Chapter 2.0, Response to Comments

Volume 2
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9-735 Pandora Avenue
Victoria, BC
CANADA V8W 1N9
March 25, 2013

Mr. Christopher Cannon
Director of Environmental Department
Los Angeles Harbor Department
425 South Palos Verdes Street
San Pedro, CA 90731

Dear Mr. Cannon:

The proposed plan for Terminal Island’s redevelopment is a matter of great interest to many people—including people such as myself who live in other countries. Many of us still have historic ties to the City of Los Angeles and its surrounding regions. We are always delighted to read about the various projects for historic preservation of historic homes, theatres, and the many public venues that remind us of Old California and its remarkable history.

I would like to urge the Port and the Board of Harbor Commissioners to place a priority on preserving and reusing the historic buildings on Terminal Island. The remaining historic buildings are the last vestige of the tuna canning industry and the World War I and II shipbuilding programs. Like many old buildings, they can be adapted and reconfigured for new and very creative uses. Of particular concern is the proposed roadway realignments in the Terminal Island Land Use Plan. The historic canneries will have to be demolished and historic buildings destroyed in order to realign Seaside Avenue through Southwest Marine.

This seems unnecessary. With a little flexibility and creative input a way can be found to preserve this important social legacy and historic district for future generations. I hope you will consider this in the Port Master Plan Update.

Your kind consideration of this matter is greatly appreciated.

Sincerely,

Patricia M. Ross

Cc: Geraldine Knatz
Marcello Vavala
Comment Letter PR: Patricia Ross

Response to Comment PR-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment PR-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
From: S.A. Green <greest@yahoo.com>
Sent: Friday, March 29, 2013 10:32 AM
To: Ceqacommens
Cc: Commissioners: Knatz, Geraldine
Subject: Draft Program Environmental Impact Report and Port Master Plan Update

Please include an historic preservation element in consideration of environmental impacts in the Harbor Island area and in the update of the Port Master Plan.

When my children (now in their 20s) were toddlers, they enjoyed seeing the fishing fleet and the historic structures in the port area. This heritage should be preserved alongside efforts to update the port’s functionality.

Stanley Green, P.E.
P.O. Box 95
College Place, WA 99324
Comment Letter SG: Stanley Green

Response to Comment SG-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
From: LarryFarma@aol.com
Sent: Wednesday, April 03, 2013 9:22 PM
To: Ceqacomments
Cc: Knatz, Geraldine; Commissioners; mvavela@laconservancy.org
Subject: I urge adaptive reuse of historic Terminal Island buildings

I think that adaptive reuse is often a good way to save important features of historic buildings. Some important features of two historic neighborhood movie theaters of mine -- the Loyola Theatre and the Baldwin Theater -- were saved when these theaters were converted to office buildings.

Sincerely,

Lawrence Fafarman
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Comment Letter LF: Lawrence Fafarman

Response to Comment LF-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
From: Philip Belfer <philipbelfer@mac.com>
Sent: Wednesday, April 03, 2013 3:20 PM
To: Ceqacommerts
Cc: Knatz, Geraldine; Commissioners
Subject: Preserve Historical Terminal Island

Dear Mr. Cannon:
I am a resident of Long Beach and am concerned that future plans for Terminal Island in neighboring San Pedro/Wilmington may result in the destruction of historically and culturally significant structures. I believe that the Port of LA and the Board of Harbor Commissioners can come up with a plan that will expand rail access to the port and improve port facilities while retaining the historic aspects of Terminal Island for generations to come. While developing the commercial port of today is of extreme importance, so is preserving historic structures to inspire youth with our maritime past.

Los Angeles has time and again made the mistake of tearing down what should and could have been preserved. Not only do these historic structures remind us of the past, they also provide an opportunity for the Port of LA to engage with the community and bring in tourist dollars as well. Please do all that you can to preserve the WW I, WW II and cannery history of Terminal Island and make it accessible to the neighboring communities. Thank you for your consideration.

Sincerely,
Philip J. Belfer
Long Beach, CA
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Comment Letter PB: Philip Belfer

Response to Comment PB-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment PB-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
From: Jay Ross [ross_jay@hotmail.com]
Sent: Saturday, April 06, 2013 4:37 PM
To: Ceqacomments; Knatz, Geraldine; Commissioners
Subject: Terminal Island: Opposition to proposed plan

To
Christopher Cannon, Director of Environmental Management, Los Angeles Harbor Department
Geraldine Knatz, Port of Los Angeles' Executive Director
Board of Harbor Commissioners

I concur with the LA Conservancy that you should not demolish everything on Terminal Island. That's the easy way out, and you will create an area with no soul that no one will particularly want to visit. Historic buildings are attractive to patrons and tenants, not soulless architecture that will replace it.

The Port Master Plan Update should provide a path forward for preservation of Terminal Island's historic buildings. Preservation and reusing historic buildings should be made a priority, on par with other identified goals within the Plan.

Designated land uses and policies should allow for the adaptive reuse of historic buildings, rather than their demise. Flexibility is needed within the Plan to ensure historic buildings can and will be adaptively reused while also still addressing fundamental goals for the Port. Placing competing land uses over Southwest Marine's buildings severely limits their ability to be reused and adhere to the Plan.

Terminal Island's historic buildings can be successfully adapted for new uses. Every effort should be taken to look at creative reuse opportunities and public-private partnerships that can complement Port functions while preserving historic buildings.

Historic, cultural and archaeological resources should be clearly identified within the Plan. The entire Port has yet to be surveyed and not all eligible historic buildings are identified or even identified within the Plan. The remaining historic buildings are the last vestige of Terminal Island's World War I and World War II shipbuilding, tuna canning industry, and Japanese-American built environment. As the last physical link to the extraordinary heritage of Terminal Island, the historic buildings should be appropriately maintained and preserved.

Proposed roadway and rail realignments by the Port should be fully reevaluated, as they will directly call for the demolition of buildings at Southwest Marine. Realigning Seaside Avenue through Southwest Marine will further bisect the historic district and jeopardize its continued eligibility, as multiple buildings will be demolished.

Jay Ross
1721 Granville Ave
Los Angeles, CA 90025
Ross_Jay@Hotmail.com
310 979 9255
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Comment Letter JR: Jay Ross

Response to Comment JR-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment JR-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment JR-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment JR-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment JR-5:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment JR-6:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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Donna Etherton  
Pacific Yacht Landing  
Berth 203 #9, Wilmington, CA 90744  
(310) 549-8111

April 5, 2013

Michael Cham  
Port of Los Angeles  
Planning & Economic Development Division  
425 S. Palos Verdes Street  
San Pedro, CA 90731

Re: Comments on Draft Port Master Plan Update

Dear Michael,

Thank you for the opportunity to comment on the Draft Port Master Plan Update.

On behalf of all the Wilmington marinas, I would like to thank the Port for including the ARSSS redevelopment plan in the PMP update. Please include a connection to the ARSSS site in the Pedestrian Pathways and California Coastal Trail (Figures 3 and 4). See additional comments on pages 3 - 5 under 3.2.4 Goal 4: Increase Public Access to the Waterfront.

Questions: Figure 6, Planning Area 2

The marinas on the south side of the Consolidated Slip, Island Yacht Marina II and Leeward Bay Marina’s annex do not appear in this Figure. Hopefully this is just an oversight. If not, what is the Port’s intent?

The north side of the Consolidated Slip indicates maritime support, which is currently Manson Construction. It is our understanding that Manson will not be in that location beyond 2014. Is there another maritime support use being considered for that area? Is this area still under consideration as a future marina relocation site?

4.3 Demand for Recreational Boating Facilities

The PMP should reevaluate the need for recreational boatyard repair facilities. When the Port conducted a Boatyard Analysis in January 2012 there were two boatyards in the Port other than the small facility at Cerritos Yacht Anchorage. These two facilities are now closed. Ideally, there should be one boatyard site designated in the outer harbor and one in the inner harbor.

5.3.4 Other Projects

Relocation of SA Recycling

The updated PMP will analyze relocating SA Recycling eastward to Berths 206-207 to accommodate expansion of the Yusen container terminal. SA Recycling has stated several times in public hearings that it would not be financially feasible to move the scrap facility eastward. To
DE-5 do so could result in the loss of a 50-year Port tenant, a major exporter, and one of only two dry bulk facilities in the Port. SA has invested millions of dollars in environmental and site improvements, new technology and equipment, and is a valued community partner and good neighbor to all in the East Basin.

DE-6 Unlike SA, YTI’s operations are mobile. It seems to me that YTI could expand to Berths 206-209 without disrupting the East Basin or driving business and jobs out of the Port or further reducing Port diversity if a short elevated access road was constructed from Berth 212 to 209 over SA’s truck lanes. Please evaluate an elevated access road.

DE-7 For the last 7-8 years there have been 2 or 3 breakbulk ships per week unloading cargo at Berths 206-209 and an occasional auto carrier waiting for berth space at WWL, which has worked well with boating and marina uses in the channel. As 85 acres likely exceeds the needs for breakbulk, please evaluate a multi-use facility – breakbulk or dry bulk and container backlands. Additionally, emissions reduction technology should be made available to breakbulk ships and infrequent callers at these berths that do not have AMP capability.

DE-8 East Basin Marina Improvements

The updated PMP will also analyze constructing a breakwater in the East Basin marinas that would displace 170 boat slips, as shown below, to accommodate ships and protect the marinas from tug prop wash generated while moving ships into and out of Berths 206-209.

A breakwater would put Newmark’s Yacht Centre, a 65-year Port tenant out of business. Other than a small incident involving a tug maneuvering a Matson ship in extreme weather conditions about 10 years ago, I don’t recall any navigational incidents in the East Basin or Cerritos Channel in 30+ years that would warrant construction of a breakwater.

DE-9 According to Table 10, Planning Area 2 Acreages, the Wilmington marinas and Banning’s Landing combined occupy 32 acres of land and water space. This represents .4% of the Port’s 7,500 acres and approx. 2 miles, or 4.5% of its 43-mile waterfront.

DE-10 Even if Newmark’s 170 slips were relocated to Banning’s Landing,
a breakwater will reduce Wilmington’s public waterfront by approx. 2500 feet, or 1%.

It should be noted that the Wilmington marinas have been in the East Basin since the 1920’s. This is the only area in Wilmington designated for recreational boating. Please consider a use for Berths 206-209 that will not displace marinas or reduce Wilmington’s scarce waterfront.

3.2.4 Goal 4: Increase Public Access to the Waterfront

As part of a larger community, the Port will provide for enhanced public access to the waterfront and visitor-serving facilities including retail restaurants, museums and parks to both the local communities of San Pedro and Wilmington. Visitor-serving areas should connect with local commercial districts directly outside the port district, such as Downtown San Pedro and the Wilmington Avalon Corridor. Within visitor-serving areas, pedestrian and bicycle pathways should connect a series of commercial and open space destinations as well as allow the opportunity to network into regional resources such as the California Coastal Trail.

In the above side-by-side comparison of the San Pedro and Wilmington waterfronts it is clear that the community of San Pedro has multiple connections to a contiguous public waterfront, whereas Wilmington’s waterfront is fragmented with only one connection from the community to its waterfront at Banning’s Landing. Wilmington’s marinas are separated from the community by shipping terminals, major truck routes, rail lines and other heavy industrial uses.

There are potential opportunities in the next 20 years to enhance Wilmington’s public access to its waterfront by connecting all parts of its waterfront to the community.
For instance, these two projects, the proposed access road from Avalon Blvd to Leeward Bay Marina (part of phase II of the Berth 200 rail yard *) and the ACTA Truck Expressway (if amended to add an at-grade vehicular bridge to the support columns in the Consolidated Slip) can make this continuous connection from Banning’s Landing to the marinas and ARSSS open space possible.

This connection would also resolve the ingress/egress problems at the Henry Ford rail junction (above photos) by allowing pedestrians, bicyclists and motorists to enter and exit the East Basin marinas at Avalon Blvd, and provide an unobstructed route for police and other emergency response vehicles.

* PCAC recommendation #101 - 6/3/10 - Board approved staff recommendation to include an access road to Leeward Bay Marina in the Berth 200 rail yard project improvements, and to designate harbor land as right-of-way for the future access road to be constructed when Harbor funds become available.
It would further benefit the harbor area communities by creating a contiguous landscaped boundary around the Port as envisioned in PCAC recommendation #42, approved by the Harbor Commission 2/15/07, and improving linkages in pedestrian and bike paths and California Coastal Trail.

The Wilmington Boat Owners Association is working with the Port of Long Beach to create a tree-lined, landscaped buffer that will be planted on Port of Long Beach property along Shore Road from the wetland area to Island Yacht Marina II to help complete the landscaped boundary within the Wilmington marinas.

Please include in Goal 4 language that recognizes the Port’s intent of creating a physical, distinctive, recognizable, aesthetically landscaped Port boundary in the ongoing development of the LA Waterfront, as approved by the Harbor Commission on 2/15/07, PCAC recommendation #42.

Please review all PCAC recommendations to ensure Board approved projects and mitigation measures are carried forward to the updated PMP.

Thank you for considering these comments. I look forward to your responses.

Respectfully,

Donna Ethington, Board member
Port Community Advisory Committee
Wilmington Neighborhood Council
Wilmington Boat Owners Association
Comment Letter DE: Donna Ethington

Response to Comment DE-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-5:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-6:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-7:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-8:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
Response to Comment DE-9:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-10:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-11:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-12:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-13:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DE-14:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
April 6, 2013

Michael Cham
Harbor Planning and Economic Analyst
Planning and Economic Development Division
Port of Los Angeles
425 S. Palos Verdes St.
San Pedro, CA 90731

Dear Michael,

I would like to comment on the Port’s Master Plan. As you know our Central San Pedro Neighborhood Council was unable to forward the Port Relations’ committee recommendations to the full vote for the board which would have occurred on Tuesday, April 8. However, I am in full agreement with the committee’s recommendations:

1) That the Port maximize the use of its downtown San Pedro Cruise Terminal facilities before considering the construction of, or expansion to outer harbor cruise facilities e.g. at Kaiser Point
2) That the Port incorporate into its current Master Plan Update a method of tourist and visitor transportation between the waterfront, Cabrillo Beach and downtown San Pedro via street car or alternate light rail system.
3) That the Port dedicate a parcel of land on Terminal Island no smaller than one acre at the former site of the historical Japanese “Lost” Village and facilitate the construction of a Japanese History Museum on that site to commemorate the rich history and contributions which the Japanese people made to San Pedro.

Thank you for the opportunity to comment on this important plan.

Sincerely,

Linda Alexander, President
Central San Pedro Neighborhood Council
(title for purposes of ID only)
Comment Letter LA: Linda Alexander

Response to Comment LA-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment LA-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment LA-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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Cham, Michael

From: Sue Castillo <red sue12@gmail.com>
Sent: Saturday, April 06, 2013 1:32 PM
To: Cham, Michael
Subject: Comments on the Port’s Master Plan

Categories: Red Category

As a stakeholder within the boundaries of the Central San Pedro Neighborhood Council, I support the comments of Central San Pedro Neighborhood Council’s Port Committee which strongly requests the following:

1) That the Port maximize the use of its downtown San Pedro Cruise Terminal facilities before considering the construction of, or expansion to outer harbor cruise facilities e.g. at Kaiser Point.

2) That the Port incorporate into its current Master Plan Update a method of tourist and visitor transportation between the waterfront, Cabrillo Beach and downtown San Pedro via street car or alternate light rail system.

3) That the Port dedicate a parcel of land on Terminal Island no smaller than one acre at the former site of the historical Japanese “Lost” Village and facilitate the construction of a Japanese History Museum on that site to commemorate the rich history and contributions which the Japanese people made to San Pedro.

I appreciate the effort and intention of this Land Use Master Plan update and thank you, both for the opportunity to provide input, and for listening to Central San Pedro Neighborhood Council’s requests and incorporating them wherever possible.”

Sue Castillo
809 S. Grand Avenue
San Pedro, Ca 90731
Comment Letter SC: Sue Castillo

Response to Comment SC-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SC-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SC-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SC-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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From: LeFevre/Esparbens [solarium@pacbell.net]
Sent: Sunday, April 07, 2013 7:10 PM
To: Ceqacomments
Cc: Knatz, Geraldine; Commissioners
Subject: preservation of Terminal Island historic buildings

Christopher Cannon
Director of Environmental Management, Los Angeles Harbor Department

Dear Mr. Cannon,
I would like to take this opportunity to express how important I feel that the Master Plan Update allow Terminal Island's historic buildings to be adaptively reused. As a native Angeleno and one who now considers San Pedro my second hometown, I wholeheartedly support the preservation aspects of the important history of Terminal Island.
Please consider the following:

- That the preservation and reuse of historic buildings be on par with other identified goals within the Plan.

- Land uses and policies should allow for the adaptive reuse of historic buildings, rather than their demise. I was glad to hear at Thursday public hearing an example of artists wanting to incorporate art, restaurant and a brewery within these spaces.

- I understand that the entire Port has yet to be surveyed and not all eligible historic buildings are indicated or identified within the Plan. Let us acknowledge those who lived and worked on Terminal Island before being sent to internment camps during World War II, as Jeanne Wakatsuki Houston describes in her historical novel Farewell to Manzanar.

- These historic buildings are the last vestige of the Wars' shipbuilding, tuna canning industry, and Japanese-American built environment.

- I understand that proposed roadway and rail realignments by the Port should be fully reevaluated, as they will directly call for the demolition of buildings at Southwest Marine.

I hope that the revitalization of our waterfront and its future can stand alongside the preservation of Terminal Island's past.

Sincerely,
Christine Esparbens
1711 S Walker Ave
San Pedro, Ca 90731
Comment Letter CE: Christine Esprabens

Response to Comment CE-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment CE-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment CE-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment CE-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment CE-5:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment CE-6:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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Please, Please, Please, listen to the LA Conservancy regarding Terminal Island. Is California’s Japanese History to become obsolete? Architecture is history in form.

**LA CONSERVANCY RECOMMENDATIONS:**

- The Port Master Plan Update should provide a path forward for preservation of *Terminal Island’s historic buildings*. Preservation and reusing historic buildings should be made a priority, on par with other identified goals within the Plan.  
  - **DSS-1**

- *Designated land uses and policies should allow for the adaptive reuse of historic buildings, rather than their demise.* Flexibility is needed within the Plan to ensure historic buildings can and will be adaptively reused while also still addressing fundamental goals for the Port. Placing competing land uses over Southwest Marine’s buildings severely limits their ability to be reused and adhere to the Plan.  
  - **DSS-2**

- *Terminal Island’s historic buildings can be successfully adapted for new uses.* Every effort should be taken to look at creative reuse opportunities and public-private partnerships that can complement Port functions while preserving historic buildings.  
  - **DSS-3**

- *Historic, cultural and archaeological resources should be clearly identified within the Plan.* The entire Port has yet to be surveyed and not all eligible historic buildings are indicated or even identified within the Plan.  
  - **DSS-4**

- *The remaining historic buildings are the last vestige of Terminal Island’s World War I and World War II shipbuilding, tuna canning industry, and Japanese-American built environment.* As the last physical link to the extraordinary heritage of Terminal Island, the historic buildings should be appropriately maintained and preserved.  
  - **DSS-5**

- *Proposed roadway and rail realignments by the Port should be fully reevaluated, as they will directly call for the demolition of buildings at Southwest Marine.*  
  - **DSS-6**  

Denise and Stephen Smith
Comment Letter DSS: Denise and Stephen Smith

Response to Comment DSS-1:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DSS-2:
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Response to Comment DSS-3:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DSS-4:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DSS-5:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment DSS-6:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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Draft Port Master Plan Comments

My comments related to the Draft Port Master Plan fall into two categories: agreement with the Central San Pedro Port Committee comments, and additional comments related to Development Goal 3-1-5 of the Plan.

The Port Committee of the Central San Pedro Neighborhood Council at the beginning of the public hearing process on the Draft Port Master Plan generated a long list of recommendations which we wanted to be included in the revised Plan. We strongly stand by those recommendations and have added three additional ones for inclusion into the public comment record:

1. Before the Port builds any outer harbor cruise line facilities, the downtown cruise terminal should be at maximum use;

2. The Port will expand waterfront tourism and visitor transport between the waterfront, Cabrillo Beach and downtown San Pedro through expansion of the street car rails, or developing a system of light rail;

3. The Port will dedicate a parcel of land at least one acre in size on Terminal Island in order to construct a Japanese History Museum on the site of the historical Japanese Village, honoring and memorializing the contributions the Japanese people made to San Pedro;

My comments related to Development Goal 3-1-5 are twofold. One, I wholeheartedly agree that all historical resources within Port boundaries should be preserved. Preservation of historical resources, however, is much more than a simple monument, sign or video of the resource commemorating the resource once it has been destroyed for container backland storage. Secondly, I strongly urge the Port to develop a robust “historic resources policy” as stated in Section 3-1-5. Shouldn’t this type of policy have been developed before the Port began its revision of the Master Plan? Further, the development of this policy should be accomplished through public meetings that include interested local citizens, and groups that have expertise in preservation undertakings, such as the Los Angeles Conservancy and the Historic Trust.

Sincerely,

Frank B. Anderson
515 North Meyler St.
San Pedro, Ca. 90731-1840
H 3108339113 C3103875665
Fbmjer@aol.com
Comment Letter FA: Frank Anderson

Response to Comment FA-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment FA-2:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment FA-3:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment FA-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment FA-5:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
Subject: Port Master Plan Update

To: Michael Cham
Planning and Economic Development Division
Port of Los Angeles
425 S. Palos Verdes Street
San Pedro, CA 90731

Date: April 2, 2013

Statement submitted on behalf of SA Recycling to the Port of Los Angeles concerning the Draft Program Environmental Impact Report (PEIR) and the Port Master Plan Update (PMPU).

During the past year, SAR has participated in the various workshops and public hearings on the drafting and approval process of the Port master plan amendment. We are pleased to have the opportunity again to express our position on the revised draft Port document before it is submitted to the Board of Harbor Commissioners for its approval.

Though SAR in general supports the creation of a Mixed Use designation of 102 acres (which includes SAR’s current location) in the latest draft of the Port Master Plan Update, SAR does object to the condition which is stated on page 35 of the Master Plan Update as follows:

“This project would relocate the existing 26-acre dry bulk facility currently located at Berths 210-211 eastward to a similar sized facility at Berths 206-207. This relocation would only occur if container operations at the adjacent container terminal at Berths 212-226 were consolidated with Berths 210-211. If the Berth 212-226 container terminal does not expand, SA Recycling could remain at Berths 210-211”.

We urge the Port to remove this condition and recognize the need for SAR to remain in operation at its existing site. We would like to comment further on the revised draft Master Plan Update by offering, what we believe to be, a compelling argument for keeping the bulk scrap operation at the existing location. In fact, we suggest that the Port seriously consider providing SAR in the future with the use of an additional/adjacent wharf.
SAR-3 We have stated previously that during the past 50 years, SAR and its predecessor business entities have made enormous financial commitments to upgrade the site which was heavily contaminated and needed major infrastructure improvements. Since 1996 the company has spent millions on remediating the soil at the site thus saving the Port that expense. The company has also spent additional millions on infrastructure improvements such as upgrading the electrical grid, the storm water management systems and the water quality treatment facility, reinforcing the soil and constructing a new concrete cover and improving access into the site. SAR shared the expense 50/50 with the Port on constructing a new rail spur into the leasehold.

In addition to the land improvements, the company has spent huge amounts of its financial resources to construct a state-of-the-art electric shredder, upgrade its electric shear, install a non-ferrous metal recovery plant, and, most importantly, the company has implemented multiple environmental air quality and water control systems which are above and beyond most governmental regulations during the past 15 years. *(For a list of the major items please see footnote below*)*. SAR had received numerous air quality and other environmental awards for these projects and for its leadership role in meeting the public goals of “greening” the Port of Los Angeles. In 2010 SA Recycling received the San Pedro Bay Ports Clean Air Action Plan Air Quality Awards presented by the Ports of Long Beach and Los Angeles as a Significant Early Action to Reduce Emissions. To receive and be honored for this award SA Recycling retired, replaced, and retrofitted cargo-handling equipment at its facilities in both Ports, exceeding state clean-air regulatory requirements. In August of 2012, SA again was honored with a Clean Air Action Plan Air Quality Award for exemplary efforts to reduce air pollution from its local maritime and goods-movement operation. These awards, given by the Port exemplify the commitment SA Recycling has to the environment and the community it serves.

SAR-4 SAR’s recycling operation helps provide the region with the ability to meet the state mandated recycling goals while generating revenues for the Port and the City from one of its major exporting Port facilities. SAR’s electric shredder and shear operations process over a million tons of shredded and HMS #1 scrap annually, which is exported to over 15 countries around the globe. The facility at Terminal Island employs over 150 men and women (30% of them have been with the company for 30 plus years) and generates thousands of additional peripheral jobs in connection with its recycling activities. In fact, SAR generates more jobs per acre than most other tenants in the Port *(as a rule of thumb a container terminal hires approximately one job per acre, SAR generates 6 jobs/acre)*. SAR is committed and hopeful of adding to its workforce in the coming years.
Although in recent years the global and US economy had experienced a severe slowdown, which impacted the scrap business, we do anticipate that the market will gradually improve and the demand for SAR’s bulk products will grow. The shipment of scrap is once again starting to reach our historic volume of over 1 million MT/year and shipping by bulk is once again becoming more economical. Given this situation, the facility will be severely strained to accommodate the movement of the higher annual volumes. We anticipate that as the GDP continues to improve, there will be greater supply and demand for bulk scrap. It is imperative that SAR have the flexibility and the physical capability of responding to the constant fluctuations of the market and the economics of efficient and competitive shipment of the materials. We would like the Port to give serious consideration to expanding SAR’s leasehold by the addition of another Berth. For example, by being able to use Berth 209, the company could load two vessels simultaneously with products destined for overseas shipment. SAR may also possibly need an additional 5-10 acres of backland adjacent to the second wharf in connection with the ship loading operations. SAR’s anticipated growth in the volume of bulk shipments will benefit the Port with additional wharfage and dockage revenue. Scrap dry bulk shipments play a vital role in the region’s economy and contribute positively to the Port’s/City’s financial status. Therefore, it behooves the City to encourage and assist in the growth in the shipment of this very important bulk export product.

We believe that the Port’s estimates on future growth of the overseas shipment of scrap and related bulk products is understated at 1.2% (see Chart in Section 4.1.2) and should be more closely aligned with the estimated/projected growth in the GDP. Furthermore, this projection appears to be in conflict with the Port’s own, recent Scrap Metal Study which projected that recycling volumes will increase at a 3.1% (percent) compounded annual growth rate. SAR concurs with the findings of that Study and urges the Port to plan for that higher level of growth in the scrap market and provide for increased flexibility and efficiency in the shipment of such products at the existing site as the most advisable and feasible long term alternative.

For those reasons we want to work with the Port to find a workable solution that would address the Port’s goal of providing for additional terminal operations while protecting the future tenancy and expansion of SAR’s dry bulk export activities. As mentioned previously, the Port’s latest draft Plan states that “relocation (of SAR) would only occur if container operations at the adjacent container terminal at Berths 212-226 were consolidated with Berths 210-211. If the Berth 212-226 container terminal does not expand, SA Recycling could remain at Berths 210-211”.

We urge the Port to delete this condition and instead consider an engineering solution put forth by SAR that would provide for a feasible, physical connection between the two terminal ports.
areas (Berths 212-226 and Berths 206-209) that are separated by the SAR leasehold. During the past months we have proposed to the Port an alternative of constructing an elevated roadway which would connect the two terminal areas without having to relocate the bulk scrap operations. By constructing such a connection the Port could provide an operational link between the adjoining container terminals, while allowing SAR to stay at its current location. We also believe that such an option would be significantly less costly than the prohibitive costs associated with an attempted relocation of SAR, which most likely would result in the likely shutdown of that operation and the loss of hundreds of jobs.

As we have stated previously in our formal submittals to the Port, SAR believes that there are serious complications presented by the Port’s proposed relocation alternative. The complications we foresee with the possible relocation of SAR to Berths 206-208 are the following:

- SAR has concerns that the Port Plan is placing two incompatible uses in close proximity of one another and does not address the various, potential conflicts that inevitably would arise when such incompatible uses—industrial and the other recreational—are located next to each other.

- The proposed site configuration is too narrow to accommodate the key operational elements such as the mega-shredder, the shear, the rail spur and having a sufficient area for ship loading, which would, at best, mean a drastic reduction in the scale of operations and the level of employment.

- The site is limited to the loading of one ship at a time which negatively impacts the company’s ability to efficiently load the multiple vessels which frequent the company’s berth. The efficiency of the company’s bulk loading capacity has been curtailed in the past as well as currently by the limitations of a shorter than preferred, needed wharf. Instead, SAR is in need of a second Berth.

- The relocation site is also too small to accommodate any future expansion. Given the projected volumes of scrap in the Port’s Scrap Metal Study, in about 15 years the relocation site will be at least 10-15 acres too small to accommodate such growth in the volumes.

- The new facility would have to be fully upgraded to withstand the weight of scrap metal piles along with the existing old wharf where the pavement thickness is currently insufficient for the use of the large cranes used by SAR for loading scrap onto the
docked vessels. Prior to that, the entire site will have to be fully upgraded to the standards required for SAR’s type of recycling operation.

- We also foresee a serious problem with the rail alignment going to YTI’s future, expanded terminal which will cause continuous and unavoidable disruptions at the front gate of SAR. The proposed site also will require a suitable rail spur into the SAR site (with appropriate grade, switch control, rail curvature that can accommodate multiple rail car access to the site).

- Even if the above stated deficiencies at the new site can somehow be addressed and resolved, SAR believes that the logistical aspects of any relocation in the future would be extremely problematic. The availability of the new site will need to be coordinated with SAR’s relocation. This means that SAR will be forced into a duplicate operation as SAR must be able to continue to operate at its current location until all key elements are in place and operational at the new site; such as the rail, the wharf, the shredder, the shear, the MRP and other components, to assure that SAR will not have to shut down its operations and layoff its workers for any period of time prior to its move.

- Clearly, from our perspective the relocation site has serious deficiencies. Coupling that with the enormity of the cost of moving our entire operation would seriously jeopardize the company’s ability to relocate. If the current recycling facility at Berths 210-211 is removed and shut down, according to the Port’s Staff Report: “the region would not have enough capacity to meet demand unless a new facility is built.” We agree. However, the smaller recycling facility at the suggested relocation site is not financially and operationally feasible and should be discarded as an alternative.

- Finally, SAR would like to express its objections to debating the merits of relocating SAR at this point in time. It was not that many years ago when we were assured by Port management that our current site suited the Port’s long term plans. Based on that assurance, the company moved ahead with the investment of tens of millions of dollars in new equipment and facilities. Those sunk costs will need years to recapture. To relocate our business in the near future could result in major operational disruptions and certainly would require considerable additional costs for constructing new facilities and equipment, as we have stated previously, some of which- such as a mega shredder- may not be able to be permitted at the location next to the recreational small craft marinas. Also, the prohibitive cost of such an undertaking would take additional decades to recover.
SAR-17  Recommended solution:

SAR appreciates the Port’s efforts at finding a long term solution for the continued presence of SAR’s dry bulk operations. We do believe that such an effort should be based on reality. For the reasons stated above, the Port needs to recognize the fact that the option of relocating SAR’s operation to Berths 206-208 is clearly unrealistic and infeasible. We strongly urge the Port to reconsider and discard any option which negates an opportunity for SAR – a tenant at the Port for 51 years - to continue to be a valuable and viable tenant at the Port for decades to come and encourage the Port staff to work with SAR to address the issues presented by the continued tenancy of SAR at its current location. We believe that this option is the only feasible one. At the same time we also recognize that some changes in SAR’s circumstances may be warranted given the Port’s goal of marketing the surrounding area as a viable container terminal. SA Recycling supports the draft Port Master Plan Update as long as it allows for continued bulk operations at Berths 210 and 211, as well as for the possible addition of another wharf available for loading bulk cargo and the construction of an elevated connecting roadway between the two adjacent terminals, but have serious reservations about any plan that would relocate the dry bulk scrap operations. Thank you for your consideration.

