right of Way Appraisal Maps, Records of Survey, and Right of Way Record Maps all prepared in accordance with STATE's Right of Way Manual, Chapter 6, Right of Way Engineering, STATE's Plan Preparation Manual, STATE's Surveys Manual, applicable State laws, and other pertinent reference materials and examples as provided by STATE.
6. Personnel who prepare the PS&E and right of way maps shall be made available to STATE, at no cost to STATE, until completion of construction of PROJECT and acceptance by STATE of title to any property intended to be transferred to STATE.
7. To make written application to STATE for necessary encroachment permits authorizing entry of ACTA onto State highway right of way to perform surveying and other activities required for PROJECT. ACTA shall also require ACTA's consultants and contractors to make written application to STATE for the same necessary encroachment permits.
8. To identify and locate all utility facilities within the area of PROJECT as part of the design responsibility for PROJECT. All utility facilities not relocated or removed in advance of construction shall be identified on the PS&E.
9. If any existing utility facilities conflict with the construction of PROJECT or violate STATE's encroachment policy, ACTA shall make all necessary arrangements with the owners of such facilities for their timely accommodation, protection, relocation, or removal. The costs for PROJECT's positive identification and location, protection, relocation, or removal of utility facilities whether inside or outside State highway right of way shall be determined in accordance with Federal and California laws and regulations, and STATE's policies and procedures, standards, practices, and applicable agreements including, but not limited to, Freeway Master Contracts.
10. To furnish evidence to STATE, in a form acceptable to STATE, that arrangements have been made for the protection, relocation, or removal of all conflicting facilities within the State highway right of way and that such work will be completed prior to the award of the contract to construct PROJECT or as covered in the PS&E for said contract. This evidence shall include a reference to all required State highway encroachment permits.
11. To acquire and furnish all right of way outside of the existing State highway right of way and to perform all right of way activities, including all eminent domain activities, if necessary, and in accordance with procedures acceptable to STATE. These activities shall comply with all applicable State and Federal laws and regulations, subject to STATE's independent quality assurance to insure that the completed work is acceptable for incorporation into the State highway right of way.

12. To utilize the services of a qualified public agency or a qualified consultant in all matters related to the acquisition of right of way in accordance with STATE's procedures as published in STATE's current Right of Way Manual. Whenever personnel other than personnel of a qualified public agency are utilized, administration of the personnel contract shall be performed by a qualified Right of Way person employed or retained by ACTA.
13. To certify legal and physical control of right of way ready for construction and that all right of way parcels were acquired in accordance with applicable State and Federal laws and regulations, subject to review and concurrence by STATE prior to the advertisement for bids for the contract to construct PROJECT.
14. To deliver to STATE legal title to the right of way, including access rights, free and clear of all encumbrances detrimental to STATE's present and future uses not later than the date of acceptance by STATE of maintenance and operation of the highway facility. Acceptance of said title by STATE is subject to a review of a Policy of Title Insurance in the name of the State of California to be provided and paid for by ACTA.
15. To be responsible for the investigation of potential hazardous material sites within and outside existing State highway right of way that could impact PROJECT as part of performing work pursuant to this Agreement. If ACTA discovers hazardous material or contamination within the PROJECT study area during said investigation, ACTA shall immediately notify STATE.
16. To obtain, at ACTA expense, all necessary PROJECT permits, agreements, and/or approvals from appropriate regulatory agencies.
17. To be fully responsible for complying with and implementing any and all environmental commitments set forth in the environmental documentation, permits, agreements, and approvals for PROJECT. The costs of said compliance and implementation shall be a PROJECT cost. ✓
18. All aerial photography and photogrammetric mapping shall conform to STATE's current standards.
19. A copy of all original survey documents resulting from surveys performed for PROJECT, including original field notes, adjustment calculations, final results, and appropriate intermediate documents, shall be delivered to STATE and shall become property of STATE. For aerial mapping, all information and materials listed in the document "Materials Needed to Review Consultant Photogrammetric Mapping" shall be delivered to STATE and shall become property of STATE.
20. To account for all PROJECT costs to be paid for by STATE pursuant to this agreement.
21. To submit to STATE monthly itemized invoices for actual expenditures for right of way capital and support costs incurred by ACTA that are subject to reimbursement. The invoice package shall include supporting documentation in a form acceptable to STATE.