Statement submitted by Barna Szabo on behalf of SA Recycling on April 2, 2013

SAR-18  *Footnote:

The improvements implemented at SAR’s Terminal island facility are as follow:

1) Paved all 23 acres, raising the ground level to 6’ in 1998
2) Installed 24" underground pipes to handle the water storm system 1998
3) Installed 10 water tanks holding 750,000 gallons of reusable water and upgraded onsite advanced water treatment system; one of the most cutting-edge systems in the country
4) Upgraded the rail road system to handle 16 RR cars in 1998
5) Placed the mega shredder in service in 2006 and Regenerative Thermal Oxidizer (RTO) in 2011 - air filtering system
6) Metal recovery plant upgraded in 2010
7) Constructed steel sound wall around the water front and east side
8) Added new employee lunch room and locker room
9) A majority of our equipment has been upgraded to Tier III engine diesel emission standards.

The balance will soon to follow.

The cost of all these improvements totaled around $88.5 MM during the last 15 years.

For the proposed schematics of the elevated terminal connecting road way please see attached.
Comment Letter SAR: SA Recycling

Response to Comment SAR-1:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-2:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-3:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-4:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-5:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-6:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-7:
This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
Response to Comment SAR-8:

The Expanded Terminal Project is addressed in the PEIR as an “other” project, which is defined as “projects that have been approved in a certified CEQA document and/or are undefined (i.e., in the conceptual design stage) that are identified for public disclosure purposes, consistent with the PMPU.” Since some projects included in the PMPU, such as the Expanded Terminal Project, are in the conceptual design stage, sufficient project details are not available to support a programmatic evaluation of potential impacts. These other projects are addressed in Draft PEIR Chapter 4.0, Cumulative Analysis.

The existing SA Recycling facility is proximal to the East Basin marinas, where recreational vessels are berthed. Relocating SA Recycling to an adjacent berth would not be expected to alter existing conditions with respect to the potential for interferences with recreational boating in the vicinity of the East Basin marinas.

Response to Comment SAR-9:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-10:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-11:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-12:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-13:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-14:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
Response to Comment SAR-15:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-16:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-17:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment SAR-18:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
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Cham, Michael

From: Saiget, Thomas K <thomas.k.saiget@exxonmobil.com>
Sent: Thursday, April 04, 2013 9:37 AM
To: Cham, Michael
Subject: Comments on the Port Master Plan Update

Msg Class: Unclassified

Hey Michael,

Could you please record our comments on the Port Master Plan Update? I did not see an input form like the Draft PEIR.

ExxonMobil Pipeline Company requests that the Port Master Plan Update and Program Environmental Impact Report designate Southwest Terminal Area 2 as dual usage, Container and Liquid bulk.

The rezoning of the area north of the Terminal Island Water Reclamation Plant from liquid bulk to container will result in an unnecessary environmental impact due to the deconstruction of fully functional liquid bulk tanks and reconstruction of new tanks less than a mile away. The environmental impact of the demolishing and remediating the existing site, producing new tanks, reconstructing the tanks at a new site, and extending infrastructure to the new site should be included in the EIR. The Port should also consider the financial loss associated with liquid bulk tenants if relocations were forced upon them because of the cost burden. This could significantly impact the Port’s ability to diversify revenue and import liquid bulk commodities necessary to meet California’s projected energy demand.

Thomas K. Saiget
Business Development Advisor
ExxonMobil Pipeline Co.
D: (713)-656-9694
M: (832)-317-1697
Response to Comment EXXON1-1:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.

Response to Comment EXXON1-2:

This comment addresses the PEIR and states that the impacts of demolishing and remediating the existing site, producing new tanks, reconstructing the tanks at a new site, and extending infrastructure to a new site should be evaluated in the PEIR. Impacts from construction and operation of the proposed appealable/fill projects, including liquid bulk facilities, are discussed programmatically in the appropriate sections of Draft PEIR Chapter 3.0, Environmental Analysis. As noted in Draft PEIR Section 3.04, Level of Analysis, the PEIR does not include a detailed environmental review of the proposed appealable/fill projects and land use changes since, consistent with CEQA Guidelines Section 15168, sufficient details are not currently available. Therefore, for most resource areas, assessments of the proposed appealable/fill project and land use changes in the PEIR rely primarily on qualitative assessments. Quantitative assessments are completed to the extent that data allow. Consistent with the timing for specific proposed appealable/fill projects, when appropriate levels of detail regarding the projects become available, project-specific environmental documents will be prepared, concentrating on site-specific issues and focusing on quantitative assessments.

Response to Comment EXXON1-3:

Please see Response to Comment EXXON1-2.

Response to Comment EXXON1-4:

This comment addresses the PMPU and does not raise issues that require a response under CEQA. Please refer to Final PEIR Appendix A, Port Master Plan, for information provided in response to this comment.
April 4, 2013

VIA E-MAIL [ceqacomments@portla.org] & GOLDEN STATE OVERNIGHT

Port of Los Angeles
Chris Cannon, Director of
Environmental Management
425 South Palos Verdes Street
San Pedro, CA 90731

Re: Comments on Cultural Resource Sections of the Draft Program Environmental Impact Report

Dear Chris Cannon:

On behalf of our client, U.S. Borax Inc., a wholly owned subsidiary of Rio Tinto Plc., we are submitting the enclosed Comments on the Port of Los Angeles Master Plan Update Program Environmental Impact Report provided from the URS Corporation.

In short, we believe the Program Environmental Impact Report’s analysis as it relates to the U.S. Borax-Rio Tinto Processing Plant lacks sufficient detail and support for the Report’s conclusions. In opposite, we have provided a comprehensive analysis that we feel illustrates our position in this regard as it relates to the cultural significance of the Processing Plant.

Thank you for your time and consideration of our comments and analysis.

Very truly yours,

Aaron C. Gettis, for
GRESHAM SAVAGE
NOLAN & TILDEN,
A Professional Corporation

Enclosure
Memorandum

Date: April 2, 2013

To: Mr. Aaron C. Gettis
Gresham Savage Nolan & Tilden, PC
550 East Hospitality Lane, Suite 300
San Bernardino, CA 92408

From: Mr. Jeremy Hollins, MA
URS Corporation
4225 Executive Square, Suite 1600
La Jolla, CA 92037

Subject: Comments for the Port of Los Angeles Master Plan Update Program Environmental Impact Report

Dear Mr. Gettis:

The following comment letter has been prepared to provide public comments for the Port of Los Angeles Master Plan Update (PMPU) Program Environmental Impact Report (PEIR), which was released for public review and circulation in March 2013, by the Port of Los Angeles. This comment letter specifically addresses the historical resource evaluation of the U.S. Borax-Rio Tinto Processing Plant within the PMPU PEIR, and its accompanying technical report Historic Resources Evaluation Report for the Port of Los Angeles Master Plan Update, ADP No. 110518-060 (HRER). This comment letter is being provided at the behalf of Rio Tinto, who are the property owners of the U.S. Borax-Rio Tinto Processing Plant, located at 300 Falcon Street, Wilmington, California, in the Port of Los Angeles.

In summary, Rio Tinto respectfully disagrees with the PMPU PEIR finding that the U.S. Borax-Rio Tinto Processing Plant appears to be eligible for listing to the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and a Los Angeles Historic-Cultural Monument (LAHCM). Rather, based on an earlier historical evaluation prepared by URS Corporation (URS) (refer to Attachment A for a copy of the URS report), the U.S. Borax-Rio Tinto Processing Plant does not appear to be considered a historical resource for purposes of the California Environmental Quality Act (CEQA), as defined in State CEQA Guidelines Section 15064.5. While CEQA does not limit a lead agency’s discretion to make a historic significance determination of any potential resource, such a determination needs to be supported by substantial evidence, and not based upon unsubstantiated or unsupported opinions. (See State CEQA Guidelines, Section 15064.5(a)(3)). This comment letter details the differences in professional opinion between the reports, the regulatory context, focusing on research efforts, period of significance, applicable criteria, integrity analyses, and comparative properties.

Regulatory Context
The following provides an overview of the regulatory context the U.S. Borax-Rio Tinto Processing Plant was evaluated under, as part of the Memorandum of Record for the Historical Evaluation of the U.S. Borax-Rio Tinto Processing Plant (Memorandum), PMPU EIR, and HRER. Overall, for purposes of CEQA, a historical resource (these include built-environment and historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing to the NRHP, CRHR, or local register.

The NRHP criteria are set forth in 36 Code of Federal Regulations 60.4 and include resources that:
A. Are associated with events that have made a significant contribution to the broad patterns of our history;

or

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

For the CRHR, the criteria are set forth in CEQA Guidelines Section 15064.5 and include resources that:

1. Are associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

2. Are associated with lives of persons important in our past;

3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Have yielded, or may be likely to yield, information important in prehistory or history.

LAHCM designation is reserved for those resources that have a special aesthetic, architectural, or engineering interest or value of a historic nature. The Cultural Heritage Ordinance establishes criteria for designation; these criteria are contained in the definition of a Monument in the Ordinance. A historical or cultural monument is any site (including significant trees or other plant life located thereon), building, or structure of particular historical or cultural significance to the City of Los Angeles, and include resources that:

1. In which the broad cultural, political, economic, or social history of the nation, state, or community is reflected or exemplified;

2. Which are identified with historic personages or with important events in the main currents of national, state, or local history;

3. Which embody the distinguishing characteristics of an architectural-type specimen, inherently valuable for a study of a period, style, or method of construction;

4. Which are a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

Historical resources must also retain their historic integrity. Historic integrity is the ability of a property to convey its significance, and is comprised of seven aspects: location, design, setting, materials, workmanship, feeling, and association. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property’s physical features and how they relate to its significance.
Previous Studies and Research Efforts

The U.S. Borax-Rio Tinto Processing Plant has been evaluated for significance on two separate occasions: 1) in January 2013, as part of the attached Memorandum of Record for the Historical Evaluation of the U.S. Borax-Rio Tinto Processing Plant (Memorandum) (Attachment A) prepared by URS Corporation; and 2) in February 2013, as part of the PMPU PEIR HRER. These two reports differ regarding evaluation of the significance of the property; however, the Memorandum prepared by URS Corporation, is considered the most accurate, rigorous, and authoritative in terms of its identification and evaluation of the U.S. Borax-Rio Tinto Processing Plant, and thus should be relied upon most heavily for CEQA compliance.

The URS report is considered the most extensive due to in-depth primary and secondary source research focusing on U.S. Borax, Rio Tinto, the Port of Los Angeles, the U.S. Borax-Rio Tinto Processing Plant itself, and other major themes investigated. URS performed a record search through the California Historical Resources Information System (CHRS) for the subject property and one-mile search radius, property-specific historic research, and an architectural survey of the subject property.

In addition to an intensive survey of the property, URS conducted site-specific research on the subject property and the immediate vicinity. Some of the unique materials that URS reviewed included the following: architectural drawings of the U.S. Borax-Rio Tinto Processing Plant; historic-period photographs of several Borax facilities throughout California; corporate literature and memoranda; legal property documentation; site plans and survey information; previous environmental reports; and building permits. Additional research efforts were conducted at the California State University of Long Beach Special Collections, the San Pedro Bay Historical Society, Long Beach Historical Society, Los Angeles Department of Building and Safety, City of Los Angeles Bureau of Engineering, Los Angeles Harbor Department Historical Archives, Wilmington Historical Society, and the 20 Mule Team Museum in Boron, California. Lastly, informational requests were also made to Alameda Naval Air Museum, Wilmington Chamber of Commerce, and the Boron Chamber of Commerce. A more in-depth discussion of the research efforts and pertinent copies of research materials are included in Attachment A of this letter.

Overall, this is a tremendous effort to research one property; however, the efforts were needed to fully evaluate and document the historic context and theme of the U.S. Borax-Rio Tinto Processing Plant and U.S. Borax. In comparison, this level of analysis was not possible by investigators of the HRER, since most primary and secondary sources were not available or used, and an intensive survey of the entire property was not feasible due to time and schedule constraints.

Period of Significance and Applicable Criterion

According to National Register Bulletin 39, period of significance refers to the span of time during which significant events and activities occurred. Events and associations with historic properties are finite; most properties have a clearly definable period of significance.

The HRER asserts that the U.S. Borax-Rio Tinto Processing Plant is eligible for the NRHP and CRHR under Criteria A and C, with a period of significance of 1924 through 1957. However, though the U.S. Borax-Rio Tinto Processing Plant has been located at the property since 1924, the industrial complex is not representative of a significant event associated with the trends or events that have made a significant contribution to the broad patterns of history. Additionally, no justification of a finite event or association with this facility dating to 1957 was provided in the HRER Property-Specific History that defines the period of significance.

As indicated in the Memorandum in Attachment A, the U.S. Borax-Rio Tinto Processing Plant was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of
Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax-Rio Tinto Processing Plant was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was not an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when twenty mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alamedas Point. Further, the HRER offers no evidence to demonstrate that this change in 1937 affected the mission of the U.S. Borax-Rio Tinto Processing Plant. For example, no information was provided that explains how the plant was changed in 1937 and how this event could have affected operations. There is no indication that the plant operated with fewer staff or started using different equipment/processes that year.

According to historical research completed by URS, Rio Tinto affirms that no significant events occurred at its U.S. Borax-Rio Tinto Processing Plant and the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax-Rio Tinto Processing Plant is not associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing in the NRHP under Criteria A or in the California Register of Historical Resources (CRHR) under Criterion 1 or to be considered a historical resource for purposes of the California Environmental Quality Act (CEQA). Similarly, based on this research, the U.S. Borax-Rio Tinto Processing Plant does not reflect or exemplify broad cultural, political, economic, or social history of the nation, state, or community. As such, the property does not appear to be eligible for listing as a Los Angeles Historic-Cultural Monument (LAHCM) under LAHCM Criterion 1, contrary to the findings in the HRER.

Further, the HRER identifies the plant as a ‘good example’ of the property type, and that U.S. Borax’s visibility in the Port ‘surely contributed to the commitment of other industrial ventures’ at the Port. This is the basis for the property being associated with significant events; however, it’s a speculative statement not based on historical fact or supported by evidence. Again, as stated in Section 15064.5 of the State CEQA Guidelines, a structure may be considered by the lead agency to be a historical resource, provided the determination is supported by substantial evidence. In all likelihood, another Port tenant would have occupied the site if U.S. Borax did not.

Lastly, no evidence is provided of similar industrial ventures that relocated or established operations in the Port because of U.S. Borax’s presence. Rather, the Port’s available berths, deep harbors, and proximity to railroad transportation were surely the drivers for industrial ventures to occupy the Port. For a property to be associated with significant events, it must have a connection to a ‘distinctive’ event, and that event must be a specific or a pattern of events. Based on this, the facility is not representative of a distinctive event pattern of events; if anything, it would be all the industrial ventures in this area that led to the Port’s growth and not simply this one facility because it is a good example of the property type.

**Alterations**

URS identified and documented in detail many alterations to the U.S. Borax-Rio Tinto Processing Plant in their *Memorandum* that the HRER did not include and consider in their evaluation.

To determine its architectural significance, the U.S. Borax-Rio Tinto Processing Plant requires evaluation as individual buildings designed in the Utilitarian Industrial-style, as well as individual components to a potential historic district. Based on historic research and field survey in Attachment A performed by URS, the U.S. Borax-Rio Tinto Processing Plant does not appear to possess distinctive characteristics of a significant Utilitarian Industrial design. While the plans for the U.S. Borax-Rio Tinto Processing Plant depict several characteristics
GSNT-9 Typical of the Utilitarian Industrial-style typical in California in the 1920s, the property, in its current form, lacks the majority of these distinctive architectural characteristics and its architectural integrity has been significantly compromised. Presently, many of its large multi-pane windows have been in-filled. The non-historic period conduit, ventilation, and industrial equipment added to the facility have obstructed and significantly altered historic-period materials. These alterations include the replacement of original board-formed wall texture with a smooth stucco exterior wall treatment as well as the modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment. The absence of these original designed features undermines the distinctive architectural characteristics of the U.S. Borax-Rio Tinto Processing Plant. Additions to the Warehouse and the Connecting Shed are not true representations of the original design. Also, the simple, rectangular chimney was not depicted in the 1924 drawings and does not match the original design of the building. The modern alterations and upgrades to the refinery complex detract from its intended architectural character. Lastly, the oldest extant portion of the building is completely covered by a non-historic period addition and is not visible. The removal of the addition would affect the materials of the extant portion, diminishing its ability to convey its earliest construction episode.

GSNT-10 Further, while the facility was constructed using reinforced concrete construction method, the facility is a late example of this method of construction. In fact, the company had pioneered the method at the Alameda facility 32 years previously and at Bayonne, New Jersey 27 years before, and by 1924, the construction method was relatively common and countless better examples exist to illustrate such a method.

While the design of the U.S. Borax-Rio Tinto Processing Plant was undertaken by Albert C. Martin, a master architect, the property does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his major contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963).

GSNT-11 In addition, pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design, and have not achieved significance in their own right. They have completely comprised the significance of the older portions of the property and Martin’s design. Therefore, although portions of the U.S. Borax-Rio Tinto Processing Plant were designed by Martin, the refinery is not a good representation of the master architect’s work.

GSNT-12 Moreover, since the property was first constructed, large-scale changes to the property have undermined the original design. As noted earlier and within the Memorandum, non-historic features and major alterations to the property include:

- Seismic retrofitting of many of the buildings and structures between 1988 and 2004, which also resulted in the removal of the original 150-foot stack near the power plant;
- Introduction of large industrial equipment such as tanks, silos, conveyor belts, and piping (in some areas, the piping connects buildings that were not historically connected, disrupting the historic spatial relationships and datum);
- Removal of railroad tracks from the northeast portion of the property;
- Infilling of many of the buildings’ windows and entries (e.g., the majority of the windows along the north and south elevation of the power plant have been infilled);
- Replacement of the original board-formed wall texture with a stucco exterior wall treatment;
- Modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment;
Additions of conduit, other piping, utility equipment, security lights, cameras, and signage to the exterior walls of the buildings;
A large non-historic addition along the south east portion of the property, completely obstructing and compromising the oldest portion of the property;
Re-arrangement and removal of parking areas located within the northern portion of the property; and
Non-original metal corrugated sheeting wall covering and non-historic period conduit, rigging, other industrial equipment components, safety barriers, metal corner braces, and post bollards along the warehouse building.

Given the lack of integrity and the numerous alterations to the U.S. Borax-Rio Tinto Processing Plant, U.S. Borax agrees with the HRER that the property no longer retains its character-defining features and does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possesses high artistic values. Therefore, the property does not appear to be eligible for listing in the NRHP under Criterion C or CHHR under Criterion 3 or to be considered a historical resource for purposes of CEQA. It should be noted that these numerous alterations described above and in URS’s Memorandum affect the property’s historic integrity as is discussed below.

Changes to the Property’s Historic Integrity

Historic integrity is typically recognized through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. The HRER asserts that the U.S. Borax-Rio Tinto Processing Plant appears to have retained sufficient integrity of location, design, materials, workmanship, feeling and association based on a review of historic aerials and observation from the exterior of the facility. Additionally, the HRER states that although the setting surrounding the facility has changed as businesses have come and gone, the general layout is the same as it has been since at least 1927. However, the HRER provided no rigorous analysis of integrity that would have noted that substantial changes have occurred to the property’s integrity over time. In order to properly assess the property’s historic integrity, a more developed and thorough integrity analysis would be needed to justify conclusions.

In comparison, according to URS’s Memorandum in Attachment A, the facility does not meet the criterion for eligibility to any registry, and does not retain its historic integrity. The following summarizes URS’s rigorous historic integrity analysis of the facility:

**Location** is defined as the place where the historic-period property was constructed or the place where the historic event took place. The subject property has not been moved; therefore, it retains its integrity of location.

**Design** is defined as the composition of elements that constitute the form, plan, space, structure, and style of a property. The form, plan, and space of the property have been altered by several additions and different periods of development. While some of the property’s design features remain (such as some stepped parapets, cornices, and several rectangular capitals), the form, plan, space, and structure have been significantly compromised as a result of upgrading and adapting the facility to new refining technologies.

**Setting** is defined as the physical environment of a historic-period property that illustrates the character of the place. The refinery was built in an industrial port area of Los Angeles. Currently, the property retains its setting in respect to its location in proximity to the Port of Los Angeles. However, due to several episodes of development and re-development, it does not retain the setting associated with the exponential growth of the Port in the early 1900s following the opening of the Panama Canal.
GSNT-18 Materials are defined as the physical elements combined in a particular pattern or configuration to form the historical resource during a period in the past. Many of the original materials have been altered or removed, such as decorative wall features, original window systems, and board-formed concrete textured walls. Also, the addition of new industrial equipment and structures, such as the Bulk Storage Silos, has introduced materials not historically associated with the U.S. Borax-Rio Tinto Processing Plant.

GSNT-19 Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. The property does not represent physical evidence of the crafts of a given period of history. There have been major alterations and the removal of characteristics that are reflective of it’s earliest period of development. Similar processing plants were located throughout the U.S., and the existing structure is not a particularly important example of a craft as it relates to a certain culture or people.

GSNT-20 Feeling is defined as the quality that a historic-period property has in evoking the aesthetic or historic sense of a past period of time. The property in its present form does not evoke a historic sense of feeling, but rather that of a relatively recently constructed refining facility. The substantial additions and changes, coupled with changes in the setting, have destroyed the “feeling” associated with the aesthetic or historic sense of the processing plant.

GSNT-21 Association is defined as the direct link between a property and the event or person for which the property is significant. While the property is associated with U.S Borax and Albert C. Martin, the property in its present form does not convey a direct link with the prominent architect. Further, a number of existing structures in the Los Angeles area remain that better illustrate the architectural skills and designs as they relate to Albert C. Martin.

GSNT-22 Given the numerous alterations to the U.S. Borax-Rio Tinto Processing Plant, Rio Tinto affirms that the property no longer retains most aspects of its historic integrity, divergent to the HRER findings, and would not be eligible under any type of criterion.

GSNT-23 Comparative Properties and Historic Contexts
Rio Tinto would like to respectfully suggest several other buildings that may be better examples of the historic context. The U.S. Borax-Rio Tinto Processing Plant was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was not an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when twenty mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point.

GSNT-24 In 1889, to expand the processing of raw minerals that formed the borax product, Francis “Twenty Mule Team” Smith worked with renowned engineer and reinforced concrete innovator Ernest L. Ransome, to design two new refineries for him -- one in West Alameda, California, and the other in Bayonne, New Jersey. The California refinery was recognized for being the first structure of its kind to be built with reinforced concrete (Legends of America, http://www.legendsofamerica.com/ca-francissmith.html).

According to the City of Alameda, Alameda Historic Preservation Element and Page & Turnbull’s 2005 NPS Alameda Historic District, Historic District Assessment and Historic Preservation Strategy, one of the most illustrious industries to relocate to Alameda Point was Pacific Coast Borax Company, constructed in 1893 by Smith, the famous Death Valley borax miner. Although far from his Death Valley mines, Smith chose Alameda Point for its convenient rail connections and access to San Francisco Bay. Smith constructed a huge wood-frame and concrete refinery complex on what is presently the site of the Engine Overhaul Shop (Building 360) and a wharf and coal storage warehouse on what is now the location of the Engine Test Cell complex (Building 14).
When it was completed, Pacific Coast Borax Company was the largest borax refinery in the world and reportedly one of the first to make use of reinforced concrete in the United States. The refinery was closed in 1930 after the exhaustion of the borax mines in Death Valley and the main four-story refinery building was subsequently dynamited. The Navy spared at least one building from the borax plant when they began grading and filling NAS Alameda in 1938. This building, Building 163, still exists as a small brick maintenance shed in the southeastern corner of the base.

According to Betsy Hunter Bradley (Bayonne Retro Magazine, http://bayonneretro.blogspot.com/2012/06/pacific-coast-borax-company.html), Ernest L. Ransome undertook groundbreaking work in the design and construction of reinforced concrete in the United States. After experimenting with twisted reinforcing rods during the 1880s and constructing several buildings of reinforced concrete in the San Francisco area, Ransome moved his business to the East Coast. As he erected buildings of the new material, Ransome ‘Americanized’ the construction process by developing a system of reinforcement that was simpler (and therefore cheaper) than the French Henribeique method. He seems also to have introduced American builders to the use of reinforced concrete in a skeletal form.

A demand for fireproof construction and the strength to support excessive loads led Ransome's first major building project in reinforced concrete. At the edge of New York City harbor in Bayonne, New Jersey, Ransome oversaw the construction of the Pacific Coast Borax Refinery. A loft building erected in 1897-1898 had originally been planned as a structure of mill construction with brick walls, but heavy tanks and large machinery required very strong floors. After deciding to use fireproof construction and evaluating the bids he received for the project, Pacific Coast Borax awarded a contract to Ransome. The first portion of the four-story structure utilized beam-and-girder floor construction, which was to become standard practice. The exterior walls of the structure, however, were conceived as self-supporting masonry walls and were pierced only by small window openings. Many of the engineers, architects and industrialists who visited the construction site were especially interested in how the heavy machinery was supported by the floors of the concrete structure. The Pacific Coast Borax facility also demonstrated the fireproof qualities of reinforced concrete construction when it withstood a fire in 1902 that destroyed its contents and wooden elements.

When comparing the property to other properties associated with U.S. Borax in the Los Angeles area or southern California, the U.S. Borax-Rio Tinto Processing Plant does not illustrate the economic development or historical importance of the company. Rather, since U.S. Borax’s history is aligned with its historic activities of mineral extraction and not coastal shipping, properties associated with the property in Boron and within Death Valley better illustrate these historic themes. By 1883, following the discovery of borates in Death Valley, the refined product was being hauled great distances across the desert by twenty mule teams. Since 1896, the Twenty Mule Team symbol used by Pacific Coast Borax brought notoriety to Death Valley as a place. Twenty Mule teams toured the country as a promotional and advertising effort. This advertising had (combined with the uniqueness of the brand symbol) the added effect of attracting tourists to Death Valley. In 1927 Pacific Coast Borax moved mining operations out of the Ryan area (located in Death Valley). The bunkhouses associated with the mining operations in Ryan were adapted into guest houses at the Death Valley View Hotel (a place for tourists to stay). Pacific Coast Borax also built accommodations at Furnace Creek Ranch and Death Valley Junction. Furnace Creek Ranch was the most luxurious of the accommodations. Also, in 1927, a group of men, including Stephen Mather (who 37 years earlier had originated the Twenty Mule Team promotion with Pacific Coast Borax), visited Death Valley to consider its inclusion as a National Park. Death Valley was nominated as a National Monument in 1933. Mather withheld a formal recommendation at the time for fear that his previous employment with the company might cause negative reaction toward the nomination as a National Park. When Death Valley finally became a National Park in 1995, the land on which the National Park Service Visitor’s Center sits was donated by U.S. Borax, which reflects the company’s commitment to that area, and represents their extensive association with the development and growth of these areas. Also, soon after the U.S. Borax-Rio Tinto Processing Plant was
finished, the company opened an underground borate mine in Boron, California in the Mojave Desert. In 1956, the company became U.S. Borax when it merged with United State Potash Corporation. In 1957, the company built the Boron refinery and borax production was moved to Boron. Therefore, the company’s presence in areas outside of the Los Angeles Port, particularly to represent its objective as a mineral extraction leader and its commitment to preserve its legacy in the Death Valley area, are more important to the history of U.S. Borax than its shipping operations in the Port which are, in effect, ancillary to the true history as it relates to U.S. Borax.

GSNT-26

Conclusions
In conclusion, Rio Tinto would like to state for the record that the period of significance presented in the HRER for this property is inappropriate because justification for the finite dates for beginning and end of the period of significance is inadequate. The integrity analysis in the HRER lacks rigor and, based on the detailed identification of alterations to the property, it no longer retains most meaningful aspects of its historic integrity. Given the lack of integrity and numerous alterations, the property is ineligible for any criteria for listing in the NRHP or CRHR. The Pacific Coast Borax Refineries in Alameda, California and Bayonne, New Jersey are recommended as better examples of the property type’s historic context, and properties within Boron and Death Valley better convey the importance of U.S. Borax and the company’s place in history. Further, it is not the oldest or the most distinctive property within the Port, does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possesses high artistic values, and is not representative of a major or unique industry in the Port. As a result, URS’s Memorandum (Attachment A) is considered by Rio Tinto the most accurate, rigorous, and authoritative study in terms of its identification and evaluation of the U.S. Borax-Rio Tinto Processing Plant, and thus should be relied upon most heavily for CEQA compliance.

Sincerely,

Jeremy Hollins, Project Manager, URS

Attachments
Attachment A – Memorandum
Comment Letter GSNT: Gresham Savage Nolan & Tilden

Response to Comment GSNT-1:

The commenter states their opposition to the PEIR analysis of the U.S. Borax-Rio Tinto Processing Plant and submits an alternative comprehensive analysis for review. The URS memorandum was received and thoroughly reviewed.

Response to Comment GSNT-2:

The commenter respectfully disagrees with the PMPU PEIR findings regarding the U.S. Borax-Rio Tinto Processing Plant eligibility for listing in the NRHP, CRHR, and as a Los Angeles Historic-Cultural Monument (LAHCM) and provides this comment letter to detail the differences in professional opinion between the reports.

While the LAHD does not disagree with the findings provided in the URS report, the LAHD still believes that the U.S. Borax Wilmington Processing Plant (Wilmington Plant) is potentially eligible for listing to the NRHP, CRHR, and as a LAHCM as a significant cultural resource for the Port. As noted below in the responses to Comments GSNT-4 and GSNT-5, the general area of disagreement focuses on the following: URS evaluated the property for its eligibility as an individual property in the development of the industry of borax production and the history of U.S. Borax. This is not the same context as that of the Historic Resources Evaluation Report (HRER). The historic context in the HRER is the history of the Port and the Port’s historic trends. The HRER considers the Wilmington Plant’s contributions to the historic trends of the Port.

Response to Comment GSNT-3:

The URS memorandum lists the regulatory context for its evaluation under the NRHP, CRHR, and LAHCM. This is the same regulatory context as in the PMPU PEIR HRER.

Response to Comment GSNT-4:

The URS memorandum identifies the two previous studies and research methods. The memorandum states “Overall, this is a tremendous effort to research one property; however, the efforts were needed to fully evaluate and document the historic context and theme of the U.S. Borax-Rio Tinto Processing Plant and U.S. Borax” (URS 2013).

URS evaluated the property for its eligibility as an individual property in the development of the industry of borax production and the history of U.S. Borax. This is not the same context as that of the HRER. The historic context in the HRER is the history of the Port and the Port’s historic trends. The HRER considers the Wilmington Plant’s contributions to the historic trends of the Port.
Response to Comment GSNT-5:

The URS memorandum comments that the Wilmington Plant is not representative of a significant event associated with the trends or events that have made a significant contribution to the broad patterns of history. Furthermore, it states that no justification of a finite event or association with this facility dating to 1957 was provided in the HRER that defines the period of significance. The memorandum further comments on the motivation for U.S. Borax relocating to the Port, the presence of other buildings at the Port, and the process of transporting ore.

The period of significance for the Wilmington Plant at the Port has an end date of 1957. This date was selected since it corresponds with the opening of the new U.S. Borax refining plant at Boron, which changed the use of the Wilmington Plant. After the opening of the new refinery, the Wilmington Plant no longer processed raw minerals, but instead underwent alterations to process new refined products as well as continuing to serve as the West Coast shipping center.