**SECTION II**

**STATE AGREES:**

1. At no cost to ACTA, to prepare the PS&E for all structures and nonstandard retaining walls for the segment of PROJECT between Ocean Boulevard and the Henry Ford Avenue interchange.
2. To reimburse ACTA for actual expenditures for right of way capital and support costs for the segment of PROJECT between Ocean Boulevard and the northern limit of the City of Long Beach. STATE's total obligation for reimbursement shall not exceed the amount of \$37 million for right of way capital costs and \$1.2 million for right of way support costs.
3. To pay ACTA within forty-five (45) calendar days of receipt of monthly invoice the actual expenditures incurred by ACTA that are subject to reimbursement.
4. At no cost to ACTA, to provide independent quality assurance of all work on PROJECT performed by ACTA or its consultants, to provide prompt reviews and approvals of submittals, and to cooperate in the timely delivery of PROJECT.
5. Upon proper application by ACTA and by ACTA's consultants and contractors, to issue, at no cost to ACTA and ACTA's consultants and contractors, the necessary encroachment permits authorizing entry onto State highway right of way to perform surveying and other activities required for PROJECT.

**SECTION III**

**IT IS MUTUALLY AGREED:**

1. All obligations of STATE under the terms of this Agreement are subject to the appropriation of resources by the Legislature, State Budget Act authority and the allocation of resources by the California Transportation Commission (CTC).
2. All obligations of ACTA under the terms of this Agreement are subject to the authorization of resources by the ACTA Governing Board.
3. The Project Report for PROJECT, approved on May 18, 2009, is by this reference, made an express part of this Agreement.
4. The design and right of way acquisition for PROJECT shall be performed in accordance with STATE's standards and practices current as of the date of performance. Any exceptions to applicable design standards shall first be approved by STATE via the processes outlined in STATE's Highway Design Manual and appropriate memorandums and design bulletins published by STATE. In the event that STATE proposes and /or requires a change in design standards, implementation of new or revised design standards shall be done as part of the work on PROJECT in accordance with STATE's current Highway Design Manual Section 82.5, "Effective Date for Implementing Revisions to Design Standards". STATE shall consult with ACTA in a timely manner regarding effect of proposed and/or required changes on PROJECT.

5. The party that discovers hazardous material will immediately notify the other party to this Agreement. HM-1 is defined as hazardous material (including but not limited to hazardous waste) that requires removal and disposal pursuant to federal or state law, whether it is disturbed by PROJECT or not. HM-2 is defined as hazardous material (including but not limited to hazardous waste) that may require removal and disposal pursuant to federal or state law, only if disturbed by PROJECT.
6. STATE, independent of PROJECT, is responsible for any HM-1 found within existing State highway right of way. STATE will undertake HM-1 management activities with minimum impact to PROJECT schedule and will pay all costs associated with HM-1 management activities. ACTA, independent of PROJECT, is responsible for any HM-1 found within PROJECT limits outside existing State highway right of way. ACTA will undertake, or cause to be undertaken, HM-1 management activities with minimum impact to PROJECT schedule, and ACTA will pay, or cause to be paid, all costs associated with HM-1 management activities.
7. If HM-2 is found within the limits of PROJECT, the public agency responsible for advertisement, award, and administration of the PROJECT construction contract will be responsible for HM-2 management activities. Any management activity cost associated with HM-2 is a PROJECT construction cost.
8. Management activities associated with either HM-1 or HM-2 include, without limitation, any necessary manifest requirements and designation of disposal facility.
9. STATE'S acquisition of or acceptance of title to any property on which any hazardous material is found will proceed in accordance with STATE'S policy on such acquisition.
10. A separate Cooperative Agreement will be required to cover responsibilities and funding for the construction phase of PROJECT.
11. Nothing in the provisions of this Agreement is intended to create duties or obligations to or rights in third parties not parties to this Agreement or to affect the legal liability of either party to the Agreement by imposing any standard of care with respect to the development, design, construction, operation or maintenance of State highways and public facilities different from the standard of care imposed by law.
12. Neither STATE nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by ACTA under or in connection with any work, authority or jurisdiction conferred upon ACTA under this Agreement. It is understood and agreed that ACTA will fully defend, indemnify and save harmless STATE and all its officers and employees from all claims, suits or actions of every name, kind and description brought forth under, including, but not limited to tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by ACTA under this Agreement.


13. Neither ACTA nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by STATE under or in connection with any work, authority or jurisdiction conferred upon STATE under this Agreement. It is understood and agreed that STATE will fully defend, indemnify and save harmless ACTA and all its officers and employees from all claims, suits or actions of every name, kind and description brought forth under, including, but not limited to tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by STATE under this Agreement.
14. This Agreement may be terminated or provisions contained herein may be altered, changed, or amended by mutual consent of the parties hereto.

STATE OF CALIFORNIA, acting by  
And through its Department of Transportation


WILL KEMPTON  
Director

By:   
DOUGLAS R. FAILING  
District Director

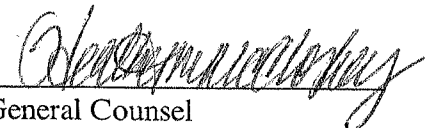
ALAMEDA CORRIDOR  
TRANSPORTATION AUTHORITY

By:   
JOHN T. DOHERTY  
Chief Executive Officer

Approved as to Form and Procedure

By:   
Attorney  
Department of Transportation

Approved as to form:

By:   
General Counsel

Certified as to Funds

By:   
District Budget Manager

Certified as to Financial Terms and Conditions

By:   
Accounting Administrator

**AMERICAN PEREGRINE FALCON RELOCATION PLAN FOR THE  
SCHUYLER HEIM BRIDGE REPLACEMENT PROJECT**

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**December 2010**

Prepared by:

**URS**

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## 1.0 INTRODUCTION

URS Corporation (URS) was contracted to prepare a relocation plan for American peregrine falcons (*Falco peregrinus anatum*) that have been nesting, in an artificial nest tray<sup>1</sup>, at the Commodore Schuyler Heim Bridge. The Commodore Schuyler Heim Bridge (Bridge No. 53-2618), (hereafter Heim Bridge) which spans the Cerritos Channel in the ports of Los Angeles and Long Beach, California is currently scheduled for demolition. A new bridge will be constructed to replace it (Fig. 1). The American peregrine falcon (hereafter "peregrines") are protected under the Migratory Bird Treaty Act (1918) and The California Fish and Game Code Sections 3503.5, 3511, and 3513. Peregrines are on the California Fully Protected Species List, which states, "Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock." (California Fish and Game Code Section 3511). For these reasons passive relocation is the preferred method to relocate the Heim Bridge peregrine pair.

To avoid disrupting existing and future breeding by peregrines on the Heim Bridge, the existing nest tray from the Heim Bridge must be removed and an alternate nest tray temporarily installed within the breeding territory. This document describes URS' plan for the passive relocation of peregrines from the Heim Bridge and includes the methods for removing the existing nest tray, specifies an alternate nest tray location, describes a biological monitoring program, provides requirements for construction and installation of a temporary nest box, and identifies contingency provisions if relocation efforts fail. In addition, this document provides a succinct framework for adaptive long-term management of peregrines within the ports of Los Angeles and Long Beach (Ports). All recommended contingency actions in this document requiring entering nesting areas, removing or installing nest structures, and/or handling peregrine falcons or their eggs will be conducted by a qualified biologist holding the appropriate State and Federal permits.

## 1.1 BACKGROUND

The history of peregrine breeding in the ports from 1986 to 2010 shows a dynamic and continuing increase in the number of territories being occupied and re-occupied (Table 1). All of the sites in Table 1 were monitored annually to document the peregrine recovery trend in southern California. Prior to 1986, no peregrine falcons had nested in the Long Beach area, experts suggest this is likely a consequence of DDT usage. In March 1997, URS biologist Brian Latta, as part of the Santa Cruz Predatory Bird Research Group's (SCPBRG) Peregrine Falcon recovery activities, installed a nest tray on the Heim Bridge within the northeast corner of the south tower. According to the SCPBRG, there were only three known breeding pairs of peregrines inhabiting the ports in the spring of 1997. Field data from spring raptor surveys of the ports in 1997, suggested that a new pair of peregrines were attempting to nest on the Heim Bridge. To help facilitate nesting, a nest tray was installed. A pair of peregrines laid eggs and raised a brood of four young using the nest tray. This pair of falcons had previously nested on the Gerald Desmond Bridge in 1995 and 1996 (Sipple 2010). From 1997-2009 the Heim Bridge has been continuously occupied by a pair of peregrines, and from 2001-2008 the Heim and Desmond bridges have been occupied by breeding peregrine pairs. In 2009, nine different territories in the Ports were inhabited by distinct pairs of breeding peregrines (Fig. 2).