Although U.S. Borax may have decided to build on Mormon Island due to its relative proximity to the Panama Canal, international shipping through the canal had no effect on the significance evaluation of the Wilmington Plant. The fact that other important buildings and structures were already constructed at the Port at the time the Wilmington Plant was constructed is irrelevant. Many important businesses for the Port were constructed before and after development of the Wilmington Plant. The statement that the transportation of ore from Death Valley to the coastal plant was not an innovation facilitated by the subject property is also not relevant. The process by which the plant receives its product does not affect the Wilmington Plant’s significance for the Port.

Response to Comment GSNT-6:

The URS memorandum comments that the Wilmington Plant is not associated with events that have made a significant contribution to the broad patterns of California’s history, and is therefore not eligible for listing in the NRHP under Criterion A, or in the CRHR under Criterion 1 or as a LAHCM contrary to the findings in the HRER.

The LAHD respectfully disagrees. Following WWI, the Port experienced a significant period of growth. From 1920 to 1924, tonnage shipped from the Port increased from 3 million to 26 million tons per year. While lumber and oil accounted for most of the increase, businesses new to the Port, such as Borax, Los Angeles Sea Food Packing, and A.J. Busefink Furniture, contributed to exports as well. Appendix D of the URS report provides two letters and accompanying information on the Wilmington Plant, as prepared by the plant’s first manager, Thomas M. Cramer. Cramer states “The Borax Co. was a pioneer, industrially, in the harbor. I do not recall that there were any other manufacturers, up to that time, who had recognized the benefits of the location except the Union Oil, who had a refinery near San Pedro…” (Cramer 1949). In the 1923-24 Port of Los Angeles Annual Report, the Board of Harbor Commissioners agreed, noting that the Pacific Coast Borax Company brings a new industry to the Port. Cramer further remarks that the “towering concrete stack of 150 feet high became a harbor landmark” (Cramer 1949). The construction and continued operation of the Wilmington Plant was a significant event for the Port and did contribute to the rise of the Port’s importance in trade and
Response to Comment GSNT-7:

The contention that other industrial ventures followed Borax’s lead to establish plants at the Port is not purely speculative, but is instead based on available historical data. It is not possible to know all of the factors which lead to a business’s decision to build at a specific location such as the Port. However, a review of building trends within a particular timeframe can contribute to understanding the dynamics of expansion within a particular area or particular city. According to economists Glenn Ellison, Edward Glaeser, and William Kerr in *The American Economic Review* “What causes industry agglomeration” (Ellison et al. 2010), they suggest that a business might choose a location for natural advantage reasons, such as shipping access, ease of receiving raw materials, and access to a potential labor pool, although those attributes make up only 20 percent of the decision making process. A review of other economic trends can contribute to better understanding of the dynamics of expansion and the reasons for selecting one location over another. For instance, small retail businesses may locate next to large, established “anchor” businesses to benefit from the customer traffic generated by the anchor. In the manufacturing industry, agglomeration is not related to customer draw such as in the retail business, but the other 80 percent of the decision making process can be attributed in part to brand image, perceived success, and expanding industry that will benefit a corporation’s location. Therefore, it is reasonable to conclude that other businesses were drawn by Borax’s decision to locate at the Port, recognizing that a national manufacturer would attract services that could be advantageous to all the firms locating to an industrial complex. For example, two chemical plants, the Agricultural Potassium-Phosphate Company of California and a vacuum fumigating plant, were constructed at the Port between 1928 and 1930, just a few years after Borax relocated to the Port. All these businesses contributed to the Port’s shipping status during the historic period of growth, thereby creating an environment for success, a historic trend that made a significant contribution to the Port.

Response to Comment GSNT-8:

The URS memorandum comments that no evidence is provided of industrial ventures that relocated or established operations at the Port because of U.S. Borax’s presence. The LAHD agrees that no evidence is available to indicate any business moved to the Port because of U.S. Borax, but industry began to vary. In order to remain successful, the Port needed to attract new industry and Borax was among the first to arrive.

Response to Comment GSNT-9:

The URS memorandum comments on alterations to the Wilmington Plant buildings. A bulleted list of alterations is provided in Comment GSNT-12.

The alterations to the Wilmington Plant buildings are known and where relevant, noted in the HRER. A total of 215 building permits on file at the Los Angeles
Department of Building and Safety were reviewed for the HRER, but it was not practical to include a complete list of all alterations, additions, and new construction completed over the last 88 years of the plant’s operation. Instead, only significant visual changes were included in the HRER. As a correction to the URS memorandum, based on the building permit the original 150-foot boiler stack was replaced with a stack of identical size and overall height and was not removed as noted in the memorandum.

Response to Comment GSNT-10:

The URS memorandum comments on the commonality of the reinforced concrete construction method, earlier reinforced concrete U.S. Borax refineries, and that the Wilmington Plant Refinery Building is a late example.

According to The Story of Borax “The [Wilmington refinery] building was the first reinforced concrete industrial structure in Southern California” (Kern 1979:31). The HRER does not contend that the property is significant for its type, period, or method of construction under Criterion C of the NRHP or under Criterion 3 of the CRHR.

Response to Comment GSNT-11:

The URS memorandum comments on the architect for the Wilmington Plant. The LAHD agrees that the Wilmington Plant is not a good representation of the master architect’s work, nor does the HRER contend that the property is significant for the work performed by a master architect under Criterion C of the NRHP or under Criterion 3 of the CRHR.

Response to Comment GSNT-12:

Please see Response to Comment GSNT-9.

Response to Comment GSNT-13:

Comment noted. The URS memorandum comments that U.S. Borax agrees with the HRER that the property is not eligible for listing in the NRHP under Criterion C or the CRHR under Criterion 3.

Response to Comment GSNT-14:

The URS memorandum comments on the lack of a rigorous analysis of integrity in the HRER. A detailed integrity analysis was not included for each of the properties evaluated in the HRER, although all aspects of integrity were considered in making eligibility recommendations.

Response to Comment GSNT-15:

Comment noted. The property is in the place it was constructed and retains integrity of location.
Response to Comment GSNT-16:

The URS memorandum comments that the integrity of design has been significantly compromised as a result of upgrading and adapting the facility.

The design of the Wilmington Plant has changed over time, although it is unlikely that any industrial business develops a site plan without anticipating change. Industrial properties must change over time to keep up with changing technology and stay profitable. While the core buildings remain, several alterations have changed the layout of the northeast section of the property. The original railroad lines no longer pass between the refinery building and the steam plant, but now pass to the north of the bulk storage bins reflecting the change in use for the refinery building. The dissolving plant and three thickener tanks were removed to make room for the bulk storage bins. The portion of the property subjected to these changes accounts for approximately a quarter of the site. With the original buildings taking up the majority of the property, it appears that much of the original design is still intact. As such, the property retains sufficient integrity of design.

Response to Comment GSNT-17:

The URS memorandum states that the plant “does not retain the setting associated with the exponential growth of the Port in the early 1900s following the opening of the Panama Canal” (URS 2013).

In fact, the history of the Port reflects a period of little or no growth in shipping following the opening of the canal, due to the U.S. entrance into WWI. More cargo was shipped in the 1912-13 fiscal year than in the subsequent 6 years. This trend does not begin to change until 1923 and was not substantially changed until 1924.

The Borax plant is currently surrounded by large metal tanks used for the storage of oil, a use that has been active since at least 1927. Several municipal transit sheds have occupied the area known as Pier A, located across Slip One from the Wilmington Plant since 1915. New sheds were constructed following a fire that destroyed the sheds in 1947 when the tanker U.S.S. Markay exploded at Berth 168. The replacement of the Pier A sheds with new sheds does not diminish the setting.

Regarding the plant itself, the refinery building, steam plant, wharf office, long warehouse along the berth, and the connecting shed are all in their original location. The location of several holding bins and the railroad tracks has changed over time, but the relationship between the core buildings has not. The property retains integrity of setting.

Response to Comment GSNT-18:

The URS memorandum comments that many of the original materials of the plant have been removed or altered and that the addition of new industrial equipment introduced materials not historically associated with the Wilmington Plant.

There have been changes to the buildings that reduce the integrity of materials. The removal and filling of windows is the most significant, as it changes the patterned appearance of the refinery building and steam plant. The newer plaster over the
board-formed concrete textured walls of the refinery building and steam plant does not appear to be a significant change for a property eligible under Criterion A. The new cladding does not look different until viewed up close. The wharf office, shed, and connecting shed are clad in corrugated metal sheets and appear to retain most of their original materials or, if replaced, were done in-kind. The northern gable end of the shed appears to be the only location that has new metal sheeting material in a different design. The addition of industrial equipment, such as the bulk storage bins, conveyor belt over the shed, and various water and electrical lines installed on the exterior of all the buildings, distracts from the aesthetics of the property. Therefore, it is agreed that the property has suffered a loss of materials, but the buildings are not completely without integrity of materials.

Response to Comment GSNT-19:

The URS memorandum comments that the property does not represent physical evidence of the crafts of a given period of history, nor does it reflect its earliest period of development.

The Wilmington Plant was not created to exhibit high style workmanship. For example, there are no elaborate front porches, cornice lines, or wall decorations. The workmanship of the refinery building was in the design of the frame or method of construction. It is understood that the first reinforced concrete building in the U.S. was constructed at the Borax refinery plant in West Alameda and that the Wilmington refinery was just a copy of earlier refineries used by Borax. However, the Wilmington refinery building was designed to improve on those earlier examples and, according to The Story of Borax, “The [Wilmington refinery] building was the first reinforced concrete industrial structure in Southern California” (Kern 1979:31). The Wilmington Plant’s first Plant Manager, Cramer, explained that the refinery building’s design was to “provide ample space for enlargement or expansion. The monolithic concrete construction was decided upon as best suited to carry the weight of machinery required….the roof was simply a third upper floor with full strength for future upward building if desired” (Cramer 1949). While upward expansion was never undertaken, its design was forward looking and the refinery building has continued to serve its purpose for over 80 years. The wharf office and sheds exhibit Neo-classical inspired parapets that surround the roofline and conceal the gable roofs. These parapets give the buildings a grander appearance rather than a purely industrial exterior. The property appears to exhibit evidence of style, design, and skill in construction and retains and exhibits integrity of workmanship.

Response to Comment GSNT-20:

The URS memorandum comments that substantial additions and changes, coupled with changes in the setting, have destroyed the “feeling” associated with the aesthetic or historic sense of the Wilmington Plant.

Although the bulk storage bins and conveyor belt over the shed are very visible alterations to the property, it is not hard to recognize the Wilmington Plant from its historical photographs. URS states that the feeling of the plant has been destroyed, that is to say a contemporary of Borax would not recognize the property as a period example. In contrast, the Port contends that the presence of the original buildings, especially when viewed from sea or along Slip One, does have the ability to convey
the property’s historic character. It is agreed that the property has suffered some loss
of feeling with the new additions and removal of highly visible signage on the shed,
but the property retains a reasonable integrity of feeling.

Response to Comment GSNT-21:

The URS memorandum comments that the property does not convey a direct link
with the prominent architect.

The lack of association with the property’s architect is unimportant, as the property is
not considered significant under Criterion C. Integrity is generally assessed under the
criterion for which it is significant. The Wilmington Plant did contribute to the Port’s
shipping status and was a visible landmark during the historic period of growth,
thereby contributing to a historic trend that made a significant contribution to the
Port. As the property is still located within the Port, the property retains integrity of
association.

Response to Comment GSNT-22:

The URS memorandum comments that the property no longer retains most aspects of
its historic integrity.

“Integrity is the ability of a property to convey its significance” (National Park
Service 2002:44). “All properties change over time. It is not necessary for a property
to retain all of its historic physical features or characteristics. A property that is
significant for its historic association [Criterion A] is eligible if it retains the essential
physical features that made up its character or appearance during the period of its
association with the important event or historical pattern…” (National Park
Service 2002:46). Since the U.S. Borax Processing Plant retains the essential physical
features that made up its character or appearance during the period of its association
with the important event or historical pattern, and retains sufficient integrity of
location, design, setting, materials, workmanship, feeling, and association, the
property appears to be eligible under Criterion A for the NRHP and Criterion 1 for
the CRHR. These conclusions are based on property’s contributions to the Port’s
shipping status during the historic period of growth, thereby contributing to a historic
trend that made a significant contribution to the Port.

Response to Comment GSNT-23:

The URS memorandum comments that it would like to suggest several other
buildings that may be better examples of the historic context.

The context in which URS evaluated the property is not the same as that of the HRER.
The historic context in the HRER is the history of the Port; therefore, any other
buildings that may be suggested as better examples of the historic context prepared by
URS would not be significant for the Port.

Response to Comment GSNT-24:

The URS memorandum comments on the design of two reinforced concrete refineries
for U.S. Borax.
The URS memorandum does not identify any comparable properties at the Port. Both the Bayonne, New Jersey and the West Alameda, California refineries are not significant for the Port, and hence do not replace the importance of the Borax property to the Port as a historic property retaining much of its historic appearance and setting.

Response to Comment GSNT-25:

The URS memorandum states “When comparing the property to other properties associated with U.S. Borax in the Los Angeles area or southern California, the U.S. Borax-Rio Tinto Processing Plant does not illustrate the economic development or historical importance of the company” (URS 2013).

The HRER considers properties that may be significant to the Port. The entire history of Borax and its activities in the Death Valley area are not significant to the development of the Port, nor can it be argued that any Borax property outside of the Port can convey the significance of the Port.

Response to Comment GSNT-26:

The URS memorandum summarizes that the HRER lacks appropriate justification for the period of significance and that the integrity analysis lacks rigor. Since the Wilmington Plant no longer retains its most meaningful aspects of its historic integrity, the property is ineligible for any criteria for listing in the NRHP or the CRHR. The URS memorandum adds that the “refineries in West Alameda, California and Bayonne, New Jersey are recommended as better examples of the property type’s historic context, and properties within Boron and Death Valley better convey the importance of U.S. Borax and the company’s place in history. Further, it is not the oldest or the most distinctive property within the port, does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possesses high artistic values, and is not representative of a major or unique industry in the port” (URS 2013).

Both the period of significance and the analysis of integrity are addressed in responses provided above (see responses to Comments GSNT-5, 16-22). The fact that the Wilmington Plant is not the oldest or most distinctive property within the Port is not a criterion for eligibility. The LAHD agrees with the findings of the URS memorandum that the Wilmington Plant is not eligible for listing on the NRHP or the CRHR as an individual property in the development of the industry of borax production and the history of U.S. Borax.

However, the LAHD contends that the U.S. Borax Wilmington Processing Plant is a significant cultural resource potentially eligible for listing to the NRHP under Criterion A, the CRHR under Criterion 1, and as a LAHCM for its contributions to the Port’s shipping status during the historic period of growth, thereby contributing to a historic trend that made a significant contribution to the Port.
Attachment A
Date: January 30, 2013

To: Mr. Robert Ritter
Gresham Savage Nolan & Tilden, PC
550 East Hospitality Lane, Suite 300
San Bernardino, CA 92408

From: Mr. Jeremy Hollins
URS Corporation
4225 Executive Square, Suite 1600
La Jolla, CA 92037

Subject: Memorandum of Record for the Historical Evaluation of the U.S. Borax Wilmington Facility

Dear Mr. Ritter:

The following memorandum of record summarizes the historical evaluation of the U.S. Borax Wilmington Facility, located at 300 Falcon Street, Wilmington, California, in the Port of Los Angeles. At the request of Rio Tinto, the property owner, the property was evaluated for eligibility for inclusion in the California Register of Historical Resources (CRHR), as a Los Angeles Historic Cultural Monument (LAHCM), and as a historical resource for purposes of the California Environmental Quality Act (CEQA), as defined in CEQA Guidelines Section 15064.5. In conclusion, the facility does not appear to be eligible for listing on the CRHR, LAHCM, or considered a historical resource for purposes of CEQA.

Introduction

The subject property, the U.S. Borax Wilmington Facility, built originally in 1923 and 1924, encompasses approximately 7.6 acres within the industrial Port of Los Angeles, California. The property is bordered to the north by Berth 164, occupied by Valero; to the east by Berths 174 to 181, occupied by Pasha; to the south by Berths 167 to 169, occupied by Shell; and to the west by Slip No. 1. The project is located within the Torrance (1981) 7.5-Minute United States Geological Survey (USGS) Quadrangle Map, with the approximate center point of the project located at UTM Zone 11 382667mE, 3735965mN. The subject property contains a grouping of buildings and structures used primarily in the refining and shipping of Borax. The facility is owned and operated by Rio Tinto. Maps of the subject property are included in Attachment A, and photographs of the subject property are included in Attachment B.

Methods

To assess the subject property for above-ground significance, URS performed a record search through the California Historical Resources Information System (CHRIS) for the subject property and one-mile search radius, property-specific historic research, and an architectural survey of the subject property.

Record Search

On January 7, 2013, URS performed a record search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. The search was performed through the CHRIS cultural resources...
database for all relevant previously-recorded cultural resources and previous investigations completed within the site and within a one-mile radius of the site. Information reviewed by URS included location maps for previously-recorded trinomial and primary prehistoric and historic sites and isolates, site record forms and updates for cultural resources previously identified. It also included review previous investigation boundaries, and National Archaeological Database citations for associated reports, historic maps, and historic addresses. Also reviewed were the properties listed on the California Points of Historical Interest, California Historical Landmarks (CHL), California Historical Resources Inventory, local registries of historic properties, CRHR, and the National Register of Historic Places (NRHP). A copy of the record search is included in Attachment C of this report and the results of this search are summarized below.

Previously-Conducted Investigations

The SCCIC record search identified 31 previously-conducted investigations within the one-mile search radius, which are listed in Table 1 below and mapped in Attachment C. Of these 31 previously-conducted investigations, two included the subject property. Additionally, the SCCIC identified 35 previously-conducted investigations located in the Long Beach, San Pedro and Torrance, CA 7.5-Minute USGS Quadrangles that are potentially within the one-mile radius of the subject property. However, the SCCIC did not have specific locational data for these surveys. Therefore, these additional investigations are not mapped in Attachment C or included in Table 1.

Table 1 – Previously-Conducted Cultural Resources Investigations within a One-Mile Search Radius

<table>
<thead>
<tr>
<th>Survey Report Number</th>
<th>Author</th>
<th>Company</th>
<th>Date</th>
<th>Report Title</th>
<th>Quadrangle</th>
<th>Within Subject Property</th>
</tr>
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<tbody>
<tr>
<td>LA-953</td>
<td>Dillon, Brian</td>
<td>NA</td>
<td>1981</td>
<td>An Archaeological Resource Survey and Impact Assessment of the Proposed Container Terminal Berths 121-126 in the Port of Los Angeles, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>Survey Report Number</td>
<td>Author</td>
<td>Company</td>
<td>Date</td>
<td>Report Title</td>
<td>Quadrangle</td>
<td>Within Subject Property</td>
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<tr>
<td>LA-2789</td>
<td>Govena, Fran and Beth Padon</td>
<td>LSA Associates, Inc.</td>
<td>1992</td>
<td>Cultural/Scientific Resource Assessment: B Street Realignment Project, Port of Los Angeles, Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-3341</td>
<td>Komporlides, Dena S.</td>
<td>Tetra Tech, Inc.</td>
<td>1994</td>
<td>Cultural Resources Evaluation for Site 6-a, Long Beach Naval Station, California</td>
<td>Long Beach, Torrance</td>
<td>No</td>
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<tr>
<td>LA-3403</td>
<td>Gilliland, Donald B.</td>
<td>Angeles National Forest</td>
<td>1994</td>
<td>Josephine Peak Microwave Site, Los Angeles County</td>
<td>Condor Peak</td>
<td>No</td>
</tr>
<tr>
<td>Survey Report Number</td>
<td>Author</td>
<td>Company</td>
<td>Date</td>
<td>Report Title</td>
<td>Quadrangle</td>
<td>Within Subject Property</td>
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<tr>
<td>LA-4228</td>
<td>McKenna, Jeanette A.</td>
<td>McKenna et al.</td>
<td>1995</td>
<td>Cultural Resources Investigations for the Proposed Banning’s Landing Waterfront Access and Office Development Project Area, Port of Los Angeles, Wilmington, Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>Survey Report Number</td>
<td>Author</td>
<td>Company</td>
<td>Date</td>
<td>Report Title</td>
<td>Quadrangle</td>
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<tr>
<td>LA-4907</td>
<td>Maki, Mary K.</td>
<td>NA</td>
<td>2000</td>
<td>Phase I Archaeological Investigation of Limited Areas within the Los Angeles Department of Water &amp; Power’s Harbor, Scattergood &amp; Valley Generating Stations Los Angeles County, California</td>
<td>Torrance, Van Nuys, Venice</td>
<td>No</td>
</tr>
<tr>
<td>LA-4970</td>
<td>Smith, C. Philomene</td>
<td>Caltrans District 7</td>
<td>2000</td>
<td>Reconstruction Along Route 47 from the Vincent Thomas Toll Plaza to Navy Way</td>
<td>Long Beach, San Pedro, Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-5331</td>
<td>Romani, John F.</td>
<td>Caltrans District 7</td>
<td>1982</td>
<td>Archaeological Survey Report for the 07-la-110 Freeway Transitway Corridor Project</td>
<td>Inglewood, San Pedro, Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-6061</td>
<td>Lanz, Madeline</td>
<td>LSA Associates, Inc.</td>
<td>2001</td>
<td>Architectural Survey and Evaluation of the Historic Union Oil Terminal (Berths 148-151) of the Port of Los Angeles</td>
<td>Torrance</td>
<td>No</td>
</tr>
</tbody>
</table>
### Survey Report Number

<table>
<thead>
<tr>
<th>Survey Report Number</th>
<th>Author</th>
<th>Company</th>
<th>Date</th>
<th>Report Title</th>
<th>Quadrangle</th>
<th>Within Subject Property</th>
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<tr>
<td>LA-7031</td>
<td>Unknown</td>
<td>Jones &amp; Stokes</td>
<td>2003</td>
<td>A Cultural Resources Assessment for the Port of Los Angeles Waterfront Gateway Development Project, City of San Pedro, Los Angeles County, California</td>
<td>San Pedro</td>
<td>No</td>
</tr>
<tr>
<td>LA-7032</td>
<td>Slawson, Dana N. and Alice Hale</td>
<td>Greenwood and Associates</td>
<td>2003</td>
<td>Cultural Resources Summary: Port of Los Angeles Berths 97-109 China Shipping Yard</td>
<td>San Pedro</td>
<td>No</td>
</tr>
<tr>
<td>LA-9329</td>
<td>Lassell, Susan E.</td>
<td>Jones &amp; Stokes</td>
<td>2000</td>
<td>Final Evaluation Report for the Historic Fruit Company Terminal and the Port Café, Berth 147, Port of Los Angeles, Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-9330</td>
<td>Lassell, Susan E.</td>
<td>Jones &amp; Stokes</td>
<td>2000</td>
<td>Final Evaluation Report for Berths 104, 108-109, 115, and 118-120, Port of Los Angeles, Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-9359</td>
<td>Bonner, Wayne H.</td>
<td>Michael Brandman Associates</td>
<td>2004</td>
<td>Cultural Resources Survey and Historic Architectural Assessment for Sprint Telecommunications Facility Candidate LA54XC7761 (DWP Facility), 161 North Island Avenue, Wilmington Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>Survey Report Number</td>
<td>Author</td>
<td>Company</td>
<td>Date</td>
<td>Report Title</td>
<td>Quadrangle</td>
<td>Within Subject Property</td>
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<tr>
<td>LA-10477</td>
<td>Snaver, Noelle</td>
<td>ICF Jones &amp; Stokes</td>
<td>2009</td>
<td>An Analysis of Historic Period Artifacts Recovered from the Avalon Triangle Park Project, Port of Los Angeles, San Pedro, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-10528</td>
<td>Snaver, Noelle</td>
<td>Jones &amp; Stokes</td>
<td>2004</td>
<td>Final Archaeological Monitoring and Treatment Plan for the Los Angeles Harbor Department, Waterfront Gateway Project, San Pedro, CA</td>
<td>San Pedro</td>
<td>No</td>
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<tr>
<td>LA-11348</td>
<td>Akyuz, Linda, Ciarus Backes, and John Dietler</td>
<td>SWCA Environmental Consultants</td>
<td>2010</td>
<td>Archaeological Excavation at Avalon Triangle Park, Port of Los Angeles, City of Los Angeles, Los Angeles County, California</td>
<td>Torrance</td>
<td>No</td>
</tr>
<tr>
<td>LA-11410</td>
<td>Unknown</td>
<td>ICF Jones &amp; Stokes</td>
<td>2008</td>
<td>Cultural Resources Survey Report for the San Pedro Waterfront Project located in the City of Los Angeles, Los Angeles County, California</td>
<td>San Pedro, Torrance</td>
<td>No</td>
</tr>
</tbody>
</table>
Previously-Recorded Cultural Resources

A review of the records at SCCIC indicates that there have been 31 previously-recorded cultural resources within the one-mile search radius of the subject property. No sites are listed on the Archaeological Determination of Eligibility list. One site is listed on the Historic Properties Data File list, Property # 175908 – Port of Los Angeles: Shell Oil Terminal. No previously-recorded cultural resources are located within the subject property.
All previously-recorded cultural resources within a one-mile radius of the subject property are listed in Table 2 and mapped in Attachment C.

**Table 2 – Previously-Recorded Cultural Resources within a One-Mile Search Radius**

<table>
<thead>
<tr>
<th>Primary #</th>
<th>Other Identifier</th>
<th>Cultural Resource Type</th>
<th>Cultural Resource Description</th>
<th>Within Subject Property</th>
<th>Latest Update</th>
<th>Eligibility Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Property # 175908</td>
<td>Historic-Period</td>
<td>Port of Los Angeles: Shell Oil</td>
<td>No</td>
<td>2009</td>
<td>Determined ineligible for NRHP by consensus through Section 106 process – Not evaluated for CRHR or Local Listing (6Y)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Built Environment</td>
<td>Terminal</td>
<td></td>
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<tr>
<td>19-000146</td>
<td>LAN-146</td>
<td>Archaeological Site</td>
<td>Refuse Heap</td>
<td>No</td>
<td>1977</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Destroyed)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>19-000149</td>
<td>LAN-149</td>
<td>Archaeological Site</td>
<td>Refuse Heap</td>
<td>No</td>
<td>1981</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Destroyed)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>19-000285</td>
<td>LAN-285</td>
<td>Archaeological Site</td>
<td>Shell Midden</td>
<td>No</td>
<td>1981</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Destroyed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>19-002135</td>
<td>CA-LAN-2135 H</td>
<td>Historic-Period</td>
<td>Los Angeles Union Oil Refinery</td>
<td>No</td>
<td>1993</td>
<td>No Determination Available</td>
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<tr>
<td></td>
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<td>Built Environment</td>
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<td></td>
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<td>Built Environment</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>(Destroyed)</td>
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<tr>
<td>19-167267</td>
<td>Property # 021220</td>
<td>Historic-Period</td>
<td>S.S. Catalina – Great White Steamer</td>
<td>No</td>
<td>1988</td>
<td>Removed from NRHP by the Keeper (6W)</td>
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<tr>
<td></td>
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<td>Built Environment</td>
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<tr>
<td>19-167314</td>
<td>NA</td>
<td>Historic-Period</td>
<td>Terminal Island – Historic Japanese Fishing Community</td>
<td>No</td>
<td>1979</td>
<td>NA</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Primary #</td>
<td>Other Identifier</td>
<td>Cultural Resource Type</td>
<td>Cultural Resource Description</td>
<td>Within Subject Property</td>
<td>Latest Update</td>
<td>Eligibility Status</td>
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<tr>
<td>19-173042</td>
<td>Property # 027064</td>
<td>Historic-Period Built Environment (Further research indicates property is no longer extant)</td>
<td>Steam Propulsion System of the Ferry Boat Sierra Nevada</td>
<td>No</td>
<td>2006</td>
<td>Individual Property Determined Eligible for NRHP through Section 106 Process. Listed in the CRHR. (2S2)</td>
</tr>
<tr>
<td>19-180720</td>
<td>Property # 089064</td>
<td>Historic-Period Built Environment</td>
<td>Lane Victory – Large Maritime Vessel</td>
<td>No</td>
<td>1990</td>
<td>Individual property listed in NRHP by the Keeper. Listed in the CRHR. (1S)</td>
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<td>19-186623</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-1 49 Wharf</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
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<tr>
<td>19-186624</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-149 Tank Farm</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-186625</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-149 Dock House</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-186626</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-149 Gatehouse</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
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<td>19-186627</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-149 Firewall</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-186628</td>
<td>NA</td>
<td>Historic-Period Built Environment</td>
<td>Berth 148-149 Substation</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>Primary #</td>
<td>Other Identifier</td>
<td>Cultural Resource Type</td>
<td>Cultural Resource Description</td>
<td>Within Subject Property</td>
<td>Latest Update</td>
<td>Eligibility Status</td>
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<tr>
<td>19-186629</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Union Oil Terminal Berths 150-151</td>
<td>No</td>
<td>2000</td>
<td>Appears Eligible for NRHP as an Individual Property through Survey Evaluation (3S)</td>
</tr>
<tr>
<td>19-186630</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Berths 150-151 Truck Rack</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-186631</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Berths 150-151 Warehouse</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-186687</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Berths 150-151 Main Office</td>
<td>No</td>
<td>2000</td>
<td>Not Eligible for Listing or Designation (6)</td>
</tr>
<tr>
<td>19-187017</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Wheelhouse Cafe</td>
<td>No</td>
<td>1997</td>
<td>Found Ineligible for NR, CR or Local Designation through Survey Evaluation (6Z)</td>
</tr>
<tr>
<td>19-187020</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Cottages at 419 West Harry Bridges Avenue</td>
<td>No</td>
<td>1997</td>
<td>Found Ineligible for NRHP, CRHR, or Local Designation through Survey Evaluation (6Z)</td>
</tr>
<tr>
<td>19-187021</td>
<td>NA</td>
<td>Cultural Resource</td>
<td>Harbor Steam Plant</td>
<td>No</td>
<td>1997</td>
<td>Appears Eligible for NRHP as an Individual Property through Survey Evaluation (3S)</td>
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CHL = California Historic Landmark  
CRHR = California Register of Historical Resources  
LAHCM = Los Angeles Historic-Cultural Monument  
NA = Not Applicable  
NRHP = National Register of Historic Places
Historic Research

In addition to the CHRIS records search, URS conducted site-specific research on the subject property and the immediate vicinity. This information was utilized to develop a historic context in order to properly evaluate the subject property. Sources of information reviewed include Certified Local Government annual reports and data, Historic American Building Survey and Historic American Engineering Record records, the National Register Information System, the online database for National Register sites, Calisphere Digital Resources, Online Archives of California, Government Land Office Plat Maps, Sanborn Fire Insurance Maps, local historical societies and libraries, private collections, and inventory files and data on-file with other agencies that control property near the subject property (Refer to Attachment D).

Documentation regarding the history of the company was uncovered within the corporate headquarters. These materials included the following:

- architectural drawings of the Wilmington Facility
- historic-period photographs of several Borax facilities throughout California
- corporate literature and memoranda
- legal property documentation
- site plans and survey information
- previous environmental reports
- building permits

In-person research was also completed by URS. This research was conducted on January 9, 2013 at the California State University of Long Beach Special Collections, the San Pedro Bay Historical Society, and the Long Beach Historical Society. In-person research continued on January 10, 2013 at the Los Angeles Department of Building and Safety and the City of Los Angeles Bureau of Engineering. Additional research efforts were conducted remotely. Investigative correspondence was initiated with the Los Angeles Harbor Department Historical Archives, Wilmington Historical Society, and the 20 Mule Team Museum in Boron, California. The research provided insight into the historic contexts and themes of the area and specific information concerning the potential cultural resources within the property boundaries (e.g., date of construction, historic land ownership).