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<sup>1</sup> Installation of an artificial nest tray filled with a gravel substrate is a standard method for improving the reproductive success of peregrine falcons attempting to nest on buildings or bridges (Cade et al. 1996).

At the start of the 2010 breeding season, URS biologist Brian Latta observed, on several occasions, an adult male and a adult female peregrine driving red-tailed hawks (*Buteo jamaicensis*) and other raptors (birds-of-prey) away from the known Heim Bridge territory. However, this formal biological monitoring of the peregrines was discontinued prior to intensive courtship and egg-laying when the demolition of the Heim Bridge was postponed. Subsequently, the construction is scheduled to start in the spring of 2011 and extend through the end of 2015 (spanning four peregrine nesting seasons).

Figure 1

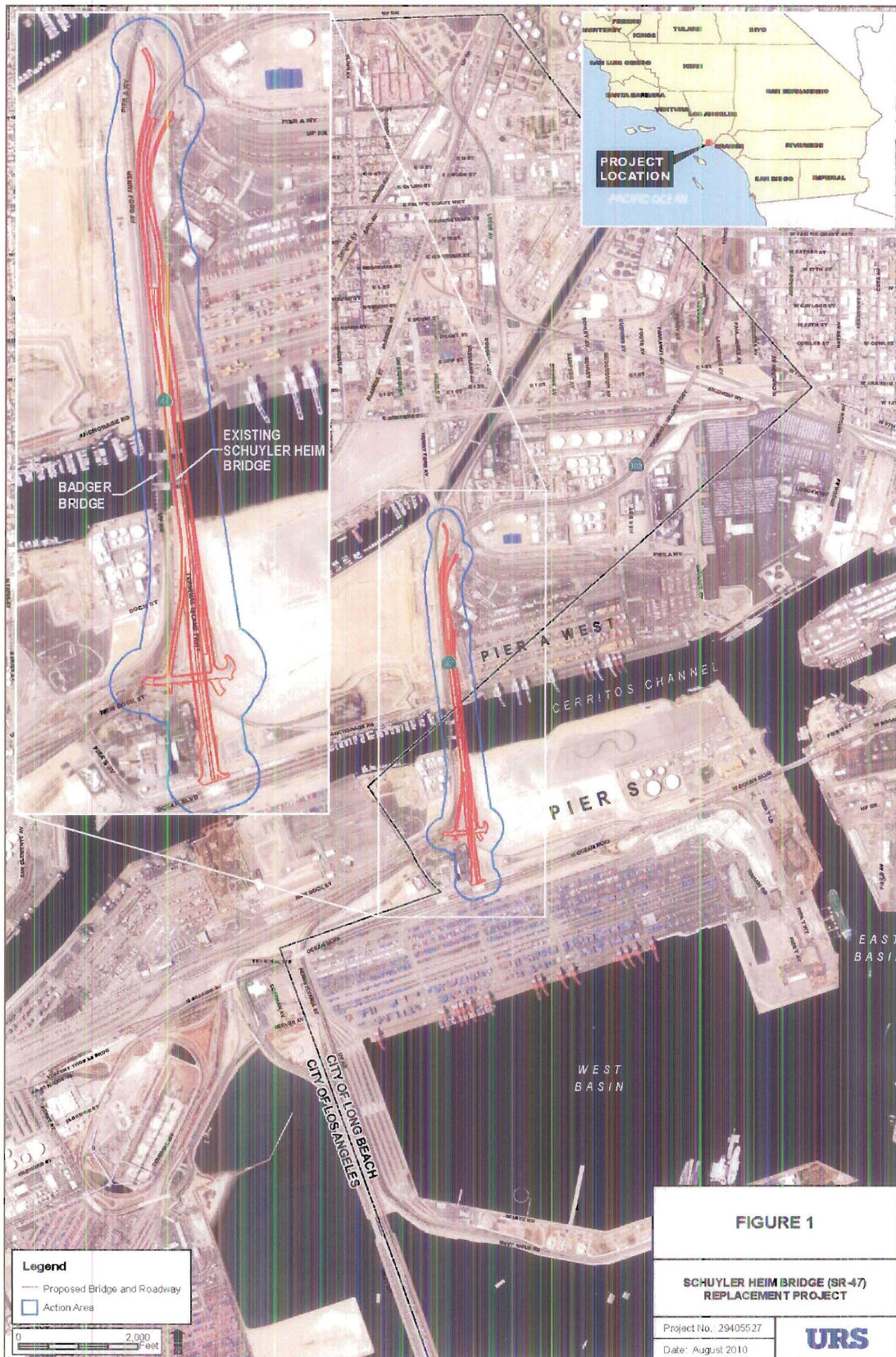


Figure 2



**TABLE 1. HISTORY OF PEREGRINE FALCON BREEDING IN THE PORTS OF LOS ANGELES AND LONG BEACH FROM 1986 TO 2010**

Territory	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Vincent Thomas	AC	AC	IA	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Long Beach City Hall	-	-	-	-	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	Unk	AC	IA	AC	IA	Unk	IA	IA	IA	AC	AC
Long Beach Silo	-	-	-	-	-	AC	AC	AC	AC	AC	IA	IA	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Desmond Bridge	-	-	-	-	-	-	-	-	-	AC	AC	AC	IA	IA	AC	IA	AC	AC	AC	AC	AC	AC	AC	AC	AC
West Basin	-	-	-	-	-	-	-	-	-	-	-	-	-	AC	AC	AC	OC	AC	IA	Unk	IA	AC	OC	AC	AC
Heim Bridge	-	-	-	-	-	-	-	-	-	-	-	-	AC	AC	OC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Island Grisson	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AC	Unk	Unk	Unk	IA
Island White	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AC	Unk	Unk	Unk	OC
Point Fermin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AC	AC

**AC** = Active; breeding attempted

**OC** = Occupied, by at least one falcon; no breeding attempted

**IA** = Inactive; no peregrines present during the breeding season

**Unk** = Not enough data to determine Activity/Occupancy

**-** = No peregrine breeding activity documented

## 2.0 METHODS

Passive relocation of the Heim Bridge peregrines can be accomplished by the removal of the existing nest tray and providing an alternate nest tray in a suitable location that is already frequented by the pair or within sight of the existing nest structure. With careful planning and appropriate timing, passive relocation can be done relatively inexpensively and with little or no disturbance to the falcons. In contrast, active relocation would involve the capture of and translocation of the Heim peregrines. This method is time-consuming, highly stressful to the birds, and may require permits that are unobtainable given the nature of the Project and the protected status of peregrines in California. For these reasons, passive relocation is considered the proffered method to relocate the Heim Bridge peregrines.

### 2.1 REMOVAL OF THE EXISTING NEST TRAY AND INSTALLATION OF A NEW NEST TRAY

In order to avoid disrupting the 2011 breeding of the peregrines, the current nest tray should be removed and the alternate nest tray installed prior to the start of the 2011 breeding season (December 2010 – July 2011) - before the start of the project construction. For peregrines in southern California, courtship begins toward the end of December, when the daily photoperiod begins to lengthen (Ehrlich et al. 1988). Egg-laying can begin as early as the last week of February (Ehrlich et al. 1988). Therefore, removal of the current nest tray and installation of the alternate nest tray should be completed no later than December 21<sup>st</sup>, 2010.

The Heim Bridge nest tray can be accessed from a window in the northeast corner of the machine house. The machine house is located at the top of the south tower of the Heim Bridge. The nest tray should be removed during the non-breeding season - between August and late December (Cade et al. 1996). The gravel substrate will be removed from the nest tray with a trowel, deposited into sandbags, and removed. The stainless steel cable securing the nest tray to the window frame will be cut and the nest tray removed. Any loose substrate on the ledge will be swept up and placed in sandbags as well.

The breeding territory is estimated to be within a 1-mile radius of the location of the current nest tray, with the current nest considered to be the center of the territory. The size of the breeding territory was estimated using the following:

- Daily home range data from a 1997-98 radio-telemetry study of peregrine falcons in the Long Beach Harbor and San Diego Bay areas (Metz et al. 1999);
- Proximity of adjacent peregrine falcon territories within the ports; and
- Known movements of the Heim Bridge peregrines.