In addition, on January 14, 2013 information requests were sent to groups and organizations that may be interested in historical resources. The letters afforded local governments, historical societies, and other groups the opportunity to provide information regarding historical resources within or near the subject property. Recipients of the request included the following:

- Alameda Naval Air Museum
- Wilmington Chamber of Commerce
- California State University of Long Beach Special Collections
- San Pedro Bay Historical Society
- Long Beach Historical Society
- Boron Chamber of Commerce
- Port of Los Angeles
On January 14, 2013, Dan Hoffman, Executive Director of the Wilmington Chamber of Commerce, responded that the Chamber of Commerce is not aware of any significant cultural resources within a half-mile radius of the site.

On January 14, 2013, Anne Hansford, Archivist of the San Pedro Bay Historical Society, responded to URS’ request for information. Ms. Hansford replied that URS can review the San Pedro Historical Society’s collection of historic maps and photographs.

Field Survey

An architectural survey was performed within the subject property on January 10, 2013. The survey was completed by Jeremy Hollins and Joel Levanetz; individuals who meet the Secretary of the Interior’s Professional Qualification Standards in Architectural History and History. A DPR 523 series form was completed for the property (refer to Attachment E).

Historic Context

The historic themes researched for purposes of establishing an evaluative historic context for the subject property include the early history of San Pedro Bay, establishment of the Port of Los Angeles and Long Beach, development of U.S. Borax and the U.S. Borax Wilmington facility. References used as part of this historic context are included in Attachment F.

Early History of San Pedro Bay

Portuguese explorer Juan Rodriguez Cabrillo recorded sighting San Pedro Bay in 1542. He described it as an “excellent harbor” and named it Bahia de los Fumos (Bay of Smokes) after seeing the smoke from hunting fires lit by the native Tongva-Gabrielino people who occupied the area prior to European arrival. Sixty years later, Sebastian Vizcaino dropped anchor off the site and reported the bay as a cove “with shelter from the northwest, west and southwest winds with a small island in it.” The small island, about a half-mile east of a promontory on the western shore, was later named Deadman’s Island. To the north, a set of sand dunes called Rattlesnake Island were present; these sand dunes protected the small channels and sloughs of the inland harbor from ocean waves. Between the islands lay an 18-foot bar of sand and rock. Vizcaino renamed the bay “San Andres”. In 1734, Spaniard Cabrera Bueno renamed the bay “San Pedro,” the name that has persisted.¹

The first permanent European settlement of the region occurred in 1769, when Spanish soldiers and priests arrived to colonize California. Mission San Gabriel, about 40 miles inland from the bay, was established in 1771. The Spanish set up a system of large land grants, and the Nieto and Dominguez families controlled the waterfront lands at San Pedro.²

Trade during the Spanish Period was forbidden except with Spanish ships. Driven by the need for more regular supplies and trade, residents developed a thriving cargo-smuggling industry, which was supported by the small

² Ibid., 2.
town established at San Pedro. After Mexico declared independence from Spain in 1822, the new Mexican government lifted the trade restrictions and San Pedro became a robust commercial center. Lands along the bay remained in the possession of the Spanish land grantees.  

California came under the control of the United States in 1848, during the Mexican-American War. Two years later, California became a state in the Union. A young American, Phineas Banning, who arrived in the region in 1851, saw the potential for improving the harbor and its facilities to accommodate the increasing cargo shipments arriving in the rapidly-developing region. Banning eventually became known as the “Father of the Los Angeles Harbor” for his many ventures, which included the establishment of a freight and passenger transportation business that served five states, the founding of the small town of Wilmington, and the introduction of the first railroad bill to the California Legislature. Banning solicited Congress successfully for the first improvements to the harbor. This included the dredging of the main channel in 1871 to a depth of 10 feet and the construction of a breakwater between Rattlesnake Island (now Terminal Island) and Deadman’s Island (no longer present). The railroad industry became the dominant transportation agent for the thousands of tons of cargo that moved through the port.  

During the 1880s, the population of the City of Los Angeles increased from less than 15,000 to over 50,000, placing increasing strain on the small San Pedro harbor to handle the cargoes of lumber for construction and coal for the railroads and building. Beginning in the early 1880s, the Southern Pacific Railroad Company (Southern Pacific) attempted to monopolize trade in the region by promoting a deep water harbor in Santa Monica. The Southern Pacific tried to capture the entire Senate Commerce Committee appropriation of $250,000 planned for improvements to San Pedro harbor. However, in 1896, Congress granted the appropriation to San Pedro as originally planned, thereby laying the foundation for the modern ports of Los Angeles and Long Beach.  

Establishment of the Ports of Los Angeles and Long Beach

By the turn of the century, the population of Los Angeles had doubled to more than 100,000, resulting in increasing demands for building supplies and other cargo to support the growing metropolis. With that in mind, the city annexed a 16-mile strip of land on the outskirts of the Communities of San Pedro and Wilmington in 1906 for a port (both towns became part of the City of Los Angeles three years later). A permanent Los Angeles Board of Harbor Commissioners was created in 1907 to oversee the port. By 1911, the first 8,500-foot section of the harbor breakwater was completed and the main channel was widened to 80 feet and dredged to 30 feet.  

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4 Board and City, “Virtual History Tour.”
5 Queenan, Port of Los Angeles, 27, 31, 39.
7 Queenan, Port of Los Angeles, 48.
Meanwhile, in 1909, the Los Angeles Dock and Terminal Company purchased 800 acres of sloughs and salt marshes at the mouth of the Los Angeles River adjacent and to the south of the Port of Los Angeles, to develop a port off of the City of Long Beach. The State of California officially granted the tideland areas to the City of Long Beach for port operations in 1910. The City of Long Beach continued the dredging project commenced by the Los Angeles Dock and Terminal Company after the company declared bankruptcy in 1916.8

The opening of the Panama Canal in 1914 sparked a boom in shipping to the Los Angeles and Long Beach ports. The need for deeper channels as well as extended breakwaters led to considerable dredging and land reclamation efforts in the ports during the twentieth century. Just 15 years after its first development, Long Beach attained “deep water” port status, handling more than one million tons of cargo and 821 vessel calls in 1926.9

In 1936, oil was discovered in Long Beach’s harbor (the oil field is known as Wilmington Field), which led to the construction of the first oil well there in 1938. By 1943, the oil drilling program was producing 17,000 barrels a day and generating $10 million a year in oil revenues. Unfortunately, as early as 1939, the oil extraction appeared to be causing subsidence.10 Although dikes were built in 1945 for flood control at high tide, by 1957 a 16-square-mile area of the north harbor had sunk between two feet and 24 feet. The solution was a water injection program termed Operation “Big Squirt,” that was undertaken in 1960 and seemed to halt the subsidence.11

**U.S. Borax**

In 1962, Thomas Cramer, the first superintendent of the U.S. Borax Wilmington Facility, noted “[t]he story of the Wilmington Refinery is a forty year part of the hundred year history of the borax business in America.”12 In fact, U.S. Borax traces its origins to 1872 when founder Francis Marion Smith discovered the presence of borate deposits in Nevada. During those initial operations, the raw borate material was refined near the site of its extraction. According to Cramer, refining facilities were built beside marshes in Nevada. By 1883, following the discovery of borates in Death Valley, the refined product was being hauled great distances across the desert by 20-mule teams.13 Smith founded the Pacific Coast Borax Company (predecessor to Borax Consolidated, which then became U.S. Borax) in 1890.14 The 20 Mule Team symbol became the trademark of the Pacific Coast Borax Company in 1896.15

While exploiting a new source of borate deposits in the Calico Mountains, Smith decided to move away from the traditional onsite refining process to a large-scale refining operation in Alameda, California. The Alameda refinery was purchased about 1883 and expanded by Smith in 1890. The new Pacific Coast Borax Company

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9 Ibid.
11 Port of Long Beach, “History.”
Refinery was sited on Alameda Point in order to take advantage of inland rail connections and convenient access to shipping in the San Francisco Bay. The siting of the Alameda plant marked a key innovation point for the company. From then on, processing no longer occurred on site at the mines but ore was instead transported to a coastal plant for refining and shipping. Additionally, the Alameda facility pioneered the use of reinforced concrete construction, a method that was subsequently used at the Bayonne, New Jersey facility in 1897. Smith resigned from the company in 1914.

After World War I, the company chose to construct a new facility that would have ready access to the ships traveling through the new Panama Canal and would have proximity to raw materials being extracted in Death Valley. The company purchased property on Mormon Island in the Port of Los Angeles. In 1923, construction began on the Wilmington Facility and in 1924 the Alameda refinery was closed. The Bayonne refinery in New Jersey was also phased out.

In 1927, soon after the Wilmington Facility was finished, the company opened an underground borate mine in Boron, California in the Mojave Desert. In 1956, the company became U.S. Borax when it merged with United State Potash Corporation. In 1957, the company built the Boron refinery and borax production was moved to Boron. The Boron Mine was converted to a surface mine in the late 1950s. In 1967, the company was acquired by Rio Tinto. In 1980, U.S. Borax built its borax acid plant. Today, U.S. Borax continues to operate the Boron Mine, which is California’s largest open pit mine.

U.S. Borax Wilmington Facility

The U.S. Borax Wilmington Facility was constructed on Mormon Island on land previously used as the Chandler Shipyard, a World War I shipyard. Architect Albert C. Martin was retained to prepare the plans for the new facility, which was to include a refinery building, power plant, warehouse, office building, and a 150-foot stack. Norman B. Patten served as Martin’s building superintendent and G.H. Schulte was the structural engineer. Davidson Construction was retained as the general contractor.

Martin was a master architect; however, the design of the U.S. Borax Wilmington Facility does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963).

The facility was constructed using the same reinforced concrete construction method that the company had employed first at Alameda 32 years previously and subsequently at Bayonne, New Jersey. Because the soil at Mormon Island could not sustain the load of the concrete buildings, piles were first driven below the groundwater line before concrete pads and pedestals were poured. The final design for the refinery called for a 207-by-252-foot

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17 George Herbert Hildebrand, Borax Pioneer: Francis Marion Smith (La Jolla, CA: Howell-North Books, 1982), 56.
19 Ibid.
20 Ibid.
21 U.S. Borax, 100 Years, 32-34.
building with three stories and a rooftop water tower. Martin’s drawings also planned for a future expansion of the facility, including two additional refinery floors (never built), a lateral expansion on either side of the refinery (later partially constructed as the Connecting Shed and additions to the original Warehouse), and two additional buildings (never constructed). The stack was finished by November 1923. The main components of the buildings were completed on the last day of that same year, six months after the foundations had been finished.22

Meanwhile, the previously-installed boilers in the power plant and the plans for piping and equipment were drawn by Fred Beik by late fall 1923. By February 1924, the first of the equipment, the Sweetland press and Raymond power-mill, were installed in the refinery. Concurrently, the last of the building windows, roofing, and painting were being finished. The bulkhead had been put in and the channel in front of the property dredged during 1923, so construction of the wharf, warehouse, and wharf office building began in 1924. Separately, the Alameda facility was dismantled, and the bulk borax production goods were transferred to Wilmington. On November 1, 1924, the first cargo was loaded onto a ship from the Wilmington Facility.23 On January 27, 1925, a survey map of the Borax Consolidated Wilmington facility was completed, which illustrated the site as containing a Factory (Refinery), Power Plant, Stack, Oil Tank, Office (now Wharf Office), Warehouse, Wharf, and Mud Scow Dock.24 The Wilmington facility produced borax, Borax Soap Chips, BORAXO, bar soap, and borax “glass”.25 The U.S. Borax Wilmington Facility was an early occupant of the port, but it nevertheless was established years after the port had attained success through the shipping of such commodities as lumber, petroleum, and citrus products.26

Robert Shaw, Wilmington facility manager beginning in 1983, recollected that Borax Consolidated was challenged by the City of Los Angeles in 1935 in regard to ownership of the property.27 The U.S. Supreme Court decided in the company’s favor on November 11, 1935. The company was able to successfully prove that the property was part of the original Mormon Island and was never tideland; therefore, Los Angeles could not claim that the property was “public land” and take ownership. The property is now the only privately-owned property in the Port of Los Angeles.28

Since Martin drafted his designs for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Large additions to the south and north ends of the warehouse building and a Connecting Shed between the Refinery and the expanded Warehouse (generally based on Martin’s 1923 designs for expansions) were constructed by 1952.29 Following a feasibility study conducted in the early 1960s, U.S. Borax began plans for major terminal facilities at the Wilmington facility.30 Construction began on the terminal (Bulk Storage Silos) in 1962 and the first railcar of product was loaded into the 12-silo structure in 1963. The 100-foot-tall by 30-foot-diameter concrete silos introduced a massive and substantial change to the property. A large conveying system was constructed at the same time to move the bulk borates from the silos to the holds of

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22 Cramer, “Wilmington Refinery.”; U.S. Borax, 100 Years, 32-34.
23 Cramer, “Wilmington Refinery.”
25 U.S. Borax, 100 Years, 34.
26 U.S. Borax, 100 Years, 32-34.
In 1979, an additional four-silo structure was constructed to the south of the original 12-silo structure. Over time, additional alterations have occurred to the subject property and its buildings, including seismic retrofitting of many of the buildings and structures between 1988 and 2004, which also resulted in the removal of the original 150-foot stack near the power plant; introduction of large industrial equipment such as tanks, silos, conveyor belts, and piping; infilling of many of the buildings’ windows and entries; and attachment of conduit, other piping, utility equipment, security lights, cameras, and signage to the exterior walls of the buildings.

Currently, the Wilmington Facility serves as Rio Tinto’s primary North American shipping facility. The refinery produces 16 specialty products, including wood preservatives and flame retardants, which can be stored in the facility’s 35,000 tons of storage capacity before being transferred to docked ships for export.

Architectural Description of the Property

The subject property is a part of an irregular-shaped lot that contains six main buildings and structures. From (generally) south to north, they are: Refinery Building, with the Power Plant adjacent to the east, the Connecting Shed, the Warehouse, with the Bulk Storage Silos to the east, and the Wharf Office. In addition, the subject property contains a dock along the west boundary that is adjacent to Slip No. 1. Miscellaneous industrial equipment such as tanks, piping, sheds, and a railroad spur are also located within the boundaries of the subject property, which is surrounded by a chain-link fence.

Refinery Building

The Refinery Building, designed by Albert C. Martin, was built in 1923 and 1924 and is a Utilitarian Industrial-style refinery (refer to Attachment B for photographs of the subject property). It occupies the south end of the subject property and has an east-facing orientation. It is three stories with a rectangular plan. Due to changes in refining technologies since 1924, the resource has undergone extensive alterations and upgrades. The building features a flat roof covered with composite sheet. Distributed across the rooftop are large tanks, pieces of electrical equipment, and conduit visible from the pedestrian right-of-way. At either corner of each elevation, there are groupings of three simple rectangular pilasters extending from the ground level to the roofline. In many cases, the stylized rectangular capital of the pilasters has been removed and the surface of the column has been altered or removed to accommodate industrial equipment.

Fenestration on all elevations includes original, large, multi-pane metal industrial windows with hopper panels near the center of most. A number of the locations where windows once existed have been in-filled, and many of the remaining windows have been altered or retrofitted for equipment installation. The walls of the refinery building no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers

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31 Shaw, “Wilmington Recollections.”
the wall surface. The restexurc in is most apparent over the locations of in-filled windows. None of the wall surfaces indicate evidence of historic-period signage visible in historic photographs (refer to Attachment D).

The main entry, which is off-centered on the primary (east) façade, is filled with a non-original metal commercial door. The stoop for the main entry extends south passed a large non-original roll top door that is off-centered on the primary façade. This area serves as the East Dock for the Refinery Building. Both the loading dock and main entry are located beneath a corrugated metal awning. A smaller loading station with a non-original metal roll top door is located off-centered on the southern half of the primary façade. At the far south corner of the primary façade is a set of non-original industrial metal double doors beneath a similar corrugated metal awning. At the center and north corner of the primary elevation are two additional non-original single panel metal doors. Large non-historic period conduit, rigging, and other industrial equipment components are attached to the walls.

Although broader, the north elevation has similar characteristics and alterations to the primary façade. These similarities included a substantial amount of window in-fill, non-original stucco texturing on wall surfaces, and a significant level of alteration due to the installation of modern industrial equipment. Along with these changes, a non-original concrete exterior walkway has been installed along the north elevation. This addition extends across the entire elevation and includes a metal handrail separating the platform from an asphalt roadway. The rectangular stringcourse that historically spanned the entire center of the north wall has been largely removed to allow for industrial equipment mounting. Additional non-original equipment includes a concentration of conduit and metal framing near the center of the north elevation that connects the Refinery Building with the adjacent Power Plant.

Along with the alterations to the texture and form of the elevations mentioned above, the south and west elevations have both received significant non-original structural additions. With regard to the south elevation, in order to adapt the Refinery Building to new technologies, a two-story processing structure was attached to the wall. The large-scale alteration appears to be two separate tanks supported by a base constructed of steel beams. Access ladders, conduit, and vents extend from the structure to the south elevation. Directly adjacent on the west elevation of the Refinery Building is the Connecting Shed.

Connecting Shed

The Connecting Shed was built by 1952, generally following Martin’s 1923 original design for an addition at that location. It is a Utilitarian Industrial-style building (Attachment B). It occupies the southeast portion of the subject property and has a south-facing orientation. It is one story with an L-shaped plan. The building features four consecutive and similar width front-gable roofs covered with composite sheet. Located on the southernmost portion of the roof are electronic equipment and piping. The roof features a plain parapet that is stepped on the south and north elevations and topped with a simple cornice. Mounted on the parapet are non-original spotlights. A simple cornice wraps around the building below the parapet. A sign with a historic photo of the Borax 20-Mule Team and the words “Rio Tinto” are painted on the parapet of the primary (south) façade.

Fenestration on the primary (south) façade includes a number of paired multi-pane, metal-framed industrial windows, two bays with non-original metal roll top and swing up doors, and an industrial door. The north elevation features four evenly-spaced bays and a number of paired multi-pane, metal-framed industrial windows. The east elevation is directly adjacent to the Refinery Building and the west elevation is directly adjacent to the
Warehouse. The walls of the north and south elevations are covered with non-original corrugated metal sheeting. Large non-historic period conduit, rigging, and other industrial equipment components protrude from the wall. Non-original safety barriers, metal corner braces, and post bollards have been added near bay corners. The north elevation features a single, long awning of corrugated metal sheeting that is supported by steel truss bracing. The awning runs the length of the building, connecting with the Warehouse awning and providing cover for a concrete loading dock that also continues from the Warehouse.

*Warehouse*

The original portion of the Warehouse was built in 1924, with major additions to the north and south by 1952 that generally followed Martin’s 1923 original design for the expansion of the Warehouse. It is a Utilitarian Industrial-style warehouse (refer to Attachment B for photographs). It occupies the east side of the subject property, beside Slip No. 1, and has an east-facing orientation. It is one story with a narrow rectangular plan. Due to changes in refining technologies since 1924, the Warehouse has undergone extensive alterations and upgrades, including the large additions by 1952 on the north and south elevations that quadrupled the size of the building. The Warehouse features a side-gabled roof covered with composite sheet. A non-original rooftop structure is located on the northern end of the rooftop. The structure is supported on a steel platform and features a covered conveyor belt that extends from the Bulk Storage Silos structure, a boom that can drop down for ship loading, corrugated-metal sheeted shed-like buildings, and numerous pipes and other industrial features. Like the adjacent Connecting Shed to the southeast and the Wharf Office to the north, the Warehouse roof features a plain parapet that is stepped on the north elevation and topped with a simple cornice. Mounted on the parapet are non-original spotlights. A simple cornice wraps around the building below the parapet.

Fenestration on the east, north, and west elevations includes a number of multi-pane metal industrial windows and evenly-spaced bays with non-original metal roll top doors. The primary (east) façade and the west elevation each feature approximately 29 bays. The north elevation has one bay. The south elevation is directly adjacent to the Connecting Shed. The walls of the east elevation are covered with non-original corrugated and flat metal sheeting. Large non-historic period conduit, rigging, and other industrial equipment components are attached to the walls. Non-original safety barriers, metal corner braces, and post bollards have been added near bay corners. None of the wall surfaces indicate evidence of historic-period signage notable in historic photographs (refer to Attachment D).

The north and west elevations have similar characteristics and alterations as the east elevation. These similarities include non-original metal corrugated sheeting wall covering and non-historic period conduit, rigging, other industrial equipment components, safety barriers, metal corner braces, and post bollards, which have been added near openings and corners. The west elevation features a single long awning of corrugated metal sheeting that is supported by steel truss bracing. The awning runs the length of the building, providing cover for a raised concrete loading dock.

*Wharf Office*

The Wharf Office, designed by Albert C. Martin, was built in 1924 and is a Utilitarian Industrial-style wharf office (refer to Attachment B for photographs). It occupies the northwest corner of the subject property and has an east-facing orientation. It is two stories with a rectangular plan. The resource has undergone some alterations to
accommodate the changing needs of the facility. The building features a side-gabled roof covered with composite sheet. Distributed across the roof ridge are approximately seven vents and a hatch or sunroof, all visible in historic photographs (refer to Attachment D). The roof features a plain parapet that is stepped on the south and north elevations and topped with a simple cornice. Mounted on the parapet are non-original cameras and spotlights. A simple cornice wraps around the building below the parapet.

Fenestration on all elevations includes large original multi-pane industrial metal-framed windows with hopper panels near the center of most. They are generally arranged in groupings of three. Many of the windows contain non-original air conditioning units that are supported on metal platforms with metal braces. Two fixed, wood-framed windows are located on either side of the northernmost entrance of the east elevation. One of the panes has been in-filled with wood. The walls of the Wharf Office no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers the parapet and corrugated metal sheeting covers the walls below the parapet. Numerous tracks of non-original conduit, piping, and other industrial equipment are attached to the walls.

The primary (east) façade has three entries, of which only the northern entry is original. The two southern entries are additions to the building and are filled with single industrial metal doors with one pane. The southernmost entry is covered by a non-original metal security door. The original entry (the northernmost entry) is filled with a wood-framed door with a single light. An original awning protrudes from the wall above the entry. A non-original awning extends over one of the first-story windows.

The south elevation has two original entries: one centered on the first story and one centered on the second story, the latter of which is reached by a metal staircase that replaced an original staircase. The entries are filled with non-original single industrial metal doors with one pane. The north and west elevations have similar characteristics to the other façades but they have no entries.

**Power Plant**

The Power Plant, designed by Albert C. Martin, was built in 1923 and 1924. It is a Utilitarian Industrial-style steam power plant (refer to Attachment B for photographs). It occupies the center-north portion of the subject property. It is approximately two stories in height with a L-shaped plan. Due to changes in power generating technologies since 1924, the resource has undergone extensive alterations and upgrades. The building features a slightly barreled roof covered with composite sheet. Distributed across the rooftop are pieces of non-original electrical equipment, vents, piping, and two tall, narrow, metal steam stacks. The roof has a simple parapet on which numerous non-original conduit pipes, other pipes, security cameras, and lights are mounted on or behind.

Fenestration on all elevations includes large rounded, arched, metal-framed windows with two hopper panels near the center. A number of the locations where windows once existed have been in-filled and many of the remaining windows have been altered to accommodate pipes and other industrial equipment. The walls of the power plant building no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers the walls, which are beveled at the base. The retexturing is most apparent over the locations of in-filled windows. Seismic bracing bolts are visible on all the walls below the parapet. Evidence of disintegration of the plaster and concrete is visible on some walls.
The power plant has a number of entries on the east elevation, including a non-original metal roll top door, a non-original single industrial metal door with a single pane, and a non-original double metal industrial door with two panes. Four windows have been in-filled on the east elevation. In addition, the original concrete stack adjacent to the east elevation is no longer present. A non-original sign is attached to the east wall and reads “Rio Tinto/Wilmington Operations.” Non-original access ladders, conduit, other piping, lights, vents, and other utility equipment have been attached to the walls.

The north, west, and south elevations have similar characteristics and alterations as the east elevation. These similarities included a substantial amount of window in-fill (three windows in-filled on the north elevation and two windows in-filled on the south elevation), non-historic period stucco texturing on wall surfaces, and a significant level of alteration due to the installation of modern industrial equipment such as non-original access ladders, conduit, other piping, lights, vents, and utility equipment. A non-original metal structure connects the west elevation of the Power Plant to the adjacent Refinery Building to the west.

An electrical substation is located directly to the north of the Power Plant.

**Bulk Storage Silos**

The original portion of the Bulk Storage Silos structure was built in 1962 and 1963, with a later addition in 1979. It is a grouping of 16 tower silos, topped with an industrial building and featuring associated industrial equipment, such as pipes, tanks, railroad car loading bays, and convey or belts (refer to Attachment B for photographs). The structure occupies the northeast portion of the subject property, adjacent to a railroad spur to the east.

The silos are arranged in two groupings: 12 silos on the north, which were first used in 1963 and which are arranged two-by-six; and four silos, which were a 1979 addition, are arranged in a T-shape, and are separated from the other grouping by a gap. The silos are constructed of reinforced concrete and feature cylindrical forms with flat roofs. The silos are approximately 100 feet in height and have approximately 30-foot diameters. The silos have ground-story entries that are filled with double metal industrial doors with single panes. Metal staircases are attached to the sides of each of the silos; the staircases lead to secondary entrances located approximately one-third up the side of the silos. Some of the silos also feature metal access ladders that extend from the ground level to the roof.

The two groupings of silos are attached via a rooftop industrial building, which has a narrow and long rectangular footprint. The building is centered on the roof of the Bulk Storage Silos structure, extending from one end to the other, bridging the gap between the two silo groupings. The industrial building is primarily one-story with some two-story attached small additions. The building has a gabled roof covered with composite sheeting, corrugated metal wall surface, and numerous windows and entries that connect to metal catwalks, stairwells, and other appurtenances such as industrial equipment, small sheds, and structures that are located on the rooftop of the larger silo structure. Conduit, large piping, and security lights are mounted on the walls of building.

A railroad car loading bay, constructed of metal and covered with corrugated metal sheeting, is attached to the structure at the ground-level on the east elevation. Vertical gravity silos and associated piping and equipment are mounted on the flat roof of the loading bay. The west elevation of the structure features numerous ground-level tanks, vertical gravity silos, and other related industrial structures, some mounted on steel frames. A covered
Findings and Recommendations

The property was evaluated for its eligibility for listing in the LAHCM and CRHR. Currently, the property is not listed on either register. A DPR 523 series form was completed for the property (refer to Attachment E). The following evaluation was completed by Jeremy Hollins and Joel Levanetz; individuals who meet the Secretary of the Interior’s Professional Qualification Standards in Architectural History and History (refer to Attachment F for professional qualifications).

LAHCM Criteria for Significance

LAHCM designation is reserved for those resources that have a special aesthetic, architectural, or engineering interest or value of a historic nature. The Cultural Heritage Ordinance establishes criteria for designation; these criteria are contained in the definition of a Monument in the Ordinance. A historical or cultural monument is any site (including significant trees or other plant life located thereon), building, or structure of particular historical or cultural significance to the City of Los Angeles, such as historic structures or sites:

1. in which the broad cultural, political, economic, or social history of the nation, state, or community is reflected or exemplified;
2. which are identified with historic personages or with important events in the main currents of national, state, or local history;
3. which embody the distinguishing characteristics of an architectural-type specimen, inherently valuable for a study of a period, style, or method of construction;
4. which are a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

A proposed resource may be eligible for designation as a LAHCM if it meets at least one of the criteria above.

LAHCM Evaluation

LAHCM Criterion 1: The property was assessed under LAHCM Criterion 1 for its potential significance as a property in which the broad cultural, political, economic, or social history of the nation, state, or community is reflected or exemplified.

Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of broad trends of the nation, state, or community. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus
products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was not an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point.

According to historical research, the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax Wilmington Facility does not reflect or exemplify broad cultural, political, economic, or social history of the nation, state, or community. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 1.

**LAHCM Criterion 2:** The property was assessed under LAHCM Criterion 2 as a property which is identified with historic personages or with important events in the main currents of national, state, or local history.

Historical research revealed that the property does not appear to be directly associated with the significant contributions from the life and career of an individual, such as Francis Marion Smith, who may have made important contributions to the history of the United States, California, or Los Angeles County. In fact, Smith resigned from Borax Consolidated in 1914, ten years before completion of the facility. Other individuals associated with the property, such as facility supervisors, were not revealed to have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 2 for association with historic personages.

Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of a significant event. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was not an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point. According to historical research, no important events occurred at its location. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 2 for association with important events in the main currents of national, state, or local history.

**LAHCM Criterion 3:** The property was assessed under LAHCM Criterion 3 as a property which embodies the distinguishing characteristics of an architectural-type specimen, inherently valuable for a study of a period, style, or method of construction.

To determine its architectural significance, the U.S. Borax Wilmington Facility requires evaluation as individual buildings designed in the Utilitarian Industrial-style, as well as individual components to a potential historic district. Based on historic research and field survey, the U.S. Borax Wilmington Facility does not appear to
possess distinctive characteristics of a significant Utilitarian Industrial design. While the plans for the U.S. Borax Wilmington Facility depict several characteristics typical of the Utilitarian Industrial-style typical in California in the 1920s, the property, in its current form, lacks the majority of these distinctive architectural characteristics and its architectural integrity has been significantly compromised. Presently, many of its large multi-pane windows have been in-filled. The non-historic period conduit, ventilation, and industrial equipment added to the facility have obstructed and significantly altered historic-period materials. These alterations include the replacement of the original board-formed wall texture with a stucco exterior wall treatment as well as the modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment. The absence of these original designed features undermines the distinctive architectural characteristics of the U.S. Borax Wilmington Facility. Additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Also, the simple rectangular chimney was not depicted in the 1924 drawings and does not match the original design of the building. The modern alterations and upgrades to the refinery complex detract from its intended architectural character.

Further, while the facility was constructed using reinforced concrete construction method, the facility is a late example of this method of construction. In fact, the company had pioneered the method at the Alameda facility 32 years previously and at Bayonne, New Jersey 27 years before, and by 1924, the construction method was relatively common.

Given the lack of integrity and the numerous alterations to the U.S. Borax Wilmington Facility, the property no longer retains its character-defining features and does not embody the distinctive characteristics of a type, period, or method of construction. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 3.

LAHCM Criterion 4: The property was assessed under LAHCM Criterion 4 as a property which is a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

While the design of the U.S. Borax Wilmington Facility was undertaken by Albert C. Martin, a master architect, the property does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his major contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963). Moreover, since Martin drafted his plan for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Currently, non-historic features such as 100-foot-tall Bulk Storage Silos structure, major alterations to the buildings, and industrial equipment obscure Martin’s contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect’s work that influenced his age. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 4.

CEQA Criteria for Significance
Generally under CEQA, a historical resource (these include built-environment and historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in PRC Section 15064.5 and are defined as any resource that:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

2. Is associated with lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Aside from meeting a CRHR criterion, a potential historical resource must also retain its historic integrity. Historic integrity is the ability of a property to convey its significance, and is comprised of seven aspects: location, design, setting, materials, workmanship, feeling, and association. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property’s physical features and how they relate to its significance.

**CRHR Evaluation**

**CRHR Criterion 1:** The property was assessed under CRHR Criterion 1 for its potential significance as a part of a historic trend that may have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of a significant event associated with the trends or events that have made a significant contribution to the broad patterns of history. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point.

According to historical research, no significant events occurred at its location and the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax Wilmington Facility is not associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing in the CRHR under Criterion 1 or to be considered a historical resource for purposes of CEQA.
CRHR Criterion 2: The property was assessed under CRHR Criterion 2 for its association with the lives of persons important to local, California, or national history. Historical research revealed that the property does not appear to be directly associated with the significant contributions from the life and career of an individual, such as Francis Marion Smith, who may have made important contributions to the history of the United States, California, or Los Angeles County. In fact, Smith resigned from Borax Consolidated in 1914, ten years before completion of the facility. Other individuals associated with the property, such as facility supervisors, were not revealed to have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing in CRHR under Criterion 2 or to be considered a historical resource for purposes of CEQA.

CRHR Criterion 3: The property was assessed under CRHR Criterion 3 for embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master or possessing high artistic values.

To determine its architectural significance, the U.S. Borax Wilmington Facility requires evaluation as individual buildings designed in the Utilitarian Industrial-style, as well as individual components to a potential historic district. Based on historic research and field survey, the U.S. Borax Wilmington Facility does not appear to possess distinctive characteristics of a significant Utilitarian Industrial design. While the plans for the U.S. Borax Wilmington Facility depict several characteristics typical of the Utilitarian Industrial-style typical in California in the 1920s, the property, in its current form, lacks the majority of these distinctive architectural characteristics and its architectural integrity has been significantly compromised. Presently, many of its large multi-pane windows have been in-filled. The non-historic period conduit, ventilation, and industrial equipment added to the facility have obstructed and significantly altered historic-period materials. These alterations include the replacement of original board-formed wall texture with a smooth stucco exterior wall treatment as well as the modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment. The absence of these original designed features undermines the distinctive architectural characteristics of the U.S. Borax Wilmington Facility. Additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Also, the simple, rectangular chimney was not depicted in the 1924 drawings and does not match the original design of the building. The modern alterations and upgrades to the refinery complex detract from its intended architectural character.

Further, while the facility was constructed using reinforced concrete construction method, the facility is a late example of this method of construction. In fact, the company had pioneered the method at the Alameda facility 32 years previously and at Bayonne, New Jersey 27 years before, and by 1924, the construction method was relatively common.

While the design of the U.S. Borax Wilmington Facility was undertaken by Albert C. Martin, a master architect, the property does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his major contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963). Moreover, since Martin drafted his plan for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Currently, non-historic features such as 100-foot tall Bulk Storage Silos...
structure, major alterations to the buildings, and industrial equipment obscure Martin’s contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect’s work.

Given the lack of integrity and the numerous alterations to the U.S. Borax Wilmington Facility, the property no longer retains its character-defining features and does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possesses high artistic values. Therefore, the property does not appear to be eligible for listing in the CRHR under Criterion 3 or to be considered a historical resource for purposes of CEQA.

**CRHR Criterion 4:** The property was assessed under CRHR Criterion 4 for the potential to yield or likelihood to yield information important to prehistory or history of the local area, California, or the nation.

The U.S. Borax Wilmington Facility does not appear to have the potential to yield important information about the development of borate refining or the Port of Los Angeles that is not readily available and presented above. Therefore, the property does not appear to be eligible for listing in the CRHR under Criterion 4 or considered a historical resource for purposes of CEQA.

For a property to be eligible for listing in the CRHR, it must also retain its historic integrity in addition to meeting one of the CRHR criteria. The CRHR traditionally recognizes a property’s integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. Though the facility does not meet the criterion for eligibility to the CRHR, the following summarizes its historic integrity analysis:

**Location** is defined as the place where the historic-period property was constructed or the place where the historic event took place. The subject property has not been moved; therefore, it retains its integrity of location.

**Design** is defined as the composition of elements that constitute the form, plan, space, structure, and style of a property. The form, plan, and space of the property have been altered by several additions and different periods of development. While some of the property’s design features remain (such as some stepped parapets, cornices, and several rectangular capitals) the form, plan, space, and structure have been significantly compromised as a result of upgrading and adapting the facility to new refining technologies.

**Setting** is defined as the physical environment of a historic-period property that illustrates the character of the place. The refinery was built in an industrial port area of Los Angeles. Currently, the property retains its setting. Due to several episodes of development and re-development, it does not retain the setting associated with the exponential growth of the port in the early 1900s following the opening of the Panama Canal.

**Materials** are defined as the physical elements combined in a particular pattern or configuration to form the historical resource during a period in the past. Many of the original materials have been altered or removed, such as a decorative wall features and board-formed concrete textured walls. Also, the addition of new industrial equipment and structures such as the Bulk Storage Silos has introduced materials not historically associated with the U.S. Borax Wilmington Facility.
Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. The property does not represent physical evidence of the crafts of a given period of history.

Feeling is defined as the quality that a historic-period property has in evoking the aesthetic or historic sense of a past period of time. The property in its present form does not evoke a historic sense of feeling, but rather that of a relatively recently constructed refining facility.

Association is defined as the direct link between a property and the event or person for which the property is significant. While the property is associated with Albert C. Martin, the property in its present form does not convey a direct link with the prominent architect.

Overall, while the facility has retained some aspects of historic integrity, the property does not appear to meet any of the CRHR or LAHCM criteria, and therefore is not considered a historical resource for purposes of CEQA.

Please feel free to contact us at (858) 812-9292 if you have any questions regarding this memorandum.

Sincerely,

Jeremy Hollins, Project Manager, URS
Joel Levanetz, Architectural Historian, URS

Attachments

Attachment A – Property Area Maps
Attachment B – Property Photographs
Attachment C – Records Search Results
Attachment D – Historic Research
Attachment E – DPR 523 Series Form
Attachment F – References Consulted and Professional Qualifications
Attachment A
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Attachment B
Looking northwest at a non-historic period storage silo.

Looking northeast at a grouping of non-historic period storage silos.
Looking southwest at the Connecting Building addition.

Looking south at the Connecting Building addition.
Looking north at the south elevation of the Connecting Building.

Looking north along the wharf area towards the south elevation of the Connecting Building.
Looking southeast from loading dock area of Warehouse Building.

Historic-period photograph looking southeast from loading dock area of Warehouse Building.
Looking southeast at detail of non-historic period addition to Warehouse Building.

Looking southeast at Warehouse Building.
Looking southwest at Warehouse Building.

Looking northwest at Warehouse Building.
Looking northwest at Wharf Office Building.

Detail of south east wall of Warehouse Office Building.
Looking west at the Power Plant.

Detail of in-filled window and non-historic period utilities added to Power Plant.
Looking east at alterations and non-historic period equipment added to Power Plant.

Detail of non-historic period metal roll-top door and window infill on north elevation of Power Plant.
Looking south at the north elevation of the Refinery Building with Power Plant in foreground.

Historic-period photograph of Refinery Building under construction (Courtesy of Chute, 1923).
Detail of in-filled windows and non-historic equipment on north elevation of Refinery Building.

Detail of in-filled windows and non-historic equipment on east elevation of Refinery Building.
Detail of in-filled windows and non-historic equipment on south elevation of Refinery Building.

Detail of in-filled windows, non-historic equipment and addition on west elevation of Refinery Building.
Attachment C

CONFIDENTIAL INFORMATION WITHHELD

The content of Attachment C contains confidential cultural resources location information and is available for review upon request with URS Corporation. The distribution of this material should be restricted to those with a need to know. Cultural resources are nonrenewable, and their scientific, cultural, and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resource information is in California Government Code 6254.1 (and the National Historic Preservation Act of 1966, as amended, Section 304).
Dear Ruth:

Here are a few answers to your questions as I recall them.

Mormon Island was, in the early days, an island in the Wilmington Lagoon. San Pedro was a village at the entrance to the lagoon and faced the sea. Point Fermin gave some shelter as did also the Palos Verdes Hills. Across from San Pedro lay the long sand island called Terminal Island and also a sharp rocky point called Bonsdorff Island. This is mentioned in Dana's "Two Years Before the Mast", which was written, as I recall it - about 1838.

A shallow channel and sand-bar formed the entrance to the lagoon and before dredging took place a depth of 2 1/2 feet at low tide over the bar was recorded. Early dredging had created a ten foot channel into the lagoon and this was probably the situation when San Pedro and Wilmington started their fight for recognition as the deep water port of Los Angeles as against the proponents of Santa Monica for a site on the open sea to be protected by a break-water. That is an epic story all by itself as the railroads took sides and the Southern Pacific went all out for Santa Monica while the Salt Lake (later Union Pacific) chose San Pedro and built their railroad out onto Terminal Island. Dredging and improvement started shortly after the turn of the century and Capt. A.A. Price, of the Army Engineers, later Major General, Chief Chemical Warfare Bureau, did much of the detail designing. Chennula and slips were dredged to 33 feet and over at low water, and the dredgings were pumped behind walls and dikes on the mud flats and islands of the Lagoon to make very high land for wharf and terminal facilities. A Harbor Belt Line, operated by the city - served all railroads.

In this process Mormon Island was connected with the mainland and lost its identity as a separate land feature. As originally surveyed at the time, it was patented to Mr. Banning in 1890 it comprised 18 acres, and lay roughly north and south being several times longer than it was wide. The Banning subsequently divided the island property into three parcels - the north of 8 acres, the middle of 5 acres and the south of 5 acres.

The Borax Co. subsequently purchased the north parcel, the city purchased the middle parcel and leased to the Shell Oil Co. for a Marine Oil Terminal and I do not know the ultimate history of the South parcel. I believe it was still in Sanning's ownership when I left in '38.
The name of Banning is closely associated with all harbor development and this family laid claim to considerable tideland areas which claim was contested by the City. A compromise resulted in Bannings getting a 30 year lease to considerable filled in tidelands, which became useful as harbor property but their title to Bannion Island was not contested at that time so far as I know. The 30 year lease has since expired. The Bannings were linked with early freighting and stage lines in Southern California — and Mr. Banning wrote a book on the subject. I believe their interest extended from Yuma to Los Angeles and Wilmington and perhaps north as well.

When I first became acquainted with the north tract of Bannion Island, shortly after World War I, there was an abandoned shipyard on the site. This had been known as the "Chandler Shipyard", and they had constructed wooden vessels there of considerable size during the war to help meet the emergency. Mr. Harry Chandler was the owner of the Los Angeles Times and a famous figure in Southern California history.

The yard had been in charge of Mr. Muller — an experienced ship builder of the old school. When I arrived in the area Mr. Muller was operating a small yard on the tract at the south end of the island, building yachts and other small boats. I believe much of the machinery had been moved from the Chandler yard to the new site.

The Borax Co. has several low wooden buildings on it and a ship's way. A long sloping area had been scooped out to provide the proper position for large timber which were still in position. On these timbers or ways, the boats were constructed and then were allowed to slide into the channel at launching time.

Across the channel was a wharf at which the Yale or Harvard docked each morning after a run from San Francisco. These fast sleek boats were a popular means of overnight travel coastwise at that time, but long since have given way to the Limiteds and the airplane.

The Borax Co. was a pioneer, industrially, in the harbor. I do not recall that there were any other manufacturers, up to that time, who had recognized the benefits of the location except the Union Oil, who had a refinery near San Pedro, and two or three large lumber companies who had yards for handling the coast wise movement of lumber. A few large oil companies had established terminals for the movement of oil both import and export. There were two or three canneries in the area.

I do not know the date upon which the Borax Co. acquired the site, but when I first went to the scene it had already been decided to move the Alamada refinery there and instructions were given to provide ample space for enlargement or expansion.
A monolithic concrete construction was decided upon as best suited to carry the weight of machinery required. The ground floor was constructed at freight car floor height to facilitate shipping. Two upper floors were provided and the roof was simply a third upper floor with full strength for future upward building if desired. Much equipment has since been placed on the roof. The building site was so selected that expansion at both ends was also possible, though I do not believe such expansion has yet been made.

Ground strength or bearing tests were made and we were convinced that a floating foundation would be inadequate for the great weights to be carried so clusters of piles were driven under the location of each building column and these piles were capped with concrete below permanent ground water level. Deterioration of piles does not take place where there is complete submersion in ground water.

The plant building has not been enlarged since the original construction although other structures have been placed on the premises. A wharf was built, soon after the main building was constructed and on this wharf a storage shed was built for the protection of goods to be shipped by water. A separate office building was placed on a small separate wharf at the north end. A casual observer would not notice that the small wharf is separate. The purpose was to avoid vibration and bumps when a large vessel, alongside the main wharf would pound the fender piles as waves caused it to move. I do not know what the present office arrangement is. Originally we placed the plant office in the main concrete structure for the superintendent and his staff. The office on the wharf was originally occupied by the Western Sales Department of the company and the Western Manager (Charles Dudley) and his staff together with the office of the auditor of the Tonopah & Tidewater R.R.

Buildings connecting the refinery with the wharf have since been built, so there is a considerable area under cover.

I should mention that the original construction also included a separate power plant, boiler plant and machine shop building and a towering concrete stack of 150 feet high which became a harbor landmark.

As a first step in starting the plant, the borax and soap making machinery was moved from Alameda. Operations and capacity were gradually increased. Rasorite was developed at the Baker Mine and processes were modified to take care of this new material. A boric acid plant was installed. In the latter part of the twenties the Bayonne Plant of the PCB Co. was closed down and much of the equipment moved to Wilmington, and thereafter, all soap products were made there, and until some manufacturer started at Borch, all borax and boric acid products of the company as well.
The city brought suit against the company claiming the original patent to Banning in 1890, to much of Mormon Island was faulty. They claim that the original lines of Mormon Island embraced too large an area. The suit was carried through the courts from the Federal District Court to the Supreme Court twice, and resulted in a complete affirmation of title in the Borax Co. I do not have dates in mind, but the suit was started in the late twenties and ended in the middle thirties.

Sincerely,

Tom

[Signature]

Tom Command
The story of the Wilmington Refinery is a forty year part of the hundred year history of the borax business in America. The discoveries of crude borax or borax ores have been in areas that were remote. The distances from the sources to consuming markets were great. The crude material was either sodium borate, which was put through a purification process, or calcium borate, which underwent a chemical conversion.

Operations have alternated between those in which the refinery was installed at the source of raw materials and those in which the refinery was located two hundred to three thousand miles away. Refined borax was originally produced on the Nevada marshes, in Death Valley and on the margin of Searles Lake. These were the days of the long desert hauls by twenty mule teams. Colemanite, which is a calcium borate, was discovered in the Calico Mountains, near Daggett, and in the early nineties became the source of boron for the refinery at Alameda, on San Francisco Bay. One section of the Alameda refinery was the first large concrete structure erected in America. The Pacific Coast Borax Co, built another concrete building at Bayonne, New Jersey in 1897 to be used as a borax refinery and for the production of boric acid and various soap products.

The source of borate supply was later shifted to the Death Valley region and the company constructed a railroad from Ludlow to the Colemanite mine at "old Ryan" and on to Rhyolite and Goldfield.
The rails have been long since taken up, but the names of several stations on the Tonopah and Tidewater R. R. are still on the maps of California. Baker, Rasor, Gerstley and Ryan were named after borax men of those days. By 1914 the mines were opened at "new" Ryan, overlooking Death Valley, and the Death Valley narrow-gauge was built. One of the original steam locomotives on this branch line is now on exhibition at Death Valley and the other is at the beach park in Carlsbad, New Mexico.

This was the situation right after the First World War: the mine was at Death Valley, the concentrator at Death Valley Junction, refineries at Dayonne and Alameda, and a packing plant and warehouse at Chicago. A powerful new economic force had recently come into being, the Panama Canal. Cargo were moving through the Canal between the East and East Coast and European freighters were calling at Los Angeles Harbor. Low cost water transportation was available. It became obvious that a change was impending in the methods of getting borax products to market.

Frank Jenifer, who was an official of the Tonopah and Tidewater, and later the president of Pacific Coast Borax Co., was charged with the responsibility of selecting the site for a new refinery, to be located on deep water and on a rail-water route from the mine to eastern and world markets. His choice was Mormon Island, at Wilmington, California.

Mormon Island, as its name implies, was once a very real island in the Wilmington Lagoon. This body of water was cut off from the ocean by Terminal Island. Phineas Banning was a pioneer of the Wilmington area. He owned boats and landings and freight
Wilmington Refinery

Wagons. Goods destined to or from all of Southern California were handled by him through the small ports of San Pedro and Wilmington. Banning applied for and obtained a patent to Mormon Island in 1820. There were about eighteen acres within the lines of his patent. About thirty years later the Federal government started the survey and development of the San Pedro-Wilmington deep-water harbor, under the direction of Corps of Engineers, U.S.A. The name of the officer in charge has been perpetuated as Fries Avenue, which ends at the refinery gate.

When deep-water channels were dredged and the mud and sand deposited to a thickness of five to fifteen feet over the remainder of the Wilmington Lagoon, Mormon Island became a part of the mainland, its west boundary facing the new Mormon Channel. Harry Chandler, the publisher, bought the north eight acres of the island from the Banning interests and during World War One had constructed ocean-going wooden ships there as a part of the war effort. It was this Chandler Shipyard site which the Borax Company purchased, together with the shop buildings and large timber ways.

Since the Alameda refinery was much closer to Wilmington than was the Hayonne plant, it was decided to first move the Alameda operations to the new location. The Alameda Engineering Staff, consisting of George Connell and Fred Beik went to work on designs which would incorporate the latest advances in borax production. H.F. Knight, who was in charge of the properties at Boroselvay and Alfred Newman, the Refinery Superintendent at Hayonne furnished valuable suggestions.
After the general outline of process space and storage requirements had been determined, architect A.C. Martin was retained to prepare drawings and specifications for a monolithic concrete structure. The building was to have great floor strength together with symmetrical interior dimensions and column spacing. The new refinery was to have three floors and a flat roof with a load capacity equal to that of the floors. Column strength to carry two additional floors was specified. The Company was following the concrete construction which it had pioneered thirty two years before at Alameda and which had proven itself at Bayonne. A power plant and stack were to complete the original Wilmington refinery structures.

Soil tests had demonstrated that the surface of the filled ground would not sustain a substantial concentrated weight. The engineers turned to piling as the answer. A large raft of logs was towed from the forests of the North and was moored in the channel. The Ledbetter Company moved in and drove the large logs, in clusters, under the locations of the future columns and other concentrated loads. The piles were cut off below the permanent ground-water line and concrete pads and pedestals were poured over them.

By the middle of June 1923 the general contractor, Davidson Construction, had started to put up construction towers to a height which would allow the distribution of fresh concrete by gravity to the rising refinery structure. The power plant and the hundred and fifty foot stack were also soon under way. The stack was topped out by the middle of November and had become a navigational landmark for the harbor.
The water tower platform on the roof was finished by the last day of 1923 and this ended the heavy construction. The building, exclusive of foundations, was completed in six months, which was considered a good record for that time. Norman G. (Pat) Patten was A. C. Vertin's building superintendent and was on the job during the entire construction period. G. H. Schulte of the same office was the structural engineer.

Fred Beik had his detail plans pretty well drawn for the piping and equipment by the late fall of 1923. As early as October the boilers in the power plant were already in place. By February 1924 the Sweetland press and Raymond powder-mills were ready. Equipment was being installed while the finishing touches on the building, such as windows, roofing and painting were still in progress. And now came a rather critical business, the transfer of operations from Alameda to Wilmington. This not only included bulk borax production but also soap products, Borazo, glycerine and package goods. This had to be accomplished without inconvenience or delay in deliveries to customers. George Connall looked after the Alameda end of this project, which included dismantling and shipment of all usable tanks, kettles and machinery. By late 1924 the transfer was complete.

The development of the Wilmington site included plans for wharf and structures which would give the Company for delivering cargos to freight vessels. During 1923 the bulkhead had been put in and the channel in front of the property dredged to a thirty five foot depth. A heavy rock rip-rap had been placed to protect the underwater slope of the land. With the completion of the refinery,
the wharf construction got under way. Another large raft of piling was floated in and the driving started in April. A Company headquarters office and a storage shed were built on the wharf. The office was placed on a small separate wharf so that freighters, bumping against the fender piles would not shake the building too much.

On November 1, 1924 the Santa Paula took on the first cargo of Colemanite to move to the East over the Wilmington site.
When it was time to move headquarters from San Francisco a number of the younger staff members came down by over-night boat. This was a popular means of travel and the Los Angeles dailies were in the habit of having reporters and photographers at the dock to interview and take pictures of the arriving celebrities. The coming of the Borax group was news-worthy. Articles about the large new plant in sight across the channel had frequently been in the papers. The party was photographed and notes were taken down. When they came to the dapper young office boy, he told the reporters that he was the General Representative and he received a top billing when the story appeared.

Conversation on top of the refinery during construction:

C. E. Zubriskie: "How tall is that stack, Tom?"

"One hundred and fifty feet."

C. B. Z.: "If you had remembered that the Bayonne stack is one hundred and fifty five feet you probably would have made this one a hundred and sixty."

R. C. Baker: "We lowered the brick stack at our British works by over one hundred and fifty feet."

I later consulted an engineer's hand-book and found the stack in question was about four hundred and fifty feet tall. I never found out whether this was before or after the lowering operation.
Miscellany continued:

A number of operating men at the Alameda Refinery came to Wilmington. Most of them stayed on. George Connell and Lou Boyer can probably recall the full list, as they were both at the Alameda plant. Charlie Born, Jimmie Campion, Maurice Hallinan, Martin Campion, Filipelli, Bart Keville and his son were among them but there were others. It would be hopeless for me to try and recall the names of those who came to work in 1924 but a list would be most interesting, especially if they are still on the payroll. The office force from San Francisco could also be a part of the Refinery story, since they came directly to the office site on Mormon Island. George Connell can furnish the name of the filter press man at Alameda who ground borax-glass at Wilmington. Also, perhaps the glycerine operator. Johnny Seipp came down from Death Valley at an early date. I believe Sandy was a little later. I do not recall just when Bradley, Paynard and Boyd signed on. Jimmie Voltum and Bill Boyer can tell a lot. George will also remember whether some power plant help came along.

J.M. Claman

June 24, 1962
Dear Nick:

I enclose some remarks regarding the start of the Wilmington refinery. There are several ways to handle this subject, and I have tried one of them. There is not much one can say about a concrete structure except to give its dimensions. But there is some sentiment in the fact that the story of concrete industrial buildings in America starts with the Alameda Refinery and I do not recall reading the reading about many large chemical plants of this type started after 1930. A waterfront property cannot be utilized to its maximum potential without adequate warehouse space and, in the case of multi-storied buildings, this requires great floor strength. About thirty years ago engineers started to design self-supporting chemical equipment and then putting a roof over it.

At Carlsbad we went to a much lighter construction. No interior warehouse space was provided, but we still stayed with floors since we looked forward to possible changes in the process. The dissolver building erected in the early forties went all the way to the "cover only" design. A leap forward was made when power plants were designed with all of the equipment placed outdoors except the operating stations. Chemical plants have gone a long ways in this same direction.

It seems to me that there is some interest attached to the reasons why the refinery came to Wilmington and I have recited
some of the facts. It will be recalled that the law does not permit vessels under a foreign flag to carry merchandise in inter-coastal trade. Lack of competition in the Canal route gave the railroads the opportunity to recapture the coast to coast traffic.

Young Dana in Two Years Before the Mast, describes conditions at Los Angeles Harbor in 1835. Deadman's Island was a feature of the shore-line when we moved to "Wilmington - a point of high ground at the entrance to the Inner Harbor."

"This, they told me, was a worse harbor than Santa Barbara, for southerners; the bearings of the headland being a point and a half more to windward, and it being so shallow that the sea broke often as far out as we lay at anchor. The gale from which we slipped at Santa Barbara, had been so bad a one here, that the whole bay, for a league out, was filled with the foam of the breakers, and seas actually broke over the Dead Man's Island."

The Southern Pacific had used every political and commercial pressure to have Santa Monica chosen for development by the Federal government. That fight, which went on for years, was finally resolved in favor of San Pedro.

I have prepared an album of about 150 pictures of early Wilmington development, and have most of the negatives. However I want to enlist your aid in rounding up some more. I loaned you a set of negatives which, when fitted together, provided a panorama of the Chandler Shipyards soon after Borax purchased it. On another day I used up a roll of six negatives taking pictures of Baker,
Nick Kockler

Zabriskie, Chichester, Knight, Rasor and myself. I have two of these, taken at a pile-driver on the site. You may have borrowed two of these recently but of this I am not sure. The other two may have been in the Los Angeles for a long time. Three or four years ago I was asked to identify Chichester in an enlargement there. Another film shows a group in the shadow of a shed at the site: Corkill, Newman, Jenifer, Baker, Zabriskie, Knight and Rasor. All of these negatives are post-card size. Perhaps you could send me contact prints of any of these that can be conveniently located so that I can add them to the album. I expect to mail this album to you shortly for inspection and comment. I am also short one negative showing the sales department and others in front of the borax wagons and which was taken in December 1934.

Please tear this writing apart and ask George Connell and Harry Gower to correct, augment and delete. Some of the facts related may seem dreary to the reader but can serve a purpose in recording matters that might otherwise be overlooked or forgotten.

Sincerely

J.M. Cramp

Mr. Nick Kockler
Los Angeles
**WILMINGTON REFINERY DATA**

<table>
<thead>
<tr>
<th>Plant Managers</th>
<th>Previous titles for this position were: Superintendent, Plant Superintendent, General Superintendent - the Plant Manager.</th>
</tr>
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<tbody>
<tr>
<td>Thomas M. Cramer</td>
<td>The first Superintendent. He came from the Alameda Plant, served: 1924 - 1930.</td>
</tr>
<tr>
<td>George A. Connell</td>
<td>The first Assistant Superintendent. Came from 1924 Alameda Plant, was promoted to Superintendent and served: 1930 - 1936.</td>
</tr>
<tr>
<td>Alfred Nauwen</td>
<td>Superintendent: 1936 - 1941</td>
</tr>
<tr>
<td>Maurice H. Pickard</td>
<td>Superintendent: 1941 - 1943</td>
</tr>
<tr>
<td>Patrick J. O’Brien</td>
<td>Superintendent: 1943 - 1948</td>
</tr>
<tr>
<td>Ronald V. Chettle</td>
<td>Superintendent through all titles listed above: 1948 - 1963. Then spent 14 months in Los Angeles, returned and served: 1964 - 1967</td>
</tr>
<tr>
<td>E. Dean Leman</td>
<td>Plant Manager: 1963 - 1964</td>
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<tr>
<td>Ronald V. Chettle</td>
<td>As shown above.</td>
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<tr>
<td>W. G. Anderson</td>
<td>Plant Manager: 1968 - 1969</td>
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<tr>
<td>Locke B. Parish</td>
<td>Plant Manager: 1969 - 1974</td>
</tr>
<tr>
<td>James G. Hardy</td>
<td>Plant Manager: 1974 - 1981</td>
</tr>
<tr>
<td>David R. Wheeler</td>
<td>Plant Manager: 1981 - 1982</td>
</tr>
<tr>
<td>Robert F. Shaw</td>
<td>Plant Manager: 1983 -</td>
</tr>
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</table>

**Miscellaneous Information:**

The transfer from the Alameda Refinery was completed in late 1924. The first shipment from the new Wilmington Refinery was made on November 1, 1924 ... this was a shipment of Colemanite to New York via the S.S. Santa Paula, Pacific Mail Steamship Company.
WILMINGTON REFINERY DATA - continued

This property is the only privately owned property in the Los Angeles Harbor. The size of the plant is 8,657 acres. This is a little less than half of the "true" Mormon Island which measured a little less than 18 acres.* Our fence line (water side/Edginton/Falcon Street) shows the shape of the original island -- from the fence to the fish cannery on Fries Avenue is filled-in land, but now known as "Mormon Island." The property line between our plant and Shell oil is about in the middle of the original island.

The Pacific Coast Borax Company was challenged by the Los Angeles Harbor Department in regard to their ownership of the property. They claimed it was part of the tidelands and sought possession as such. The Company protected itself by going to court and proving the property was a part of a "true" island, not tideland, and that the bill of sale was legal (from Phineas Banning ownership). One of the interesting ways the Company proved this point was by submitting results of core samples taken from our property -- they consisted of proof of flora and fauna, plus old nails, pieces of wood, etc. from an old boat yard that used to be located on the island; it is believed that the core samples were taken to a depth of about 30 feet. Pacific Coast Borax Company won the suit and a Consent Decree was entered which precludes further claim to the property.

Many improvements have been made to the process since 1924. The various departments within the building have been expanded, new products have been added, etc. A portion of the Plant was moved to Boron in 1937 when we switched to open pit mining. The largest expansion since building the Plant was the 30,000 tons Bulk Loading Terminal:

09/24/62 Ground broken for Bulk Terminal
05/13/63 First car of product from Boron loaded into silo.
11/28/63 First shipment from the Bulk Terminal to Rotterdam -- M.V. Johann
Schulte (Volkswagen transport).
09/14/79 Ground broken for an additional 4 silos (73-7055).

Plant Manager’s Secretaries
F. Brooks - 11/02/71 thru 07/02/80
E. Hall - 07/27/83 thru 12/05/86
D. Campbell - 12/08/86 thru 06/24/88
T. Long - 06/16/88 thru

* Maybe it would be better to say "about 18 acres" on my records not available at this time -- or check the Land Department for exact total acres -- the Wilmington portion is exact.
Detailed Parcel Information

Records for this property are kept at the South District Office
("How frequently is the information updated on this site?" and other FAQs)

Property Information
Assessor’s ID No. 7440-019-001
Site Address 300 FALCON ST
LOS ANGELES CA 90744
Property Type Commercial / Industrial
Region / Cluster 26 / 26818
Tax Rate Area (TRA) 00014

Recent Sale Information
Latest Sale Date
Indicated Sale Price

2012 Roll Values
Recording Date 02/24/1993
Land $1,951,895
Improvements $1,912,695
Personal Property $8,453,198
Fixtures $10,149,377
Homeowners’ Exemption $0
Real Estate Exemption $0
Personal Property Exemption $0
Fixture Exemption $0

Property Boundary Description
FOR DESC SEE ASSESSOR’S MAPS*POR OF LOT 1 SEC 8 T 5S R 11W

Building Description[s]
Improvement 1
Square Footage 99,000
Year Built / Effective Year Built 1945 / 1945
Bedrooms / Bathrooms 0 / 0
Units 0

Improvement 2
Square Footage 235,358
Year Built / Effective Year Built 1923 / 1930
Bedrooms / Bathrooms 0 / 0
Units 0

Improvement 3
Square Footage 1,026
Year Built / Effective Year Built 1963 / 1963
Bedrooms / Bathrooms 0 / 0
Units 0

Improvement 4
Square Footage 41,285
Year Built / Effective Year Built 1924 / 1956

1/17/2013
<table>
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<th>Bedrooms / Bathrooms</th>
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</thead>
<tbody>
<tr>
<td>Units</td>
<td>0</td>
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Improvement 5

<table>
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<th>Square Footage</th>
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<td>Year Built / Effective Year Built</td>
<td>1923 / 1954</td>
</tr>
<tr>
<td>Bedrooms / Bathrooms</td>
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</tr>
<tr>
<td>Units</td>
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I. INTRODUCTION

This report was prepared by Page & Turnbull at the request of the Alameda Reuse and Redevelopment Authority (ARRA). The purpose of this report is to describe the existing conditions present at the Alameda Naval Air Station (NAS Alameda) prior to its redevelopment as a mixed-use project area consisting of new market rate and affordable housing, commercial and light industrial facilities and public open space. This report will primarily concentrate on the relative significance of resources on the former naval air station, as well as provide a baseline level of information about NAS Alameda. Following the Introduction, Section II includes a brief description of NAS Alameda and discusses the proposed project. Section III summarizes the current historic status of NAS Alameda and Section IV discusses the history of the former base. Section V describes the historic district and character-defining features of its contributing buildings and structures. Section VI includes the historic preservation strategy. The report concludes with a Bibliography and Appendix including relevant bibliographic sources and support documents.