Biologically, the South Tower of the Badger Bridge – located  $\leq 100$  ft west of the Heim Bridge (Fig 3) is the preferred alternate nest tray location due to its proximity to the existing nest tray, and similarities in structure and height, and because the Heim Bridge peregrines were observed in 2009 perching and caching uneaten prey items there. Three locations on the South Tower of the Badger Bridge have been identified as possible locations for a temporary nest tray. All locations are subject to approval from State and local agencies:

- Triangular splice plate near the top of the southwest leg of the South Tower;
- Platform landing above the South Tower counterweight; and

- The roof of the South Tower.

Nest tray removal should take two biologists approximately 8 hours to complete, and will not disrupt bridge operations. A new nest tray should be constructed for temporary installation at the South Tower of the Badger Bridge within the known breeding territory of the Heim Bridge peregrines. The alternative nest tray should be constructed of lumber (or equivalent material approved by a qualified biologist) using a 2-inch x 4-inch frame, plywood (or equivalent material) for the bottom, and 2-inch x 4-inch blocks for the footings. Stainless steel deck screws are recommended to fasten all of the parts together. Drain holes should also be drilled in the floor of the nest tray and porous drain cloth stapled over the holes to prevent the gravel substrate from spilling through. The nest tray should be secured in place with a stainless steel cable or an equivalent material. The existing nest tray is rectangular and measures 2 ft wide, 3 ft long and 4 inches deep. The size and shape of the new nest trays can be modified to fit the locations identified for temporary installation, but should closely resemble the specifications detailed here.

The artificial nest tray will be placed on a level surface and secured in place with stainless steel safety cable or similar hardware. The placement will provide an unencumbered flight pathway to and from the nest tray or ledge on which it is placed. One inch of pea gravel will be placed in the bottom of the nest tray. Three inches of finer polished gravel will be placed on top of the pea gravel. The nest tray installation should take two biologists approximately 8 hours. Installation is not expected to impede operation of the Badger Bridge. Installation of the temporary alternate nest tray should occur prior to the removal of the Heim Bridge tray to give the pair an immediate alternative to the existing nest and decrease the possibility of the pair considering another location on the Heim Bridge for nesting. A minimum horizontal disturbance buffer of roughly 100 feet should be put into effect around the temporary alternate nest tray on the Badger Bridge in late December, at the beginning of the breeding season - to avoid discouraging the peregrine pair from relocating there. A "disturbance buffer" is an area around the intended nest site that will be kept free of human activity to the greatest extent practical, to create an environment which is conducive to successful falcon relocation.

Figure 3



## 2.2 RELOCATION TO PERMANENT NEST STRUCTURE – POST CONSTRUCTION

Upon completion of the SR-47 bridge replacement (scheduled for end of 2015/beginning of 2016), the peregrine pair will be passively relocated to the new permanent nest structure being incorporated into the design of the bridge, prior to the onset of the 2017 breeding season (by December 21, 2016). In its current design, the new permanent nest structure will be a tray constructed of 14 gauge stainless steel measuring 4 feet long, 3 feet wide, and 6 inches deep. The top edges of the tray will be covered with a lip made from ½ inch diameter PVC pipe that has a groove cut lengthwise to allow it to be slipped over and glued to the top edge. The floor of the tray will have a grid of ½ inch drain holes drilled spaced 6 inches on center. The floor of the nest tray will be covered by a lining of porous drain cloth to prevent the substrate (gravel) from spilling through the drain holes. The nesting substrate will be comprised of a 2 inch layer of pea gravel topped by a 4 inch layer of polished aquarium sand (fined polished gravel). The tray will be suspended approximately 4 feet below the road bed of the bridge by 4 ½ inch galvanized steel rods mounted in the corners. The tray should be located underneath the road bed on the southeast side of the Cerritos Channel and near enough to the southern support pier of the channel span to be protected from the prevailing onshore winds. It should be situated to provide a clear flight path to and from the nest from the north and east. Locating the nest structure within reach of a catwalk or ladder should provide access to the nest for the purpose of banding chicks and nest maintenance.