II. SETTING

NAS Alameda was constructed in the late 1930s and early 1940s on filled tidal lands and marshes on the western end of the City of Alameda, an urban island community of 72,259 people located near the geographical center of the San Francisco Bay Area. The former naval air station is bounded by Oakland Inner Harbor to the north, San Francisco Bay to the south and west and residential neighborhoods of Alameda to the east. The former base occupies 1,734 acres of dry land and 1,108 acres of submerged lands laying largely within the City of Alameda. There is also a small section of filled land and submerged lands lying within the City and County of San Francisco. Occupying a total of 2,842 acres, NAS Alameda is currently the fourth largest naval property in the San Francisco Bay Area (Figure 1).

NAS Alameda was commissioned in 1940; two years of active dredging, filling and construction operations were required to convert a former Army airfield, civilian airport and municipal marina into the most important naval air station on the West Coast during the Second World War. The Japanese attacks on Pearl Harbor and other American bases and possessions on December 7, 1941 unleashed a major expansion at NAS Alameda. Serving as a logistical supply base, aircraft repair facility, seaplane base and homeport for dozens of aircraft carriers and other naval vessels during the Second World War and the Korean and Vietnam Wars, the base continued in operation until 1993 when it was included on a list of bases to be decommissioned by the Base Realignment and Closure Commission (BRAC). Following BRAC's decision to close NAS Alameda, the Navy began preparations to decommission the base and turn it over to the City of Alameda. Although the Navy withdrew in 1997, the former base has not yet been transferred to the City. Today, the former base consists of an airfield with two runways, a seaplane lagoon, nine massive hangars and millions of square feet of industrial, warehousing, administrative, residential and recreational space, much of it presently vacant.
Figure 1. USGS Map showing location of NAS Alameda
III. CURRENT HISTORIC STATUS

Woodbridge Inventory
In 1992, prior to the closure of NAS Alameda, the Navy retained architectural historian Sally Woodbridge to survey all buildings on the base constructed prior to 1946 and assess their potential significance. Woodbridge determined that while no buildings appeared to be individually eligible for listing in the National Register, a potential historic district comprised of buildings, structures and landscapes dating to the pre-war and World War II periods existed at the core of the base. Consisting of eighty-five contributing buildings built between 1939 and 1945, the NAS Alameda Historic District (Historic District) was found to qualify for listing in the National Register under Criteria A (Events) and C (Architecture) (Figure 2). The Navy and the California Office of Historic Preservation (OHP) concurred with the findings and OHP formally listed the district as being eligible for listing in the National Register.1 The number of contributing buildings was revised to eighty-seven in a memorandum to OHP from the Navy, dated October 3, 1997 and acknowledged by OHP in a letter to the Navy dated November 5, 1997. In 2003, one contributor, Building 101, was lost in a fire, reducing the total number of contributors to eighty-six.

NAS Alameda Community Reuse Plan
In 1996, prior to the decommissioning of NAS Alameda, the City and ARRA adopted the NAS Alameda Community Reuse Plan (CRP), a “visioning” document designed to guide the City’s incorporation of base into the city and its conversion to civilian use. Although this document covers a variety of topics, it devotes relatively little space to cultural resources, including historic structures or landscapes. The only reference to the Historic District occurs in the Open Space and Conservation Element sections, where a brief discussion concludes with seven policies for the treatment of buildings within the Historic District boundaries.2

1996 Advisory Council for Historic Preservation Memorandum of Agreement
In 1996, a Memorandum of Agreement (MOA) was signed by the City, the Navy, OHP and the Advisory Council for Historic Preservation (ACHP). This document authorized the Navy’s proposal to demolish six contributing buildings within the Historic District.3 Although all six were deemed to be contributors to the Historic District, Buildings 75A (Officers’ Bathhouse), 115 (Ambulance Garage), 116 (Rehabilitation Center), 130 (Medical Laboratory), 135 (Community Facilities) and 137 (Recreation Storage Facility) were determined to be of lesser significance. All were constructed after 1942 and were not part of the original base design drawn up by the Navy Bureau of Yards & Docks. Furthermore, all but one (Building 75A) were classified by the Navy as “temporary” or “semi-permanent” buildings when they were constructed during the Second World War. As such, these temporary buildings were utilitarian structures built with lower quality materials and less substantial construction techniques. Constructed in a hurry to meet the immediate needs of wartime exigencies, temporary and semi-permanent buildings were not intended to be retained indefinitely once the War had ended. Nevertheless, as contributors, mitigation measures were required to lessen the effect of their demolition. Accordingly, the MOA required the recordation of each building according to Historic American Buildings Survey (HABS) standards. The completed documentation was submitted to OHP, the City and the Alameda Historical Society. To date, none of the vacant buildings have been demolished, although all have been recorded.

Guide to Preserving the Character of the NAS Alameda Historic District
In 1997, prior to decommissioning NAS Alameda, the Navy retained JRP Historical Consulting Services to develop Design Guidelines to facilitate the preservation and maintenance of contributing buildings and

1 Sally Woodbridge, Historic Architectural Inventory for Naval Air Station (Alameda, 1992).
2 EDAW, Inc., NAS Alameda Community Reuse Plan (San Francisco, 1996), pp. 5-14-5-16.
3 “Memorandum of Agreement Submitted to the Advisory Council on Historic Preservation Pursuant to 36 CFR, Section 800.6,” on file with the City of Alameda.
lands one within the Historic District. Prepared as a guide to assist the Alameda Planning & Building
Department and the Historic Advisory Board (HAB) in evaluating proposed redevelopment projects, the
Design Guidelines identified important character-defining features and established five sub-areas within the
Historic District: (1) Administrative Core, (2) Landplane Hangars Area, (3) Seaplane Hangars Area, (4) Shops
Area and (5) Residential Area.4

1999 Advisory Council for Historic Preservation Memorandum of Agreement
In September 1999, a second MOA was signed by the City, the Navy, OHP and ACHP. This document
required the Navy to complete the following tasks related to historic preservation prior to transferring the base
to Alameda: (1) prepare and submit a National Register nomination for the Historic District, (2) donate or
permanently loan the inventory of historic artifacts from NAS Alameda to museums in Alameda or the Bay
Area and (3) follow the Maintenance and Repair Guidelines for the Naval Air Station Alameda Historic District
extracted from the JRP Consulting Services technical report of April 1997.5 To date, the Navy has not completed
the National Register nomination, although recent conversations indicate that they have identified funds and
personnel who will begin the process.

NAS Alameda Listed as a Historic Monument
In September 1999, the City passed Resolution No. 13139, listing the NAS Alameda Historic District in the
City’s Historical and Cultural Monument List.

Environmental Compliance
In 1999, the Navy completed a Final Environmental Impact Statement (FEIS) titled: Disposal and Reuse of Naval
Air Station Alameda and the Alameda Annex, which was required before the base could be transferred to Alameda.
Meanwhile, the City completed a Draft Environmental Impact Report (DEIR), titled: Reuse of Naval Air Station
Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility. Both documents identified the
NAS Community Reuse Plan, adopted in 1996 and amended in 1997, as the preferred alternative for the reuse of NAS
Alameda. Although the FEIS and DEIR concluded that the preferred alternative would have a significant effect
on the Historic District, both documents stated that appropriate mitigation measures would reduce the impacts
to a less-than-significant level.

On June 6, 2000, the Navy and ARRA signed a Lease in Furtherance of Conveyance (LIFOC) for NAS
Alameda. By the terms of this agreement, ARRA leased the base from the Navy and took charge of
maintenance and subleasing buildings to tenants. From this point on, all leases were to be granted under the
terms of the City’s Interim Leasing Program, in anticipation of a future master-planned redevelopment.

In November 2001, the City of Alameda issued a DEIR for a proposed amendment to the City’s General Plan,
which would result in the creation of the new Alameda Point Element. In March 2002, the City issued a new
Notice of Preparation (NOP) for a second DEIR for the revised General Plan Amendment (GPA). The second
GPA DEIR was finalized in March 2003 and published. On April 28, 2003, the GPA was considered for
adoption by the City of Alameda Planning Commission and adopted by the Alameda City Council on May 20,
2003.

4 Steven D. Mikesell, JRP Historical Consulting Services, Guide to Preserving the Character of Naval Air Station Alameda Historical
5 “Memorandum of Agreement Among the United States Navy, the Advisory Council on Historic Preservation and the
California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of the
Historic Properties on the Former Naval Air Station, Alameda, California,” on file with the City of Alameda, p. 2.
Figure 2. NAS Alameda Historic District Boundaries
IV. HISTORIC CONTEXT

Native American Period
Prior to European contact, the former marshlands on the western end of Alameda Island were occupied by a Penutian-speaking tribelet belonging to the larger Ohlone civilization. Although called the Costeños or “coast dwellers” by the Spanish, today their Native American descendents prefer the term Ohlone. Similar to many coastal California aboriginal groups, the Ohlone survived by fishing, hunting and gathering. Favored foods included fish, shellfish, waterfowl, acorns, roots, nuts, berries and other foods readily available in the marshlands, streams and foothills of the pre-contact San Francisco Bay Area. Based on the oral traditions of the tribe and data gathered by archaeologists from several large shellmounds on the margins of San Francisco Bay, it is likely that the ancestors of the Ohlone first inhabited the land surrounding San Francisco Bay between 5000 and 2000 BC. Ohlone occupation of the Bay Area appears to have been continuous until the beginning of the historic era, circa 1700 AD. After the arrival of Spanish missionaries and soldiers during the last quarter of the eighteenth century, the traditional lifestyle of the Ohlone gradually gave way to the influence of the Mission System and accompanying demographic changes brought on by disease and declining birthrates.6

Historically marshland and tidal flats, the site of NAS Alameda was utilized by the Ohlone as a rich larder where men would catch fish, hunt waterfowl and gather shellfish. Due to the fact that most of the land was at least partially submerged, it is unlikely that any permanent settlements were located within the boundaries of the former air station. However, permanent Ohlone settlements were not far away. Until it was quarried to provide surfacing for runways at the San Francisco Bay Airdrome, a prehistoric midden or refuse heap called Sather Mound was located approximately two miles southeast of NAS Alameda. Consisting of huge mounds of discarded shells, the middens were excavated in 1900 by an amateur archaeologist known as Captain Clark, who found them to contain flaked stone tools and burials. In addition to Sather Mound, five other known Ohlone sites have been identified in what is now the City of Alameda.7

European Contact: Spanish and Mexican Periods
The first permanent European settlements in the San Francisco Bay Area were established during the last quarter of the eighteenth century with the founding of Misión San Francisco de Asís and the Presidio of San Francisco in 1776. Two decades later, Misión San José was established by the Franciscans in what is now Fremont. During the ensuing decades, the Ohlone were rapidly dispossessed of their livelihoods, lands and freedom after being moved to the missions, where they were converted to Catholicism and taught European ways. Many died from exogenous diseases and others were killed when they attempted to escape and to return to their former way of life. Meanwhile, the Spanish and later Mexican governors of Alta California were granting vast tracts of land to retired Spanish soldiers and Mexican settlers. In 1820, Governor Don Pablo Vicente de Sola, the last Royal Spanish governor of Alta California, granted Rancho San Antonio to Sergeant Luis María Peralta. The 44,800-acre ranch included all of what is now Alameda and much of Oakland. In 1842, Peralta divided Rancho San Antonio among his sons. Antonio María Peralta, his third son, received 15,206 acres comprising the entire Alameda Peninsula, known then as Bolsa de Encinal.8

Early American Period
On February 2, 1848, the United States and Mexico signed the Treaty of Guadalupe-Hidalgo. Drawn up at the conclusion of the Mexican-American War, the treaty ceded much of northern Mexico to the United States. In exchange, the United States paid Mexico fifteen million dollars, assumed responsibility for three million dollars in claims against Mexico by American citizens and relieved Mexico of its monetary debt to the United States. Long before the ink dried on this document, American and European immigrants had been streaming into

6 Busby et al., Archaeological Survey and Site Evaluation: Disposal and Reuse, Department of Defense Family Housing, Novato, Marin County, California (1995).
7 Information on file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

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California. In 1850, the year California became a state, William W. Chipman and Gideon Auginbaugh purchased the section of Rancho San Antonio called Bolsa de Encinal from Antonio Maria Peralta. Bolsa de Encinal, which roughly translated means "pocket of oaks," was a tract of 1,960 acres comprising the majority of what is now the City of Alameda. The future site of NAS Alameda was part of this tract, although as partially submerged tidal flats and marshland, the land had little value.9

In 1853, the State Legislature created Alameda County out of parts of Contra Costa and Santa Clara Counties. Responding to a huge influx of American and foreign immigrants into the San Francisco Bay Area during the Gold Rush, Chipman and Auginbaugh sold off sections of Bolsa de Encinal to speculators and real estate developers, who in turn subdivided the lands into farmsteads and residential lots. In 1854, the communities of Alameda and Encinal were incorporated, although neither was ultimately ratified by local election. However, due to poor access and lack of infrastructure, people did not flock to either settlement. Consequently, the peninsula remained sparsely populated throughout the 1850s and 1860s. On the other hand, the level terrain, rich soils and benevolent climate made Alameda ideal for pasture and horticulture. In addition, the presence of vast stands of native oaks made Alameda a popular location for commercial wood-cutting and charcoal manufacturing operations.10

**Railroads Arrive at Alameda Point**

In 1864, Alameda became infinitely more accessible to the wider world with the completion of the first leg of Alfred A. Cohen’s San Francisco & Oakland Railroad. The original alignment extended from what is now Versailles Avenue in eastern Alameda to Alameda Point, at the southwestern tip of the peninsula. The railroad was soon extended into Oakland via a bridge across San Leandro Bay and eventually on to Hayward. As the closest dry ground to San Francisco in Alameda, Alameda Point was selected by Cohen as the ideal location for railroad shops and a ferry wharf. From Alameda Point, ferries would connect rail passengers to San Francisco. Called “Cohen’s Wharf,” Alameda Point attracted a hotel, housing and several industries. Hoping to profit from land sales around his wharf, Cohen laid out a town in February 1868 and named it Woodstock.11 Bounded by present-day Lincoln Avenue, Third Street, San Francisco Bay and Atlantic Avenue, Woodstock occupied a small section of what is now the southeastern corner of NAS Alameda.

Between 1868 and 1869, the community of Woodstock enjoyed a major building boom. In 1868, Pacific Coast Oil Works opened for business. Operated by Samuel Orr, the company was a predecessor to the Standard Oil Company.12 For a brief time, Woodstock became the western terminus of the Transcontinental Railroad with the arrival of the first train from New York at Cohen’s Wharf on September 6, 1869. Two months later, the Central Pacific Railroad, which had purchased the San Francisco & Oakland Railroad from Alfred Cohen in 1868, constructed a terminal at Prescott Street in West Oakland and removed the Transcontinental Railroad terminal from Cohen’s Wharf.13 Woodstock sustained another blow in 1873 when the Central Pacific re-routed the San Francisco & Oakland tracks from Alameda Point to Oakland via a new bridge spanning the Oakland Estuary just west of Webster Street. Cohen’s Wharf was quickly abandoned and much of Woodstock reverted to agrarian uses.14 The wharf and shops slowly deteriorated and collapsed but the remains of the facilities were encountered during excavations performed in 1938 during the construction of NAS Alameda.

In 1872, the City of Alameda incorporated, encompassing the entire peninsula historically known as Bolsa de Encinal, encompassing the communities of Encinal, Alameda and Woodstock (Figure 3). According to the 1870 U.S. Census, the population of the new city remained very small, with only 1,557 residents. Nevertheless, major transportation projects undertaken during the 1870s set the stage for Alameda to eventually assume a

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9 Ibid.
10 Ibid., p. 6.
11 Ibid., p. 78.
14 Ibid., p. 71.
leading role in industrial, commercial and residential development in the decades to come. In 1874, the U.S. Army Corps of Engineers began dredging San Antonio Creek in anticipation of a proposed canal linking the Oakland Estuary with San Leandro Bay. As part of this work, the Corps built a “training wall” to guide the flow of San Antonio Creek.15 This structure still exists north of NAS Alameda and is listed on the Alameda List of Monuments.

The completion of James G. Fair’s South Pacific Coast Railroad from Santa Cruz to Alameda in 1878 restored railroad uses to Alameda Point. The right-of-way traversed the city from San Leandro Bay in the east, ran along Encinal and Central Avenues and terminated at a new pier near the decaying remains of Cohen’s Wharf.16 The new railroad began to attract industry back to Alameda Point. In 1879, Pacific Coast Oil Works built a kerosene refinery at Alameda Point near the southwest corner of what is now the intersection of Pacific Avenue and Main Street, within the present-day eastern boundary of NAS Alameda.

In search of improved access to San Francisco Bay, the South Pacific Coast Railroad eventually constructed a raised track bed along Main Street to the company’s new Alameda Pier and Ferry Terminal at the northwestern corner of what is presently NAS Alameda. The construction of the causeway and ferry terminal in 1883 was the first major documented filling operation in the tidal marshland that would eventually become NAS Alameda. The causeway structure consisted of a double rock wall filled with mud and rubble, stretching over two miles into the Bay (Figure 4). Constructed on top of the causeway were two tracks, a wagon road and a pedestrian walkway. Standing at the western end of the causeway was an 800’-long, 280’-wide pile trestle upon which was located a small railroad yard and massive terminal building. The terminal building measured 310’ by 100’ with two wings, each measuring 30’ by 510’ in plan. The Eastlake-style terminal featured electric lighting and was reported to have been “much handsomer an architectural sense than that of the Central Pacific (later Southern Pacific terminal in Oakland).”17 The new South Pacific Coast pier (later called the Alameda Mole) was parallel to the Southern Pacific’s Long Wharf on the other side of the Estuary in Oakland (later called the Oakland Mole). Both were much closer to San Francisco, cutting the length of the ferry trips between San Francisco and the East Bay by fifteen to twenty minutes. The new location also provided better access to deep water, solving the perennial silting problems that occurred in the shallower waters off Alameda Point.

The old South Pacific Coast Railroad terminal in Alameda was destroyed by fire in 1902 and subsequently rebuilt by the Southern Pacific in 1903-04. After the 1906 Earthquake destroyed the San Leandro Bay trestle, the Southern Pacific bypassed the Alameda Pier and Ferry Terminal, reserving it exclusively for local service. In 1934, the terminal was retired following the completion of the San Francisco-Oakland Bay Bridge. No longer dependent on ferries, rail service on the bridge was provided by the Interurban Electric Railway (more popularly known as the Key System) on the lower deck until the 1960s. The Alameda Pier and Ferry Terminal were demolished when the Navy began constructing NAS Alameda in 1938.18

15 Ibid.
16 Ibid.
18 Henry E. Bender and Thornton Waite, “Additional Depots Designed by D.J. Patterson,” undated manuscript in the California State Railroad Museum.
Figure 3. Map showing northern Alameda County in 1878. Courtesy Bancroft Library, UC Berkeley

Figure 4. Detail of Oakland Tribune Map showing Alameda Point, ca. 1885. Courtesy Online Archive of California
Industrial Development at Alameda Point

Reflecting its growing importance as an industrial and residential community, Alameda re-incorporated as a
Charter City in 1884. Between 1870 and 1880, the population grew from a little over 1,500 to 5,708. By 1890
the population had nearly
doubled to 11,165.
Residential development in
the form of rows of
speculator-built cottages and
larger residences on the
“Gold Coast” replaced the
farmsteads along the principal
rail corridors. Meanwhile,
Woodstock, at the western
end of the city, attracted
increasing amounts of heavy
industry, including refineries,
pottersies and shipyards. In
1885, the Standard Oil
Company of California
purchased the Alameda Oil
Works and Pacific Coast Oil
Company and consolidated
these operations in a
spawling complex located
immediately west of South
Gate in what is now NAS
Alameda (Figure 5). The refinery remained in business at Alameda Point until Standard Oil moved its
operations to Point Richmond in 1903.19 In 1886, Standard Oil Company was joined at Alameda Point by N.
Clark & Sons, a large commercial pottery at the corner of Fourth Street and Pacific Avenue in Woodstock.20

One of the most illustrious industries to relocate to Alameda Point was Pacific Coast Borax Company,
constructed in 1893 by Francis “Twenty Mule Team” Smith, the famous Death Valley borax miner. Although
far from his Death Valley mines, Smith chose Alameda Point for its convenient rail connections and access to
San Francisco Bay. Smith constructed a huge wood-frame and concrete refinery complex on what is presently
the site of the Engine Overhaul Shop (Building 360) and a wharf and coal storage warehouse on what is now
the location of the Engine Test Cell complex (Building 14). When it was completed, Pacific Coast Borax
Company was the largest borax refinery in the world and reportedly one of the first to make use of reinforced-
concrete in the United States (Figure 6).21 The refinery was closed in 1930 after the exhaustion of the borax
mines in Death Valley and the main four-story refinery building was subsequently dynamited. The Navy spared
at least one building from the borax plant when they began grading and filling NAS Alameda in 1938. This
building, Building 163, still exists as a small brick maintenance shed in the southeastern corner of the base.

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20 Ibid., p. 72.
21 Ibid., p. 73.
Despite the industrial boom at Alameda Point, most of what is now NAS Alameda remained undeveloped throughout the nineteenth and early twentieth centuries. First, ongoing title disputes over the submerged tidal flats and marshes between the Central Pacific Railroad (the successor to the South Pacific Coast Railroad) and the heirs of Antonio Peralta made investment in these lands risky. Even more daunting was the high cost of dredging and filling several thousand acres of submerged tidal flats. The 1897 Sanborn Fire Insurance Map, the earliest detailed insurance map to cover the area, shows almost no development in the area within what are now the boundaries of NAS Alameda. Meanwhile, the section of Alameda formerly known as Woodstock consisted of the Standard Oil Company Refinery, the Pacific Coast Borax Company complexes and a handful of wood-frame workers' dwellings along Pacific Avenue (See Sanborn Maps in Appendix A).

The dawning of the twentieth century witnessed many developments that contributed toward the evolution of Alameda into an important Bay Area community. By 1900, Alameda had a population of 16,464, making it the fourth largest city in the Bay Area and the eighth largest city in California. The completion of the Tidal Canal in 1902, which linked the Oakland Estuary with San Leandro Bay, provided additional Bay frontage for shipyards and other water-dependent industries in Alameda and Oakland. Incidentally, the Tidal Canal severed most of Alameda from the mainland, transforming the bulk of the community into an island in San Francisco Bay. Now known as the “Island City,” the citizens and business leaders of Alameda anticipated continued industrial and residential growth in the upcoming decades. The 1906 Earthquake and Fire was a boon to Alameda. Fleeing the devastation in San Francisco, an influx of earthquake refugees boosted Alameda’s population to 23,383 by 1910. Rows of neat Craftsman bungalows infilled much of the remaining vacant land in the city, converting the still quasi-rural community into a dense streetcar suburb of San Francisco.22

U.S. Naval Air Power
The history of naval aviation begins well over three decades before the founding of NAS Alameda. The Wright Brothers’ successful flight at Kitty Hawk, North Carolina on December 17, 1903, launched the aviation revolution. Within a decade of this event, the value of the airplane as a military tool had become increasingly apparent to the United States military. The Navy was the first to create an aviation wing when it established the Naval Aviation Department in 1911. The Army followed suit in 1912 when it set up the Aviation Section within the U.S. Signal Corps. In 1914, the Navy opened its first naval air station at Pensacola, Florida.23

For most of the nineteenth century, the Navy focused its attention on threats coming from Europe and as a result, most Naval installations were located on the Atlantic and Gulf Coasts. The Spanish-American War of 1898 and growing American concerns over Japanese power in Asia following the Japanese victory in the Russo-

22 United States Census, 1910.
23 Department of the Navy, Naval Historical Center, Chronology of Significant Events in Naval Aviation, Part I http://www.history.navy.mil/avi-1910/PART01.PDF.
Japanese War of 1904-05, caused the Navy to shift its focus from Europe to the Pacific. Before 1900, the only naval installation of any consequence in California was Mare Island Naval Shipyard in Vallejo. In 1907, the Navy established the first Pacific Fleet and in 1922, the United States Fleet was again reorganized, with a Battle Fleet in the Pacific and a Scouting Fleet in the Atlantic. Most of the Navy's large battleships were moved to the Pacific to counter the growing threat from Imperial Japan. In the early 1920s, the Navy began looking for ports to house the growing Pacific Fleet; eventually San Diego, California; Bremerton, Washington and Pearl Harbor, Hawaii were selected. In 1921, the new headquarters of the Eleventh Naval District were established in San Diego, where they remained until they were moved to Pearl Harbor in 1940.24

Despite having established the first military aviation wing in 1911, Navy brass initially downplayed the significance of aircraft in combat. It was only after Billy Mitchell demonstrated the ability of an airplane to sink a battleship off Hampton Roads, Virginia in 1922 that the Navy began to seriously investigate the use of aircraft in future naval engagements. Not long after Mitchell's feat, the Navy began constructing its first aircraft carriers from converted colliers and battle cruisers. The first purpose-built aircraft carrier constructed, the USS Ranger, was commissioned in 1934. New land bases were established for naval aircraft as well. The earliest naval air station at Pensacola was joined in the 1930s by installations at Anacostia (Washington, D.C.); Norfolk, Virginia; San Diego; Pearl Harbor and the Panama Canal Zone.25

Alameda Point Becomes Center of Aviation in the Bay Area
Pioneering Bay Area aviators often dealt with significant challenges including frequent fog and the scarcity of level vacant land for take off and landing. The western portion of Alameda, on the other hand, was soon identified as being an ideal location for civil aviation, mostly due to its central location, abundant level land and infrequent fog-filled days. The first recorded flight at Alameda Point took place on Columbus Day, 1911, when aviator Weldon Cooke took off from Alameda Point to entertain President William Taft and other spectators gathered on the north side of the Estuary in Oakland.26

With its deepwater access and protected location, Alameda Point’s potential strategic value attracted the attention of top military brass during the early twentieth century. Alameda Point’s first defense-related industry materialized in 1916 when Bethlehem Steel Shipbuilding Company built a shipyard on the Estuary immediately northeast of what is now NAS Alameda. Several drydocks and manufacturing buildings still survive on the site, presently the location of the Alameda Ferry Terminal. A year later, during the height of the First World War, local Alameda business leader John J. Mulvany convinced the Navy that Alameda Point would be an ideal location for a destroyer base.27 Mulvany’s lobbying efforts resulted in a fact-finding investigation by a committee headed by Admiral James Helm. The Helm Report recommended that a supply station be built at Alameda. The Helm Report went on to argue that Alameda’s sheltered location on a major bay, coupled with the presence of local industry and infrastructure, made the site compare most favorably with the Navy base at Hampton Roads, Virginia. With only one other major West Coast naval installation at San Diego, the Helm Report concluded that a new base at Alameda would fit in well with the Navy’s plans to establish a chain of facilities stretching along the Pacific Coast from San Diego to Seattle.28

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25 Ibid.
26 *History of U.S. Naval Air Station Alameda, California,* manuscript at the Pacific Branch of the National Archives, San Bruno (January 9, 1945), p. 2.
27 Ibid., p. 1.

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Charles Lindbergh’s famous transatlantic flight in 1927 unleashed a second and more sustained interest in commercial aviation in the United States, with hundreds of small private and municipal airfields opening in the wake of his flight. Opening in 1927, Mills Field in South San Francisco was the first major airfield constructed in the Bay Area. This airfield was eventually purchased by San Francisco and evolved into San Francisco International Airport. Oakland followed suit with the Oakland Municipal Airport. Alameda did not lag far behind and in 1928 Alameda Municipal Airport opened for business on filled land near the Alameda Pier and Ferry Terminal on the northwestern corner of the future NAS Alameda (Figure 7). In addition to a short runway, the facility consisted of an administration building and three hangars. Curtis Wright Aviation was the principal tenant until Pan American Airways leased the facility to house the company’s famous China Clippers.29

San Francisco Bay Airdrome

After witnessing the success of Alameda Municipal Airport, the Board of Regents of the University of California began making plans to construct their own airport on 458 acres of marshland that the university had acquired in western Alameda. The rectangular tract was bounded by Atlantic Avenue to the south, Main Street to the west, the Bethlehem Steel Shipbuilding Company yard to the north and Webster Street to the east. The San Francisco Bay Airdrome was intended to serve as a major regional airport and construction began in 1930. After draining the site, two runways—one 3,400’ in length and the other 1,700’—were graded and paved with crushed oyster shells looted from prehistoric Ohlone shell middens on Bay Farm Island. The airport offices and the terminal were at first housed in a single 53,000-square-foot hangar constructed at a cost of $150,000. The San Francisco Bay Airdrome was initially very successful and in the early 1930s, a 160’ addition was added to the original hangar and construction began on a second hangar. By the mid-1930s, however, the facility began to lose most of its major airline tenants to Oakland Municipal Airport and Mills Field. For the rest of the 1930s the San Francisco Bay Airdrome was primarily used by private aircraft. In 1941, the Navy condemned seventy acres of the airdrome bordering Atlantic Avenue for a housing project and later ordered the

29 History of U.S. Naval Air Station Alameda, California (San Bruno, California: Manuscript at the Pacific Branch of the National Archives, January 9, 1945), p. 3.
abandonment of the rest of “America’s first downtown Airport” to eliminate possible interference with operations at NAS Alameda.30 Today, the site of the former airdrome is occupied by Alameda College and the new “Alameda Pointe” subdivision.

Benton Field
The third major airfield built at Alameda Point got its start in 1930 when the Army acquired a 128-acre tract of partially submerged land located between Alameda Municipal Airport and the San Francisco Bay Airdrome.

(Figure 8). On April 3, 1931, Captain Leander Larson arrived at the newly named Benton Army Air Corps Field to take charge of building the first military airfield at Alameda Point. On May 8, 1931, Captain Larson received authority to spend $500,000 to undertake the following work: drilling a well, driving piles prior to filling, constructing a levee, dredging and building a 200,000-gallon water tower and railroad spur.31 Although it does not seem to have reached completion, Benton Army Airfield was substantially underway on the northern portion of what is now NAS Alameda when the Navy began to show renewed interest in the site. In fact, the water tower was reused during the construction of NAS Alameda and only demolished within the past decade.

Navy Acquires Alameda Point
Perhaps spurred on by interagency rivalry, in 1935, the Navy met with Alameda officials to inquire about the possibility of acquiring 1,000 acres of land near Alameda Point for a naval installation. In June 1936, Congress passed Public Resolution Number 19 authorizing President Franklin D. Roosevelt to accept the 929.34-acre Alameda Municipal Airport from the City of Alameda. A year later, on October 7, 1936, the Navy officially acquired the 1,075-acre Benton Airfield (including submerged lands) from the Army, bringing the total area of the proposed naval base to a little more than 2,000 acres.32

31 History of U.S. Naval Air Station Alameda, California (San Bruno, California: Manuscript at the Pacific Branch of the National Archives, January 9, 1945), p. 4.
32 Ibid., p. 4.
Plans Drawn
The original peacetime plans for NAS Alameda called for a 1,000-man, 200-aircraft facility costing $13,500,000. In 1937, Congress appropriated $15,000,000 to build the base, although the project was delayed for some time due to the need to allow Pan Am to vacate Alameda Municipal Airport and the Army to decommission Benton Airfield. The new naval air station was designed by the Navy’s Bureau of Yards & Docks, Department of Planning and Design. The Bureau was under the leadership of Navy Captain Ben Morell, who was in charge of developing naval installations throughout the nation during the prewar buildup of the late 1930s. The officers of the Department of Planning and Design were usually drawn from the Civil Engineers Corps, although the majority of the staff were civilian architects, engineers and planners under the direction of Capt. Thomas Trexel, Chief Architect in the Bureau’s Washington, D.C. office.

Dredging and Filling Commences
On February 10, 1938, Commander E.C. Seibert arrived in Alameda to assume his duties as Officer-in-Charge of Construction, administering the work from a small shack in the center of the base. Seibert awarded lump-sum contracts to twenty-five companies totaling $12,200,000, including contracts for demolition, dredging and construction. The first task was to demolish the majority of the extant structures within the base boundaries. Former occupants and owners were given an opportunity to remove existing improvements before contractors moved in to demolish the remaining buildings and remove submerged pilings and foundations. Next, the land was scarified in anticipation of it being filled and graded. The removal of submerged construction debris was especially critical, in order to ensure the even distribution of fill and eliminate obstructions to future construction. A stone rip-rap seawall was built to exclude bay water from submerged and partially submerged areas. Dredging then commenced, with silt removed from the future sites of the ship channel, turning basin and seaplane lagoon. The dredged materials were then deposited on top of the marshlands and tidal flats within the seawall by means of large pressurized tubes. Millions of cubic yards of silt were spread on top of the mud, gradually creating “dry” land (Figure 9). Filling was held up briefly in 1938 when the dredging crew encountered an old trestle pier and ferry slip, remains of Cohen’s Wharf. The debris, including pilings, iron railings, locomotive wheels, coupling links and a pile of sandstone cobbles, were all located on the site of what is now Pier 2.
Figure 9. Filling underway at NAS Alameda, 1940.
Courtesy of National Archives Pacific Region, San Bruno

Figure 10. Building 5 under construction, April 1940.
Courtesy of the National Archives Pacific Region, San Bruno
Construction Begins
After dredging and filling were completed, contractors installed underground utilities and constructed the following buildings in order: Building 90 (Garage), Building 1 (Administration Building), Building 2 (Bachelor Enlisted Men’s Quarters), Building 3 (Mess Hall), Building 18 (Post Office/Theater), Building 6 (Public Works Garage and Firehouse), Building 5 (Assembly and Repair Shop), Building 10 (Power Plant), Building 8 (General Storehouse), Building 9 (Aircraft Storehouse), Building 13 (Paint and Oil Storage), Building 14 (Engine Test Stands), Buildings 11 and 12 (Seaplane Hangars), Buildings 20, 21, 22 and 23 (Land Plane Hangars), Building 19 (Operations Building), Building 15 (Boathouse), Building 17 (Bachelor Officers’ Quarters) and ten Married Officers’ Quarters. The first building completed, Building 90, was built in 1938 as a garage. This building has been moved several times and is currently located near the East Gate, where it was most recently used as the Civilian Employment Office. In November 1938, Building 1, the Administration Building, had been completed and was ready for occupation. By 1940 the main base buildings were well underway, including the massive hangars on the north side of Seaplane Lagoon (Figure 10).38

War in Europe
By the end of 1939, construction of NAS Alameda was progressing steadily under the supervision of Commander Harold J. Brow, USN, the first commander of NAS Alameda. Meanwhile, anxiety was steadily growing over the aggression of Nazi Germany in Eastern and Central Europe and Imperial Japan in Asia. By the end of 1938, Germany had annexed the Sudetenland region of Czechoslovakia and all of Austria and Adolf Hitler was showing few signs of being satisfied. Meanwhile, Japan was embroiled in a bitter war to conquer China. On September 1, 1939, German forces invaded Poland and two days later Britain and France declared war on Germany. The Second World War had begun. Although there were many in the United States who advocated remaining neutral, most Americans realized the likelihood of American participation in the War was high.

Rearmament
Realizing that American involvement in the War was ultimately inevitable, President Franklin D. Roosevelt signed the Hepburn Base Program Act on April 4, 1939. The act authorized the construction of additional naval bases throughout the United States and its possessions. At this time, Navy enlistment stood at 110,000 personnel with an additional 18,000 men in the Marines. Despite having won a medal from the Association of Federal Architects at the Seventh Annual Architectural Exhibition as an “outstanding example of functional planning,” NAS Alameda was clearly inadequate to accommodate additional personnel and equipment necessitated by pre-war buildup.39 In 1940, Captain Frank R. McCrary, USN, was appointed Commanding Officer of NAS Alameda and in July of that year, the Navy decided to dramatically enlarge the base from 1,000 to 4,000 men. Congress approved an emergency appropriation of $17,000,000 and Drake & Piper Construction Company was contracted to carry out the work.40

38 Ibid., pp. 5-6.
39 Ibid., p. 5.
40 Ibid., p. 8.
Landscaping
In addition to expanding the physical plant of NAS Alameda, Navy architects and engineers were faced with problems involving chronic soil slippage and blowing sand. In 1939, the Navy entered into an agreement with the organizers of the then-underway Golden Gate International Exposition (GGIE) to transplant grass and shrubs from the fair site on nearby Treasure Island to NAS Alameda after the fair closed in September. The State Forestry Division also stepped in, contributing shrubs and trees to the landscaped mall between the Main Gate and the Administration Building. When the mall was complete, it was promptly nicknamed the “The Magic Carpet” due to the effect created by the tapestry of flower beds and other decorative plantings (Figure 11). To reduce the impacts of storm-induced erosion, the Navy also scuttled and sank several World War I-era destroyers south of Seaplane Lagoon to serve as a breakwater.

Figure 11. View from north of the central Mall at NAS Alameda, 1950. Courtesy of the National Archives Pacific Region, San Bruno

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41 Ibid, p. 12.
NAS Alameda Opens
On November 1, 1940, NAS Alameda was formally commissioned. The brief ceremony was attended by Rear Admiral A.J. Hepburn, USN, Commandant of the Twelfth Naval District and members of his staff; officers attached to NAS Alameda; officials representing the cities of Alameda, Oakland and San Francisco; newspaper reporters; and approximately 390 sailors and marines. The flag-raising ceremony took place at the flagpole installed three days earlier in front of the Administration Building. The United States flag required for the ceremony had to be procured at the last minute from Mare Island Naval Shipyard in Vallejo.42

The opening of NAS Alameda was a boon for the nearby communities of Alameda, Oakland and San Francisco, which were all still suffering from the residual effects of the Depression. The February 27, 1941 special edition of the Alameda Times-Star projected that NAS Alameda would eventually employ close to 800 Alamedans. This figure ended up being much larger; by the end of the War, the Assembly & Repair Department alone would employ close to 9,000 civilians. The Oakland Tribune heralded the arrival of the first seven of the projected 200 planes that would be based at the station and described how they would be housed in the “largest hangars in the world.” One of the articles discussed the trade schools built to train civilians and enlisted men in airplane mechanics, instrumentation, metal fabrication and drafting. In July 1941, demand for trained personnel led to the opening of several “Class A” trade schools at Alameda Point, including the Aviation Metalsmiths’ School, the Aviation Machinists Mates’ School and the Aviation Radiomen’s School.43

Prior to the Japanese attacks on Pearl Harbor, most of the 400-odd civilian employees of NAS Alameda arrived at work in their own private automobiles, most of which were parked in a lot by the Main Gate. After Pearl Harbor, gasoline rationing and rubber shortages compelled employees to take public transportation to work, mostly on Key System buses running between downtown Alameda and the Main Gate. Workers from San Francisco and Oakland could also take water taxis from Jack London Square in Oakland to NAS Alameda.44

Pearl Harbor
Despite the hectic construction activity, NAS Alameda was nowhere near completion when carrier-based Japanese bombers and fighters attacked Pearl Harbor and other U.S. possessions on December 7, 1941. The attacks panicked West Coast residents and put the military on alert. Bombers were expected over San Francisco and other West Coast cities in the months that followed Pearl Harbor. The shelling of an oil refinery outside of Santa Barbara by a Japanese submarine in February 1942 only elevated fears. After Pearl Harbor, all personnel stationed at NAS Alameda were commanded to immediately report for duty. Hasty preparations were undertaken to protect the base, including the installation of anti-aircraft guns, fire watch stations, fire hydrants and earthworks around important buildings. All access roads were closed off and protected by security checkpoints with orders issued to shoot to kill any intruders.45 Meanwhile, construction continued into 1942 and the base was completed as originally designed by the end of the year (Figure 12).

NAS Alameda During Wartime
The primary mission of NAS Alameda during the Second World War was to supply the ships and stations of the Pacific Fleet and to “Keep ’em flying”; in other words, repair damaged aircraft. Most of this work was carried out by the Assembly & Repair Department in Building 5. By 1945, this department employed 9,000 people, many of them women. Building 5 underwent continual expansion to accommodate more aircraft, growing from 204,000 square feet in 1941 to over one million square feet by 1945. Eventually, Building 5 and its neighbors accommodated nine divisions: Aircraft Overhaul, Engine Overhaul, Accessories, Metal and

42Ibid., p. 9.
43 Ibid., p. 10.
44 Ibid., p. 12.
Machines, Radio-Radar, Engineering, Planning, Maintenance and Personnel. At its peak year in 1945, Assembly & Repair overhauled 842 aircraft and 2,027 engines.46

NAS Alameda also served as the primary supply base for Naval installations throughout the Pacific Theater. After the bombing of Pearl Harbor, Pacific Island bases were activated at Midway, Wake, Johnston and Palmyra Islands. Located on remote islands, these bases had to be supplied with nearly everything, including food, water, weapons, materiel and men. NAS Alameda also served several outlying installations in California, including Navy airfields at Crows Landing, Santa Rosa, Hollister, Monterey, Watsonville and Eureka, as well as a Coast Guard station in San Francisco. NAS Alameda was also the home port for several aircraft carriers.47

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**Figure 12. Aerial view of NAS Alameda, June 1942.**
*Courtesy of the National Archives Pacific Region, San Bruno*

**Labor Shortages**

With all of the work going on at NAS Alameda, the demand for skilled labor grew to an insatiable level. During the Second World War, the city of Alameda became an unofficial Navy company town, more than doubling in population from 30,000 people in 1941 to over 85,000 people by 1945. Workers came from all over the United States to work at NAS Alameda and in other war industries ringing San Francisco Bay, especially shipyards and military installations. After the institution of the mandatory draft sent working-age men off to war, women became a critical part of the workforce at NAS Alameda. These women civilian workers, immortalized by the famous image of “Rosie the Riveter,” joined forces with enlisted female military personnel called “WAVES” (Women Accepted for Voluntary Emergency Service).48

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46 Ibid, p. 5.
47 Ibid.
48 Ibid, p. 5.
Wartime Events at NAS Alameda

One of the most important events to take place at NAS Alameda during the Second World War was the departure of the USS Hornet with Alameda native Lieutenant Colonel James Doolittle’s force of eighteen B-25 bombers in April 1942. “Doolittle’s Raiders,” as they were called, bombed Tokyo and three other Japanese cities on April 18, 1942. American morale was at its lowest ebb, and the raids, although of little tactical benefit, proved to the American (and Japanese) public that the Japanese homeland was not invulnerable. Another noteworthy event took place in January 1944 when Army pilot 2nd Lieutenant Harry Pape of Sacramento bailed out of his P-39 seconds before it crashed within feet of Building 5. The pilot was uninjured, but several workers in Building 5 were wounded by flying debris.49

World War II Ends

By VJ Day in 1945, NAS Alameda barely resembled the small 500-man base that had existed before Pearl Harbor. Under the capable leadership of Captain Walter F. Boone, NAS Alameda had expanded over the course of the War to accommodate twenty-two squadrons of aircraft, twenty-three ships, 1,500 aircraft and 158 buildings. In order to accommodate all of this growth, in 1944, the Navy Bureau of Yards & Docks began to construct hundreds of temporary wood-frame and corrugated metal barracks, office buildings and machine shops throughout the base. Building 5, the home of the Assembly & Repair Department, was vastly enlarged to accommodate the large numbers of aircraft damaged in battle or those merely in need of overhaul. Large temporary wood-frame warehouses, such as Buildings 91 and 92, were erected in the Shops Area to house supplies awaiting shipment to the Pacific Theater. To accommodate the increasing size of aircraft carriers, the Navy awarded a million-dollar contract to Basalt Rock Company of Napa to build a mile-and-a-quarter-long breakwatersouth of the three carrier piers.50

Postwar Years: 1946-1950

The cessation of hostilities with Japan occurred on August 14, 1945 and demobilization took place with astounding speed. Charged with shipping men and materiel out to the Pacific Theater throughout the War, NAS Alameda was now responsible for bringing them home safely. Wartime personnel levels were cut in half by April 1946 and to one-third by June. By August 1946, NAS Alameda only had 187 officers and 1,792 enlisted personnel. Ships were decommissioned, planes mothballed and machinery and scrap melted down into ingots. Nevertheless, NAS Alameda would continue to play a role in the postwar Navy. Having invested over seven hundred million dollars in the construction and expansion of NAS Alameda, the Navy intended that the station would become one of three permanent stations of the Twelfth Naval District. In the immediate postwar period, NAS Alameda served as a supply depot for food, equipment and personnel sent to Occupied Japan. NAS Alameda was also home port to the Pacific Reserve Fleet and the aircraft carriers Hancock, Ranger and Enterprise. The giant Mars seaplanes used to ferry equipment and supplies to Pacific bases during the War were either mothballed or converted for use on rescue missions. By 1948, NAS Alameda was said to be “resting on its oars.”51

Despite its reduced mission following the Second World War, aircraft overhaul work did not cease at NAS Alameda. After the War, a major amount of work went into converting the station from a facility catering to propeller-driven aircraft to one focused on jet propulsion. The Assembly & Repair Department (renamed Overhaul & Repair in 1948) continued to operate out of Building 5, which was radically altered and enlarged to accommodate jet aircraft and the 5,400 civilian workers who worked on them.52 New engine test cells and other

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49 Ibid.
50 History of U.S. Naval Air Station Alameda, California (San Bruno, California: manuscript at the Pacific Branch of the National Archives, January 9, 1945), p. 5.
52 Ibid., p. 8.
new structures were built in the southeastern part of the station and many World War II-era temporary buildings were demolished.

**Korean War to Vietnam**

On June 25, 1950, Chinese and Soviet-backed North Korean troops invaded South Korea, launching the Korean War. On June 27, President Harry Truman ordered U.S. air and sea forces to give the Korean government troops cover, and on June 30, he authorized American ground troops to take part in the fighting. On July 3, 1950, NAS Alameda-based Carrier Division 3 became the first to launch air strikes against North Korean troops. Marines stationed at NAS Alameda were also some of the first American troops to see combat on the Korean Peninsula. Given its new mission in Asia, the Navy embarked on a major expansion of NAS Alameda. An additional 1,000 civilian workers were hired; reservists were called up; ships re-commissioned; aircraft de-mothballed; and the two runways were lengthened from 5,200’ to 7,200’. In total, forty-six million dollars were expended on improvements to NAS Alameda. After the Korean War ended on July 27, 1953, NAS Alameda experienced a slight slowdown in operations, although nothing equivalent to what happened after the conclusion of the Second World War. The Cold War kept the U.S. military on its toes and NAS Alameda remained active.

By 1958, NAS Alameda had a station population of 13,200, of which 4,800 were military personnel and 8,400 civilian workers. The base itself was comprised of 2,079 acres of land: 1,607 acres of dry land and 1,072 acres of submerged land. There were approximately 283 buildings and over thirty miles of roads. During this period, NAS Alameda was home port to the largest aircraft carrier in the world, the *USS Ranger*, one of the newest generation of Forrestal-class carriers, which were 1,000’ long and weighed 76,000 tons. By 1962, NAS Alameda had three 8,000’ runways, four large aircraft carriers—*USS Hancock*, *Ranger*, *Coral Sea* and *Midway*—three seaplane ramps, 1,920,000 square feet of shop area, 2,858,000 square feet of storage area and 280 buildings. The total size of the base in 1962 was 2,720 acres, including 1,612 acres of dry land and 1,108 acres of submerged land.

In 1960, the last seaplane squadron was transferred from NAS Alameda to NAS Whidbey Island, marking the end of an era. In July 1961, NAS Lemoore opened in the San Joaquin Valley and most of the carrier-based jet squadrons moved to the new station or to NAS Miramar, near San Diego. This was done to reduce the congestion and noise of jet training in the increasingly urban Bay Area.

In September 1960, a mission of another kind came to NAS Alameda when the Oakland Raiders, a newly formed American Football League team, made the station their practice grounds. Coached by former Naval Academy head coach Eddie Erdalatz, the scrappy Raiders attracted the attention of naval personnel and civilian workers on their lunch breaks.

**Vietnam**

In 1966, NAS Alameda again became homeport to the world’s largest aircraft carrier, this time the *USS Enterprise*, which was the first nuclear-powered aircraft carrier. Events in Southeast Asia kept the ship and its personnel away from NAS Alameda for months at a time during the 1960s. As with the World War II and the Korean War, Alameda was significantly involved with the Vietnam War. After Viet Cong troops attacked American and South Vietnamese troops in South Vietnam on February 7, 1965, aircraft from the Alameda-based carriers *USS Ranger*, *Hancock* and *Coral Sea* launched strikes against North Vietnamese positions in Dong Hoi. During the rest of the 1960s, half of the attack carriers involved in Vietnam were

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53 Ibid., p. 9.
55 v, p. 8.
57 Ibid., p. 17.
home-ported at NAS Alameda. In 1967, the airfield at NAS Alameda was renamed “Nimitz Field” in honor of Admiral Chester W. Nimitz, the man credited with winning America’s sea war with Japan. Also in 1967, the Overhaul & Repair Department of NAS Alameda ceased to exist, replaced with another similarly charged organization called the Naval Air Rework Facility, or “NARF” (Figure 13). The Vietnam War continued for another six years until a cease-fire was signed on February 5, 1973, ushering in a period of peace, budget cuts and personnel reductions at NAS Alameda. By 1980, only two carriers were home-ported at NAS Alameda, USS Coral Sea and Enterprise.58

**Post-Vietnam to BRAC**

Faced with changing priorities and political sensibilities in the 1970s, the Navy introduced new programs emphasizing psychological and physical well-being and improved race relations, as well as several new recreational buildings. The demographic character of the workforce began to change as World War II-era workers retired, many to be replaced by ethnic minorities and women. Leaders of the environmental movement also began to place expectations on the Navy to improve its record of environmental responsibility at NAS Alameda. During the 1970s and 1980s, the Navy spent substantially more resources to mitigate hazards caused by spilled jet fuel and oil.

Despite the Reagan-era military buildup of the 1980s, Secretary of Defense Caspar Weinberger suggested in 1985 that NAS Alameda be added to a list of twenty-two bases proposed for closure, partially due to declining productivity and morale in the NARF department (later renamed Naval Aviation Depot, Alameda, or NADEP). Nevertheless, productivity dramatically improved after the base made improvements to the station and gave pep talks to the employees, and as a result, NAS Alameda was taken off the list for closure.59 On October 17, 1989, the San Francisco Bay Area was hit by the 7.1 Loma Prieta Earthquake. The earthquake heavily damaged runways, partially destroyed the control tower and disrupted utilities. Nevertheless, within days, NAS Alameda was back in service and providing assistance to earthquake victims throughout the Bay Area.

**Base Realignment and Closure**

The “Peace Dividend” resulting from the end of the Cold War put pressure on the branches of the military to cut costs and close redundant installations. In 1990, Defense Secretary Dick Cheney suggested closing all Navy facilities in the San Francisco area. After a brief respite during the First Persian Gulf War, the Base Realignment and Closure Commission (BRAC) began the work of determining which bases should be closed. NAS Alameda narrowly escaped the first cut in 1991. Many believed that Alameda’s high level of productivity would cause the station to be spared, but on March 12, 1993, to the shock of base personnel and thousands of Alamedans who worked at the base, NAS Alameda was included in the next list of thirty-one bases designated for decommissioning.

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58 Ibid., pp. 17-19.
59 Ibid., p. 21.
At the time that NAS Alameda was designated for closure, the station was comprised of 2,842 acres of land, including 1,527 acres of dry land and 1,315 acres of submerged land; 251 buildings; 195 structures; and two runways measuring 8,000' and 7,200' long. Total employment consisted of 2,861 military personnel and 4,025 civilians. Home-ported ships included two carriers, the USS Abraham Lincoln and Carl Vinson; one missile cruiser, the USS Arkansas; and one destroyer tender, the USS Samuel Gompers. In addition, NAS Alameda was home to four Naval Air Reserve squadrons and one Marine Air Group. In 1997, NAS Alameda finally closed its gates, fifty-seven years after opening.

60 NAS Alameda Fact Sheet, October 20, 1993.
V. DESCRIPTION OF NAS ALAMEDA HISTORIC DISTRICT

Boundaries
NAS Alameda Historic District encompasses an area of approximately 350 acres at the center of the former military base. The historic district is bounded by Main Street and Oakland Inner Harbor to the north, 1960s-era multi-family housing to the east, mixed-use industrial buildings and warehouses to the southeast, Seaplane Lagoon to the south, and Nimitz Field to the west (Figure 2).

Figure 14. Main Gatehouse and Sentry House (Buildings 30 and 31), NAS Alameda, 2004.

Significance
Architectural Historian Sally Woodbridge, author of the 1992 Historic Architectural Resources Inventory for the Naval Air Station, Alameda, identified a potential historic district at the center of NAS Alameda that appeared to be eligible for National Register listing under Criteria A (Events) and C (Architecture), with a period of significance of 1938-1945. Under Criterion A, the district appears to be significant as an important component in the evolution of the Bay Area as America’s “Arsenal of Democracy” during the Second World War. The district also appears to be eligible for listing under Criterion C as a military installation embodying the characteristics of “Total Base Design,” as well as a rare example of a military installation designed in the Streamline Moderne style (Figure 14). Military bases built during the Interwar Period (1919-38) and during the early years of the Second World War (1939-42), typically embody the characteristics of Total Base Design, defined as the careful integration of site planning, architectural program and landscape architecture. Influenced by municipal zoning ordinances adopted during the 1910s and 1920s, bases designed during this era usually display a pronounced segregation of uses for functional, aesthetic and safety reasons. Bases constructed according to the precepts of Total Base Design also often embody City Beautiful planning and design principles, particularly cross-axial patterns of circulation, large landscaped malls terminating at important visual monuments or vistas, and symmetrical disposition of buildings. Sally Woodbridge’s Historic Architectural Resources Inventory identified eighty-five contributing resources and thirty-one non-contributing resources in the Historic District.61

Character-Defining Features

Site Plan
The original site plan for NAS Alameda is a logical arrangement composed around two primary cross axes centrally placed in a roughly square framework of roadways (Figure 15). Sprawling across over 350 acres of mostly level, filled land, the Historic District is bounded by streets and open water to the north and south, later multi-family construction to the east, industrial uses to the southeast and Nimitz Field to the west. The original

61 Page & Turnbull has identified eighty-six contributors and fifty-five non-contributors within the boundaries of the NAS Alameda Historic District (Refer to Appendix E). Since Woodbridge’s inventory, the number of contributors was revised to 87 (acknowledged in a letter from the Office of Historic Preservation dated Nov. 5, 1997) and one building (Building 101) was destroyed by fire, reducing the number of contributors to eighty-six.
award-winning design of NAS Alameda was executed by the Bureau of Yards & Docks, Department of Planning and Design, an agency that employed talented civilian planners, architects and engineers who were well-versed in the important planning trends of the time. One of the most obvious influences in the base's design is the City Beautiful Movement. Inspired by Daniel H. Burnham and Frederick Law Olmsted's design for the World's Columbian Exposition in Chicago in 1893, City Beautiful urban planning was characterized by symmetrical arrangements of buildings along landscaped axes terminated by important monuments or vistas, Beaux-Arts architectural vocabulary and unified landscape treatments. The City Beautiful Movement was reinterpreted in cities across the United States and its colonies, including Washington, D.C. (1901), Manila (1904), San Francisco (1905), Chicago (1909), Denver (1910) and others. Obsessed with resolving the chaotic conditions so characteristic of young and rapidly growing American cities, the City Beautiful Movement sought to appropriate the best elements of European Renaissance and Baroque planning traditions to imprint a uniquely American identity to our civic centers, educational campuses and federal institutions.

Figure 15. 1940 plan of NAS Alameda.
Courtesy of Department of the Navy, NAS Alameda Plan Room
Between the First and Second World Wars, U.S. military leaders became increasingly committed to the orderly aesthetic of the City Beautiful Movement for base design. Mere aesthetics aside, the military’s interest in City Beautiful planning principles was a culmination of a long history of logical and efficient base planning going back as far as the Roman castrum. U.S. military installations designed between the wars typically employed a strong axial plan (often centered around a landscaped mall), and a cohesive architectural vocabulary (usually referencing the local regional architectural tradition), which were set within a unified landscape. These bases follow what has been termed as “Total Base Design,” meaning that architecture, site planning and landscape architecture are integrated, informing a whole, highly organized design.62

Good examples of this system include March Airforce Base in Riverside; Hamilton Field in Novato; the Naval Training Center in San Diego; and NAS Sunnyvale (renamed Moffett Field) (Figure 16). Unlike NAS Alameda, these four bases adhere to the popular Mission Revival or Spanish Colonial Revival architectural styles.63 However, these bases share in common with NAS Alameda an expansive central mall. At Moffet Field, the mall serves as the heart of the base, connecting the main entry with the central administration buildings, ultimately terminating at the signature icon and raison d’etre of the base: the dirigible hangar. In the case of NAS Alameda, the landscaped north-south axis terminates at the Seaplane Hangars and the Seaplane Lagoon, while the east-west axis terminates at the Landplane Hangars, and beyond that, the San Francisco skyline. This progression along the central axis gives hierarchy to the plan, leading from the entry point to the impressive buildings that most directly serve the base mission.

The Woodbridge inventory specifically identifies the central open spaces and the street system as character-defining features of the Historic District, and comments on its overall “continuity of style and a high degree of architectural integrity enhanced by the retention of landscaping and parklike open spaces.”64 The reference to the installation’s manifestation of Total Base Design is also recognized in the JRP Guidelines as being analogous to Gunther Barth’s “instant city” model, used by the author to describe the near instantaneous development of San Francisco and Denver during their respective Gold Rushes.65 The overarching continuity of the Historic District is emphasized in the Guidelines as embodying the following characteristic:

If there is one overriding character-defining element of the NAS Alameda Historic District, it is this uniformity of design features, elements, and materials. These buildings were designed as a group, an ensemble, and should, to the extent possible, be managed in the same manner.66

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63 These four bases are listed on the National Register of Historic Places as historic districts.
64 Sally Woodbridge, Historic Architectural Inventory for Naval Air Station (Alameda, 1992), p.3.
66 Ibid.
Axes
As described above, the principal cross axes that help to define the character of NAS Alameda are clearly indicated in the original plans prepared by the Bureau of Yards & Docks. The main north-south axis is a large landscaped mall historically known as the “Magic Carpet,” beginning at the Main Gatehouse (Building 30) and continuing south to the Administration Building (Building 1). Landscaped areas originally carried the main axis south to Building 6 and the Seaplane Lagoon beyond. As originally designed, the east-west axis separated the Administrative and Residential sub-areas from the Shops and Hangars sub-areas. However, after the bombing of Pearl Harbor, the formerly open east-west axis was sacrificed to wartime contingencies and filled with additions to the Assembly & Repair Shop (Building 5), and new training, maintenance and storage structures (including Buildings 114, 101, 73A and 73B). The primary north-south axis was retained along with a secondary east-west mall framed by the Bachelor’s Enlisted Quarters Buildings and the General Service Building (Buildings 2, 3 and 4). This secondary mall and the landscaped boulevard along Road H (currently W. Essex Road), which connects to the Residential Area of Officer’s Quarters, became the predominant east-west axis by the end of World War II (Figures 17-19).

Figure 17. Original plan axes
Figure 18. Master plan, ca. 1940
Figure 19. Built plan, ca. 1945

In addition to providing important vistas of significant monuments and landscapes beyond the base, the principal axes also serve as the primary circulation routes. Individual circulation elements, such as prominent entrance pavilions, arcaded passageways, paths and stairs, tend to relate to the principal axes. Some circulation elements, such as the covered pedestrian passageways connecting Buildings 2, 3, and 4, frame views of the Bay and downtown San Francisco in the distance. The axes are defined by rows of low-slung buildings, which serve not so much as continuous edges but as punctuation within a park-like setting. The most significant landscape treatments are encountered along the north-south and east-west malls, with some extending into other sub-areas like tendrils of green open space, especially a landscaped boulevard that originally existed along W. Essex Street. The malls are punctuated periodically by important structures and monuments, such as the main...
flagpole at the southern end of the north-south mall, directly across from the main entrance to the Administration Building.

View Corridors
As discussed above, the two principal malls serve as important view corridors, providing vistas or glimpses of primary features of the base plan (Figure 20). The corridors focus attention on symbolically and architecturally significant structures. The main north-south mall begins north at the Gatehouse (Building 30) and terminates at the Administration Building (Building 1) at the south. Visitors standing at any point along the mall enjoy dramatic views of both buildings at either end of the mall. The buildings lining the mall defer to the Administration Building, although their design is compatible. Landscaping, in particular mature Monterey Cypress trees, also direct the attention of the visitor to the Administration Building with the flagpole in front of it. In this way, planning, architecture and landscape architecture work in concert to direct strangers to the central nerve center of the base, as well as promote public interaction with the elements that embody the highest degree of architectural interest.

Although not a landscape in the traditional sense, significant view corridors are afforded along and in-between the rows of massive Seaplane Hangars at the southern edge, and the somewhat smaller Landplane Hangars along the western edge of the district. The repetition of identical, 60-foot-tall volumes creates strong streetscapes when viewed along Monarch Street and West Tower Avenue. These two vistas, as well as the views between the hangar buildings, are mentioned in the JRP Guidelines as some of the most important character-defining elements of NAS Alameda. Taken in conjunction with glimpses of downtown San Francisco in the distance, these views are some of the most impressive on the base.

Sub-Areas
Five sub-areas within NAS Alameda were identified in the JRP Guidelines as possessing distinctive characteristics. Reflecting the segregation of usage that is so characteristic of the base, these sub-areas are coterminous with function: the Administrative Core, the Shops Area, the Residential Area, and the Seaplane and Landplane Hangars Areas. (Figure 21). The purposeful arrangement of functions, or zoning as it came to be known in the early 20th century, is indicative of the Total Base Design practice and the City Beautiful Movement, from which it derived in part. The functional segregation of different, mutually incompatible
uses fulfills the practical purpose of grouping similar activities together in one area, making work more efficient. It was also safer, in important consideration in an area containing large stores of explosive materials. Finally, the practice of zoning allowed for a better opportunity to shape the aesthetic character of the base as a coherent entity.

To that end, each sub-area of NAS Alameda is unique and distinguished from other sub-areas by different building massing, architectural treatment and landscaping. As the center of command and ceremonial nucleus of the base, the Administrative Core is located at the heart of the base. The most architecturally significant buildings are located here, including Buildings 1, 2, 3, 4, 16, 17 and 18. These buildings are symmetrically arranged on either side of broad, intersecting landscaped malls. The buildings are consistently two to three stories in height and have stepped massing, often consisting of a central pavilion flanked by two one-story wings (Figure 22).

The Residential Area is located just east of the Administrative Core. Nestled into a landscaped area of lawns and mature street trees in the northeast corner of the base, the Residential Area is segregated from through-traffic by a network of curvilinear streets that do not connect to major through-streets. The Residential Area is comprised of two separate clusters of family housing: relatively large, hip-roofed, single-family houses intended for officers; and a secondary cluster of less-elaborate, small, flat-roofed bungalows intended for non-commissioned officers. Although quite different, reflecting discrepancies in rank, the scale and detailing of the architecture in the Residential Area is decidedly smaller and more “domestic” in nature than any of the other four sub-areas (Figure 23).