During the first Fall after completion of the SR-47 replacement bridge, the temporary alternate nest trays will be removed from the Badger Bridge, the locale will be cleaned up, and physical barriers (e.g. Nixalite bird spike strips) will be installed by a qualified biologist to prevent the peregrine pair from attempting to nest here again. Biological monitoring should continue as outlined below and a disturbance buffer of 100 feet should be established around the new permanent nest site on the Heim Bridge - at the beginning of the breeding season, to encourage relocation of the pair to the new bridge. If the peregrine pair resists efforts to relocate to the new permanent nest site on the Heim Bridge and they attempt to nest on the Badger Bridge, a qualified biologist will enter that location and install physical barriers to prevent them from establishing a new nest. If these attempts fail and the pair does lay eggs on the Badger Bridge, then a disturbance buffer may need to be created around that nest site for the duration of the breeding season and the contingency measures outline in Section 3.0 can be implemented with appropriate agency authorizations.

## 2.3 BIOLOGICAL MONITORING

Biological monitoring is intended too:

- Assess the effectiveness of passive relocation efforts;
- Evaluate the impact of construction activities on peregrines territories near the Heim Bridge demolition and replacement project, and
- Determine the need for implementation of contingency activities, if peregrines elect to utilize the Heim Bridge territory during bridge demolition and replacement activities.

Biological monitoring should commence in the Fall of 2010 prior to the start of construction activities and continue annually until 2017 is expected to be the end of the first peregrine breeding season after the Project's scheduled completion).

Due to the density of peregrine breeding territories and the dynamic nature of territory occupancy in the ports, biological monitoring before and during the breeding season is warranted to determine the efficacy of the temporary relocation efforts. Due to the mild climate, peregrines in the ports tend to be resident and defend their territories year round. In sharp contrast, migrant peregrines from harsher climates spend the fall and winter in central and southern America and the West Indies, augmenting the population and returning to their breeding territories in the spring (Ehrlich et al. 1988). During the breeding season (late December to July), monitoring will focus primarily on the Heim Bridge pair with a secondary focus on the other harbor area pairs up until egg-laying. After egg-laying, monitoring of the other harbor pairs will be reduced to census visits.

URS recommends bi-weekly biological monitoring be conducted as needed during the late fall of 2010 and winter of 2011 to determine territory occupancy and to determine the identity of individuals and the Heim Bridge pair through plumage variations and presence/absence of leg bands. The frequency of monitoring events should switch to as needed from mid February to May to track where the Heim Bridge pair intends to nest, determine the location of the actual nest site, determine egg-laying and onset of incubation, and hatching success/failure. After hatching, monitoring can switch back to bi-weekly until the chicks near fledging age (35-45 days) at which point daily monitoring should occur until the chicks fledge and are making successful flights and landings. Chicks produced by the Heim Bridge pair should be banded in the nest at about 21 days of age with an alpha-numeric visual identification band and a USGS bird band by a qualified biologist so that the number of chicks can be determined and their progress tracked during and after fledging.

Young peregrines are inherently vulnerable during the fledging period, especially in urban habitats (Cade et al. 1996). Fledglings in cities often land in dangerous locations, on the ground, or in the water at the end of their first flights. Daily monitoring of the Heim Bridge nest site during the fledging period, (when the young are 35 – 45 days old), can determine if young peregrines fledge successfully and track their movements as they make their first awkward flights and landings. In the event that a young peregrine lands in a dangerous location, a qualified biologist may be able to remove the fledgling and place it back in the general location of its nest.

### **3.0 ADAPTIVE MANAGEMENT**

The primary objectives of this plan are to 1) maintain the historic number of peregrine breeding territories within the ports, 2) avoid negatively affecting annual peregrine reproductive success during the Heim Bridge demolition and replacement, and 3) provide a permanent nesting location on the new bridge.

The artificial nest tray placed at the South Tower of the Badger Bridge should be inspected and maintained (old prey remains removed, gravel added, and if needed - the integrity of the tray itself and its security cables will be checked) after each breeding season during construction (construction is expected to last through 4 breeding seasons).

Additionally, some latitude, within the law, is needed to deal with issues of nesting peregrines within the ports on a case-by-case basis. This adaptive structure is needed so a qualified biologist - in concert with the resource agencies - can take into account practical issues of falcon biology, species localized sensitivities, regulatory status, port operations, Heim Bridge demolition and replacement.

In the interest of working cooperatively with resource agencies, an activity-exclusion and active-monitoring buffer of around 100 feet should be maintained around active falcon nest sites from the egg-laying through fledging portion of the breeding season (Feb-July) for non-routine, non-emergency activities. Routine activities, such as passing trains, traffic, raising and lowering of bridges, etc., occur frequently and are tolerated by nesting peregrines within their environment. Non-routine activities such as bridge inspection, painting, or presence of humans in unexpected areas are disruptive to nesting peregrines and their young and should be avoided unless there is a visual barrier between the nest site and the activity – or if individual animals appear to have acclimated/developed tolerance to anthropogenic disturbances, they could be monitored in place during port operations with agency consent.

For a few weeks prior to egg-laying, peregrine pairs spend a considerable amount of time at their intended nest site, performing mutual courtship displays and scraping out a dish-shaped hollow in the substrate in which to lay their eggs. The biological monitor should be able to determine if the peregrine pair appears to intend to nest somewhere on the Heim Bridge in lieu of the alternative nest site. In that event, a qualified biologist should attempt to exclude the peregrine pair from that location prior to egg-laying, using a physical barrier.

In the event that passive relocation efforts fail and the peregrine pair lay eggs on the Heim Bridge prior to or during demolition, some activities may need to be suspended temporarily. With permission from regulatory resource agencies, the following contingency actions could be employed:

- After 10 days of natural incubation (~17 days from the laying of the first egg), the eggs may be removed by a qualified biologist and artificially incubated at a permitted facility. The nesting substrate would be physically removed at the same time. The peregrine pair would be expected to lay a second clutch of eggs in 14 days, most likely in a different location. The young from the original clutch of eggs would be fostered into another active peregrine nest with young of the same age, or released at a peregrine release site (hack site). Construction activities could resume after removal of the first clutch of eggs, unless the pair attempted to re-nest on the Heim Bridge; or
- After 10 days of natural incubation, the eggs may be removed and two 14-day old peregrine falcon chicks, obtained from a captive breeding facility, could be fostered into the nest by a qualified biologist. The adult falcons would be expected to accept the chicks as their own and care for them. After 1 week, the chicks could be removed from the nest. Caring for a nestling causes the hormone levels of the adult falcons to drop to a level at which they would be unlikely to attempt to lay another clutch of eggs at the same locale (Sipple 2010).

While the first technique has the potential of halting construction activities for approximately 17 days, the peregrines will most likely lay a second clutch of eggs and the location they choose will be uncertain. The second technique will require halting construction activities for approximately 24 days from the laying of the first egg; however, the birds' breeding season will effectively be over for the year and construction can be resumed without further disruption.

All recommended contingency actions are subject to resource agency authorization and will be implemented by qualified biologists holding the appropriate State and Federal permits.

#### 4.0 ACTIONABLE THRESHOLDS

In the event that the following situations involving the Heim Bridge peregrine falcons occur on the Heim Bridge during construction hours, the subsequent actions should be taken to conform to state and federal regulations:

**TABLE 2. SUMMARY OF APPROPRIATE ACTIONS**

A peregrine falcon perches on the Heim Bridge.	No action required.
The peregrine pair engages in repeated courtship activity on a particular area of the Heim Bridge indicating intent to nest there.	A qualified biologist should be given access to that portion of the Heim Bridge to install a physical barrier to exclude the pair from that area prior to egg-laying.
The peregrine pair lays an egg on the Heim Bridge structure.	Stop work within a pre-determined disturbance buffer distance (i.e., 100 feet) from the nest and implement the contingency actions outlined in Section 3.0 until the conclusion of breeding activities (i.e. young have left or been removed from the nest).
A fledgling peregrine (e.g., first 3 days of flight) lands in the construction area or on roadbed of the Heim Bridge	Stop work in the vicinity of the peregrine until it can be safely removed from the area by a qualified biologist.
Post Construction - a peregrine pair engages in repeated courtship activity on a particular area of the Badger Bridge indicating intent to nest there instead of relocating to the new permanent nest site on the Heim Bridge.	A qualified biologist should be given access to that portion of the Badger Bridge to install a physical barrier to exclude the pair from that area prior to egg-laying.
Post Construction – a peregrine pair lays an egg on the Badger Bridge instead of relocating to the new permanent nest site on the Heim Bridge.	Stop work within a pre-determined disturbance buffer distance (i.e., 100 feet) from the nest and implement the contingency actions outlined in Section 3.0 until the conclusion of breeding activities (i.e. young have left or been removed from the nest).

## 5.0 REFERENCES

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