The Shops Area is sandwiched between the Administrative Core to the north, the Seaplane Hangars Area to the south, and the Landplane Hangars to the west. The Shops Area contains the largest and the most utilitarian buildings of any of the five sub-areas. Although quite large, the buildings of the Shops Area are effectively screened from view from the Administrative and Residential Areas by landscaping and relatively horizontal massing, the notable exception being Building 5, which looms over much of the central portion of the Historic District. The Shops Area is also the most heterogeneous of the five sub-areas, running the gamut from utilitarian wood-frame, “semi-permanent” warehouses like Buildings 91, 92 and 114, to more elaborate Streamline Moderne structures, such as Building 6.
Similar to the structures of the Shops Area, the buildings of the two Hangars Areas are designed in a utilitarian mode. However, the hangars are substantially different from the Shops Area by virtue of their cohesive design (apparently by Detroit architect Albert Kahn) and repetitive arrangement in rows along the south and west sides of the Historic District. Visible from much of the inner Bay Area, the massive hangars visually summarize in an iconic fashion the mission of NAS Alameda. Built in proximity to the Seaplane Lagoon and Nimitz Airfield, the hangars define the edges of the runways and taxiways that dominate much of the base. The only building in the Hangars Areas that departs from the overall utilitarian character of the sub-area is Building 77, the Passenger Terminal. Built somewhat later than the hangars, Building 77 conforms to the Streamline Moderne aesthetic of the Administrative Core. Although not landscape features in the traditional sense, the tarmac taxiways alongside the bay side of both rows of hangars create important open spaces that serve as transitional zones between the Historic District, Nimitz Field and the Seaplane Lagoon (Figure 24).

Architecture: Streamline Moderne
NAS Alameda is a rare example of a military base with significant portions designed in the Streamline Moderne style. Derived in part from European High Modernism and the contemporary work of American industrial designers, the Streamline Moderne style began to develop in the United States during the late 1920s and early 1930s, with the now-famous PSFS Building in Philadelphia (1929) and the McGraw-Hill Building in New York (1931). The basis of the style can be traced in large part back to American transportation designers like Raymond Loewy, who tested their designs in wind-tunnels and fluid tanks to produce aerodynamically advanced designs for train engines, automobiles, airplanes and ships that enhanced forward motion by reducing wind or water resistance. Industrial designers discovered that refrigerators, toasters, and pencil boxes with the same curves and wind lines appealed to consumers over earlier boxy models. Shoppers were even willing to pay more, maybe because these “modernistic” gadgets seemed futuristic in the same way the era’s science-fiction films and comic books painted a future technologically freed of all problems. Buildings designed in the Streamline Moderne style referenced this fascination with speed and efficiency by exhibiting curved corners, ship rails, and porthole windows. The buildings also featured modern-age materials such as chrome-plated steel interior trim, magnesite flooring and ribbon windows.
featuring aluminum sash or glass-block. More accessible to the public than the rarefied European Modernism of the 1920s, the Streamline Moderne style conveyed notions of speed, efficiency, cleanliness and a progressive vision of the future.

In the years leading up to the Second World War, the Navy began to build new bases under the provisions of the Hepburn Act. A handful of these new bases departed from the historicist and regional vocabularies typically used by the Navy and embraced a more modern design aesthetic influenced by the contemporary Art Deco and Streamline Moderne movements. Alternately called “Striped” or “Starved Classicism,” or “Works Progress Administration Moderne,” the modern styling developed by the Navy’s Bureau of Yards & Docks was generally more conservative than civilian works of the same era. Due in part to the fact that the military relied on standardized plans, Navy buildings constructed during the late 1930s continued to retain strict axial plans and symmetrical facades dominated by colonnades or porticos. However, instead of using traditional Neoclassical architectural detailing, the “new” modern buildings incorporated simple, stylized decorative details and massing typical of the Streamline Moderne style. Characteristics of the style evident at NAS Alameda include: smooth stucco walls, curved parapets, incised “speed lines,” stacked window elements, glass-block or horizontal ribbon windows, and stylized sculpture depicting traditional military motifs such as eagles, or in the case of the Navy, anchors or figures of Pegasus (Figures 25 & 26).

In California, the largest base designed wholly in the Streamline Moderne style is NAS Alameda. While other bases feature concentrated areas designed in the style, such as McClellan Air Force Base near Sacramento, or feature individual buildings, such as the Naval and Marine Corps Reserve Center in Los Angeles and the Naval Reserve Center in Santa Barbara, none retain such a large concentration of buildings designed in the Streamline Moderne style. While NAS Alameda features World War II-era temporary and semi-permanent buildings that are not compatible with the original base design, the majority of the Historic District contains buildings constructed between 1938 and 1941 in the Streamline Moderne style.

Landscape
The most important landscaped areas at NAS Alameda are the two intersecting malls at the center of the Administrative Core (Figure 27). Landscape materials consist of broad grassy areas segmented into smaller sections by paved paths. Decorative borders of box hedges, Monterey pine, Monterey cypress, red

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gum eucalyptus, bottle brush and other trees and shrubs typical of California, line important paths, borders or significant spaces, such as the area surrounding the flagpole in front of Building 1. Other significant areas of landscaping include the lawns and trees in the Residential Area, a large expanse of grass and athletic fields east of the Main Gate, three landscaped courtyards on three sides of Building 17 and a now-paved median in the center of Essex Drive. Some of the mature landscaping appears to have been either salvaged from the 1939 Golden Gate International Exposition or donated by the California Division of Forestry around the same time. Historic photographs taken of the base in the 1940s and 1950s indicate that the original landscaping in the Administrative Core was more formal, with ornamental parterres and shrub borders giving the north-south mall its historic nickname the “Magic Carpet.” These areas are now either paved or covered in grass.

**Contributing Buildings**

As the nerve center of the former base, and the area most often encountered by visitors, the Administrative Core is home to the most architecturally significant buildings at NAS Alameda. Many of the most important contributors to the Historic District are located here and most are designed in the Streamline Moderne style. The Administrative Core also contains a handful of World War II-era “semi-permanent” buildings constructed during wartime, such as Buildings 94 (Chapel), 130 (Medical Lab), 135 (Community Facilities) and 137 (Recreation Storage Facility). Contributors in the Administrative Core include Buildings 1 (Administration Building), 2 (Bachelor Enlisted Men’s Quarters), 3 (General Services/Commissary), 4 (Bachelor Enlisted Men’s Quarters), 16 (Medical Clinic), 17 (Bachelor Officers’ Quarters), 18 (Post Office and Theater), 30 (Main Gatehouse), 31 (Sentry House) and 94 (Chapel).

Most are low-slung buildings with smooth stucco walls, curved corners and parapets, pronounced entry blocks, aluminum ribbon windows, glass block accent windows, “speed lines,” colonnades with curved canopies, and occasional sculptural elements, including Pegasus figures on Buildings 2 and 4 and eagles on Building 3. Interior detailing is often quite fine, featuring terrazzo flooring, glass block and nickel-plated stair balustrades. (Figure 28)

Comprised of eighteen two-story Officers’ Quarters and thirty one-story Non-commissioned Officers’ Quarters, the Residential Area has a greater number of buildings than the other four sub-areas. However, unlike the other sub-areas, there are only two variants of contributing buildings in the Residential Area: the Married Officers’ Quarters, also known as the “Big Whites,” and the Non-Commissioned Officers’ Quarters (NCO Quarters). The Big Whites are located in the distinctive beehive shaped network of curvilinear streets in the northeastern corner of the Historic District. Set down in a landscaped park-like setting, the Big Whites are large, two-story, hip-roofed structures with projecting sun room and
garage wings. Based largely on standardized military plans, the Big Whites closely resemble the classic American “foursquare” house. Typically rendered in the Neoclassical style on military installations in other parts of the country, the design of the Officers’ Quarters at NAS Alameda was modified to blend in with the Streamline Moderne character of the base. Coated in smooth, white-painted stucco, the Big Whites feature distinctive Moderne elements, such as vertical bands of small rectangular windows and the absence of applied ornament. Instead, ornamental detailing is provided by geometric features, such as the circular openings punched into the portico canopy supports. The NCO Quarters, also based on standardized Navy plans, are much smaller and more utilitarian than the Officers’ Quarters. Located on both sides of Corpus Christi Road and along the south side of Pensacola Lane, the NCO Quarters feature shallow-pitched hipped roofs (which appear flat), recessed porches and broad roof overhangs. All buildings have double-hung wood windows and wood doors. Few alterations have taken place over time to either the buildings or to the landscaping, resulting in a high level of integrity in the Residential Area.

Sandwiched between the Hangars Areas and the Administrative Core, the Shops Area is a support zone for the Hangars. As utilitarian buildings used primarily for machining aircraft parts or storing goods intended for shipment overseas, the buildings of the Shops Area received comparatively little attention in regard to their appearance. The Shops Area has also undergone more ad hoc alterations than any other sub-area. During the Second World War, the area was subjected to massive new construction projects that infilled the formerly open east-west axis and added large additions to Building 5 (Repair and Assembly Shop). Contributing buildings in the Shops Area includes Buildings 6 (Public Works Garage and Firehouse), 8 (General Storehouse), 9 (Aircraft Storehouse), 42 (Fuel Chemical Lab and Office), 43 (Weapons Building), 44 (unknown), 91 (Shipping Storehouse), 92 (Packing/Shipping), 102 (Ordnance Building) and 114 (Machine Shop). Six of these structures (Buildings 6, 8, 9, 42, 43, and 44) are concrete or steel-framed permanent buildings that were part of the original 1938 plan. The rest are semi-permanent wood-frame structures that were not part of the original plan but were built to serve for the duration of the Second World War. On axis with the north-south mall, Building 6 shares architectural design elements in common with the buildings of the Administrative Core. Unique in the Shops Area, Building 9 is a steel-frame warehouse that resembles the nearby hangars in its construction and appearance. Buildings 8 and 9 are massive concrete structures with sparse ornamentation (Figure 30). Buildings 91, 92, 102 and 114 are semi-permanent wood-frame buildings with flat or gable roofs, rustic channel siding and no ornamentation. Steel or wood industrial sash and sliding or hinged doors are nearly...
universal in the Shops Area.

Despite their functional purpose, the two rows of massive identical hangars along the southern and western boundaries of the Historic District comprise an indispensable character-defining feature of NAS Alameda. Although otherwise purely functional buildings, the hangars incorporate elements of the Streamline Moderne style, in particular in the stepped massing of their stucco exteriors. Contributors within the Hangars Area include Hangars 20, 21, 22, 23, 39, 40, 41 and Building 77 (Passenger Terminal). All of the hangars are large, steel-framed buildings with massive concrete bulkhead foundations; the hangars are based on standardized plans developed by Detroit architect Albert Kahn (Figure 31). Additional character-defining features include large telescoping doors, the stepped massing of the corner pylons (which serve as door pockets), monitor roofs, open central workspaces bridged over by rows of steel trusses and steel industrial windows. The only building that departs from this function and aesthetic is Building 77. Constructed to serve as a passenger terminal, Building 77 is designed in a mode similar to the buildings of the Administrative Core.

VI. HISTORIC PRESERVATION STRATEGY

Purpose
The Naval Air Station Alameda Historic District is facing a critical transformation as ownership is transferred from the Navy to the City of Alameda. Over the past year, from 2004 to 2005, the City has created the Preliminary Development Concept (PDC) outlining a plan to integrate NAS Alameda with the remainder of the island city, by adding residential and commercial uses in existing structures and newly constructed buildings. The PDC has undertaken a study of a host of constraints affecting property development, including economic feasibility, environmental contamination, the 100-year flood plain, young bay mud, a wildlife refuge buffer, Tidelands Trust, Alameda housing policies, traffic impacts, timing and phasing of transfer from the Navy, and historic preservation. In this context, it is important that a historic preservation plan be put in place to outline the goals, standards, process and policies required to ensure the appropriate level of protection and enhancement of the historic resource. This section is intended to provide a historic preservation strategy to initiate that process. It begins with a summary of the significance of resources and their proposed treatment under the PDC, and ends with recommendations for the redevelopment and reuse of the Historic District.

Summary of Significance and Preliminary Development Concept (PDC) Policy by Sub-Area

The Administrative Core
The Administrative Core is the heart of the NAS Alameda Historic District. Most of the extant buildings and landscape elements were part of the original plans drawn up by the Bureau of Yards & Docks and were built during the earliest construction campaign between 1938 and 1940. Few of these contributors have undergone substantial alterations, resulting in the Historic District's high level of integrity. The Administrative Core contains several wood-frame semi-permanent buildings that do not share the same level of design significance as the original buildings. Although they are contributors to the Historic District, the Navy proposed to demolish six of these semi-permanent buildings in 1996. A Memorandum of Agreement signed by the City, the Navy, State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) in April 1996 acknowledges that while demolishing Buildings 75A, 115, 116, 130, 135 and 137 would have an effect on the Historic District, HABS recordation would be an appropriate mitigation measure.68

The Administrative Core is retained in large part in the PDC and given a prominent place as the civic center of the new community (Figure 32). Of the nineteen contributing buildings in the sub-area, twelve are to be

68 Memorandum of Agreement Submitted to the Advisory Council on Historic Preservation Pursuant to 36 CFR, Section 800.6(a), April 12, 1996.
Figure 32. Preliminary Development Concept
Courtesy of ROMA Design Group
rehabilitated according to the Secretary of Interior’s Standards and used for civic, office, community, and possibly work-live purposes. Alameda City Hall West will continue to serve as a civic center in Building 1, which is the original Main Administration Building and the primary structure on the site. The two main intersecting malls will be maintained in their present configuration, street framework and surroundings, thereby preserving the important symbolic core and the two primary axes of the site plan. The original entrance to the former base along the north-south axis is also preserved as an important gateway to Alameda Point. One contributing building, the Bachelor Officer’s Quarters (Building 17), and the six contributors that were the subject of the 1996 MOA (Buildings 75A, 115, 116, 130, 135 and 137), will be demolished. In their place, as well as north of Redline Avenue, new single family residential units will be constructed. Seventy new units will be constructed on the current site of the Bachelor Officer’s Quarters.

The Residential Area

Devoted entirely to housing, the Residential Area is the smallest and most homogeneous of the four sub-areas identified at NAS Alameda. Of the two contributing building types found there, the Officers’ Quarters and the NCO Quarters, the former are more architecturally significant, although both contribute to the historical understanding of the former base. The Admiral’s House, a larger version of the Officers’ Quarters, is placed at the hinge between the two housing types and within a green park at the terminus of West Essex Drive. The Residential Area is also the only part of the base to feature smaller, domestic-scaled buildings exclusively. After the Administrative Core, the Residential Area features the most extensive and intact landscaping of any of the five sub-areas. Finally, as the only sub-area of NAS Alameda that has undergone few programmatic changes over time, the Residential Area retains a higher overall degree of integrity than the other sub-areas.

The thirty identical NCO Quarters will be reused for housing in the PDC. The Admiral’s House will be rehabilitated for residential or community use, and will retain its setting within a park environment. The park will continue to serve as the eastern terminus of the east-west axis, enhanced with new landscaping and reshaped into a rectilinear configuration. The 18 Officer Quarters, known as the Big Whites, and the associated curvilinear road pattern will be demolished and replaced with approximately 120 new housing units following a linear street layout. New compacted fill, which will result in a new higher grade, is planned to address young bay mud and the 100-year flood plane that falls within the zone of the Big Whites. Adjacent to the Residential Area, outside of the Historic District boundaries, more residential development is planned, which will consist of mostly single family units and reuse of existing 1960’s-era residential buildings.

The Shops Area

Designed to serve as a staging area for the Hangars and the supply ships, the Shops Area was planned with flexibility in mind, and originally included unidentified vacant space. During the Second World War, several wood-frame semi-permanent buildings went up around the more substantial permanent warehouses and shops. As a result, the Shops Area remains the most heterogeneous of the five sub-areas and the one that retains the lowest degree of integrity. According to Steven Mikesell’s 1997 Guide to Preserving the Character of the Naval Air Station Alameda Historic District:

The Shops Area was given the least attention of all areas of the original NAS Alameda, at least with respect to its architectural detail. The Shops Area buildings were tucked away from view, behind the Administrative Core, and had little public use or visibility. The shops, in short, were designed strictly for function rather than appearance. Nonetheless, the shops buildings do share some architectural features and elements with other parts of the base, including the hangars and the Administrative Core...

Other studies have reached similar conclusions about the Shops Area. Although historically significant, the several semi-permanent buildings contribute less to the area architecturally and even detract from the overall Streamline Moderne style of the original buildings. Steven Mikesell's *Guide to Preserving the Character of the Naval Air Station Alameda Historic District* states:

It would be appropriate to consider policies that treat the wood-frame buildings (Buildings 91, 92, 101, 102 and 114) with a wider degree of latitude than with the concrete buildings and Building 9. The World War II-era temporary buildings were built to a much lower standard and are generally not consistent with the overall design of the base. Measured in terms of the uniform design of the original base, the World War II-era wood frame buildings make the least contribution to the overall quality of the historic district.70

Although it has been confirmed that Buildings 91, 92, 101, 102, and 114 are designated “semi-permanent” rather than “temporary” on Navy property record cards, it is widely accepted that these buildings do not exhibit the architectural integrity of the permanent buildings on the base.71

The PDC does acknowledge the Shops Area as the least historically significant of the sub-areas and most difficult collection of buildings to reuse, given their obsolete purpose and tremendous scale. The PDC proposes the most dramatic alteration to this zone of the Historic District, removing 9 of the 10 contributing structures and replacing the buildings with residential units and commercial buildings. The most strategic and architecturally consistent of the 10 contributing buildings, the Fire Station (Building 6), is retained and will continue to operate as a fire station.

### The Hangars Area

The Seaplane and Landplane Hangars Areas are both relatively homogenous, consisting of two rows of identical hangars and the former Air Terminal (Building 77). The only non-contributors in the area are Buildings 11 and 12 and their linking wing, Building 400. Although the Streamline Moderne architectural treatment of the Administrative Core buildings is not found at the hangars, the sheer scale, the stacking track doors, as well as the structural engineering involved with the hangars, deserve recognition. Furthermore, as it appears that the hangars were based on the standardized plans drawn up by Detroit architect Albert Kahn, they are the only buildings on the base that can be attributed to an individual architect. Visible from much of the Bay, the hangars embody the purpose and historical significance of NAS Alameda for many people.

The PDC retains the Air Terminal Building (Building 77) and all seaplane and landplane hangars identified as contributing structures, a total of 8 hangars. Commercial and retail uses are proposed for the reuse of the large structures, with rehabilitation according to the Secretary of Interior’s Standards. A few current uses, including the Alameda Naval Air Museum in Building 77, are to remain. Additional commercial infill development is planned for the Seaplane Hangar Area, along with a revitalized waterfront and a new public space consisting of green and hard space areas fronting the Seaplane Lagoon. The area adjoining the northeastern corner of the Seaplane Lagoon is identified as the Alameda Point’s commercial and transportation hub, the Town Center, which includes contributing structures, Building 41 and 77. The Town Center and the waterfront are served by an extension of West Atlantic Avenue in-between the Seaplane Hangars and the Lagoon. The PDC recognizes

70 Ibid., p. 67.
the importance of the north-south axis extending through the District to the Oakland Estuary and the Seaplane Lagoon, and protects key view corridors looking south along Lexington and Saratoga Streets, and looking west towards San Francisco along Redline and Midway Avenues.

For a complete list of all buildings currently at NAS Alameda, summary information, and ratings of significance and integrity, see the Property Database in Appendix F.

Recommendations for the Redevelopment and Re-Use of the NAS Alameda Historic District

Goal
The goal for historic preservation planning is to ensure the protection and future preservation of historic and cultural resources. NAS Alameda Historic District, as a City of Alameda monument and a National Register eligible Historic District, is a property of historic significance with ties to important local and national historic trends. The protection of the resource will enable continued observation, interpretation, and understanding of its contribution to, as well as its unique place within, our society.

All projects within the eligible Historic District boundary should comply with The Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (The Standards) (Appendix G). The Standards outline the Department of the Interior's advice on responsible preservation practice and are to be used when property owners seek certification for Federal tax benefits. They provide a consistent philosophical basis for the treatment of historic properties, be they buildings, structures, sites, objects, districts, or landscapes—all components found within the NAS Alameda Historic District. The Standards describe the following approach to rehabilitation:

1. Identify, retain and preserve character-defining features
2. Protect and maintain important materials and features
3. Repair materials and features
4. Replace deteriorated materials and features and design for replacement of missing features
5. Design alterations and additions in such a way so as not to change, obscure, damage or destroy character-defining features
6. Provide for life-safety and accessibility code requirements in a manner that does not radically change, obscure, damage or destroy character-defining elements

The Standards are referenced in the City of Alameda's Historical Preservation Ordinance as the guiding rule in determining whether to issue a Certificate of Approval for repairs and alterations to historical monuments.72 The designation of a historic monument, according to the City's Ordinance, is discussed as follows:

The purpose of this section is to promote the educational, cultural, and economic welfare of the City by preserving and protecting historic structures, sites, monuments, streets, squares, and neighborhoods which serve as visible reminders of the history and cultural heritage of the City, State or Nation. Furthermore, it is the purpose of this chapter to strengthen the economy of the City by stabilizing and improving property values in historic areas, and to encourage new buildings and developments that will be harmonious with the existing buildings and squares.73

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72 City of Alameda Historical Preservation Ordinance, 13-21.4.b.1.
73 City of Alameda Historical Preservation Ordinance, 13-21.1.
The Alameda Point Element, Chapter 9 of the General Plan, currently outlines the following policies with respect to preservation of the historic resources within the NAS Alameda Historic District:

**Guiding Policy: Historic Resources**
9.5.g Preserve Alameda Point’s Historic District, buildings, development patterns, and open spaces.

**Implementing Policies: Historic Resources**
9.5.h Preserve to the greatest extent possible buildings within the Alameda Point Historic District to maintain the neighborhood and historic character.
9.5.i Provide a mechanism for timely and expedient reviews to ensure that contributing buildings in the Historic District are not left vacant and are managed in compliance with all applicable regulations.
9.5.j Preserve the historic sense of place of the Historic District by preserving the historic pattern of streets and open spaces in the area.
9.5.k Minimize impacts on the architectural integrity of individual contributing buildings and structures.
9.5.l Make every reasonable effort to incorporate compatible adaptive uses or uses for which the buildings were originally designed…
9.5.m Prepare design guidelines and specifications for new construction within and adjacent to the Historic District that ensures compatibility of new construction with the character of the Historic District.74

Building upon this past work, the PDC recommends the following historic preservation strategies be used to guide future City actions and proposed development projects in the NAS Alameda Historic District. These strategies aim to protect and reinforce significant character-defining features while encouraging re-use and providing opportunities for new development. Care for the District’s unique historic identity is stipulated while maintaining Alameda Point’s future viability.

**Strategy 1:**
**Prioritize Buildings for Stabilization**
Since the Navy closed NAS Alameda in 1997, and base facilities have become available for public lease, many buildings have become filled with new tenants and have received architectural upgrades. Those structures that have not had the benefit of occupants and have remained vacant tend to be the very large structures with inflexible spaces. Examples of contributing buildings in this category include the Mess Hall (Building 3), and one of the Bachelor Enlisted Men’s Quarters (Building 4). These buildings do not receive regular maintenance and have witnessed deterioration. Not only will the deferral of maintenance continue to compound the problem and add to the cost of rehabilitation in the future, but it places the condition of the historic property into question. It is recommended that further analysis be performed to determine how best to re-establish a stabilization and maintenance program, and which buildings according to the PDC will require this work. Immediate stabilization and sustained maintenance of these unoccupied buildings is the first and foremost items in need of action. Included in Appendix H is NPS Preservation Brief 31: Mothballing Historic Buildings, a primary reference on this topic.

**Strategy 2:**
**Distinguish the NAS Alameda Historic District as a Unique Place within the Fabric of the City**
The western end of Alameda island has, from the City’s earliest documented history, been the site of notable industrial, rail, and aviation activity. The area has always been a zone primarily comprised of industry and transportation, while the remainder of the island supported the growth of residential, civic and commercial

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areas. It has a unique history and footprint, evident today in the site plan and building fabric that is an important and rare example of a Naval base designed in the Streamline Moderne style. This differentiation from the tree-lined neighborhood streets and Victorian-styled homes of adjacent areas is inherent in what is character-defining about the Historic District.

One of the stated goals of the NAS Community Reuse Plan is to preserve “the character of NAS whenever possible and appropriate while integrating the base into the culture and tradition of the city”.75 Continuing, the Community Reuse Plan looks to “achieve complete integration of the former NAS site with the rest of the island of Alameda, this is to be a seamless integration of the many neighborhoods, open space, and the best qualities of the existing city”.76 Redevelopment of the Historic District should maintain the character, integrity and singular quality of the historic resource while knitting the land into the fabric of the city. It is appropriate to consider thresholds and gateways that allow connection and porosity but acknowledge and allow for a unique historic environment to coexist and thrive. The objective is to remove barriers and fences, provide connections, support the continuation of neighborhood qualities, and make accessible Alameda Point’s revitalized public amenities while fostering a recognition and protection of its valued historic character.

Strategy 3:
Restore and Reinforce the Site Planning Concepts Reflected in the Original 1940 Plan
The original master plan for NAS Alameda served as the organizational framework for the early development of the base and is a prime example of the Total Base Design concept, wherein architecture, site planning and landscape are integrated into a complete ensemble. The influence of City Beautiful planning is apparent, resulting in the most significant aspects of the plan: the landscaped cross axes, progression and hierarchy along the axes, symmetrical buildings or groupings, cohesive architectural vocabulary, and unified landscape treatment. This organization can equally be effective in serving as a framework and guide for future development. Specific concepts to address or reinforce consistent with the PDC include:

- North – South Axis and East – West Axis
- View Corridors
- Street Pattern and Circulation
- Central Landscaped Malls
- Landscape treatments including boulevard landscaping on W. Essex Road
- Relationship of Buildings and Open Spaces to Axes
- Relationship of the plan to the Seaplane Lagoon

Strategy 4:
Retain Significant Use Relationships Reflected in the Original Five Sub-Areas
The purposeful arrangement of functions, indicative of the Total Base Design practice, is found in the five sub-areas: the Administrative Core, the Shops Area, the Residential Area, the Landplane Hangar Area and the Seaplane Hangar Area. These distinctive zones, with the associated building and landscape treatments, should be understood, even as change and modification occurs. Beyond their historic association, they provide logical arrangement of building types, scale, edges, and massing variation to the historic area.

Where significant alteration of a sub-area is required, it is recommended to focus the alteration on areas that have historically experienced modification. Following this approach, the PDC proposes the highest percentage of demolition and new development in the Shops Area of the District, where buildings departed from the original master plan configuration and the architectural treatment was greatly simplified. The new PDC

76 Ibid.
buildings in this area include the tallest new buildings and most densely developed program, including shop houses and commercial buildings, to re-establish compatible scale and volume characteristics.

With respect to functional uses, a compatible use to the building's historic use is to be employed with rehabilitation wherever feasible with the PDC. This is best illustrated in the re-use of the Administration Building (Building 1), a highly significant building at the center of the Historic District. The PDC proposes to maintain the City Hall West offices in this location and define the zone as a civic center in keeping with the nature and significance of the original historic use. The facing landscaped mall will be made available for large public gatherings and community events, a compatible use for a former parade ground.

**Strategy 5:**
**Restore and Revitalize Historic District Landscapes and Open Spaces**

Within the Historic District, the landscape serves to define the ceremonial entry and central open space. Two large rectangular intersecting green lawns orient along the main axes, originally comprised of more formal plantings. Decorative edges are formed with shrubs and trees, extending along streets into connecting areas and smaller entry courts. In the residential sub-area the green again becomes predominant, providing a park-like setting for residential quarters. Throughout, the planting material reflects the scale and function of the spaces.

It is recommended that a study of the Historic District landscape be completed to provide assessment and suggested guidelines for appropriate landscape rehabilitation. With this information, all new landscape plans should be formulated to reinforce the concepts of the original plan, provide for the restoration of the significant landscape features, and incorporate compatible new plant material in keeping with the historic plan. Monuments, flagpoles, and signage should be addressed and carefully integrated. The open space provided by the Seaplane Lagoon is equally important to consider. The open flat nature of the area in front of the grand row of seaplane hangars creates an impressive view corridor which must be considered in the design for improved public access and utilization of the waterfront on this important edge.

**Strategy 6:**
**Encourage and Support Re-Use and Rehabilitation of Contributing Structures**

Re-use of buildings is the first goal of any preservation plan. Occupancy brings not only life and purpose to the structure, but necessary care and maintenance. The most ideal use is the same as the original use of the building. However, a change in use is often required, in which case rehabilitation is to be followed. Rehabilitation is defined by the Standards as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.77

Currently the Mikesell document, *Guide to Preserving the Character of the Naval Air Station Alameda Historic District*, serves as guidelines for the NAS Alameda Historic District, providing a description of character-defining features and examples of suitable and non-suitable treatments to selected buildings in the District. Although the document has been an invaluable tool for the City, and has been recognized by the State Office of Historic Preservation as a guiding document, an updated, comprehensive set of re-use guidelines is suggested to accompany the PDC. Re-use guidelines outline information and conditions found in specific buildings to facilitate and assist owners and tenants with the re-use process. Data should be tailored to the needs of the building, but generally should include:

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Building summary information
Identification of intact historic fabric
Conditions assessment and recommendations
Parameters for rehabilitation, repair, and maintenance work
Pertinent code issues such as life-safety, accessibility and energy requirements
State Historic Building Code
Mechanical, electrical, and plumbing systems
Preservation incentives, including tax-credits and grants

Strategy 7:
Guide New Development within the Historic District
When new buildings are introduced into a historic context the overarching aim is to have the new work exhibit differentiated, yet compatible design with the historic. The Standards address new construction with Rehabilitation Standard number 9, calling for compatibility with historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.78

Design guidelines for new development are necessary to establish a clear policy on appropriate design within the Historic District. Guidelines are used as a design aid in determining acceptable new construction that preserves the character of the District. They should allow for creative design to occur, and not prescribe a certain architectural style but rather encourage an understanding of and compatibility with the Streamline Moderne architectural vocabulary in the District. In the process of formulating Guidelines, interested parties can analyze the issue of compatibility and reach consensus on acceptable architectural review processes. In addition to architectural design issues, Guidelines for NAS Alameda can specify planning, zoning, and landscape criteria for new development that are equally important in preserving the character of the Historic District (Strategies 3, 4 and 5).

Strategy 8:
Manage the Historic Resource
The responsible management of historic resources will provide innumerable benefits to our community. Proper knowledge, planning, tools, and communication are key elements for the task, resulting in clear policies, roles, responsibilities, and anticipated funding mechanisms to manage development. Acceptable management practices of historic resources should be analyzed and stipulated; financial sources available for rehabilitation, low-income housing, and other uses which may involve historic resources studied and identified; marketing strategies crafted; and a roadmap for implementing sound management of the historic resource adopted. With these efforts, future development and growth as outlined in the PDC can be achieved in collaboration with historic preservation.

VII. CONCLUSION
The NAS Alameda Historic District is a rare asset that is facing an unprecedented period of change. In this period of planning and review there is an opportunity to truly recognize the historic significance of the resource and to plan for preservation. The aim is to protect and reinforce significant character-defining features while encouraging re-use and providing opportunity for new development. In preserving the historic resource we broaden our knowledge, we retain the opportunity for future understanding, and we enhance appreciation of our cultural heritage.

78 Ibid.
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Francis "Borax" Marion Smith - The Borax King of Death Valley

Francis Marion "Borax" Smith (1846-1931), known as the "Borax King," and "Frank," Smith was a Death Valley mining magnate and businessman who headed the Pacific Coast Borax Company. Born in Richmond, Wisconsin on February 2, 1846 to Henry G. and Charlotte Paul Smith, Francis attended public schools as a child before graduating from Milton College in Wisconsin.

At the age of 21 he left his father's ranch and, answering to the irresistible call of the west, he made his way toward the Pacific, visiting Idaho, California and Nevada, spending considerable time in mining and other work in those states, before settling in Nevada for five years.

In the late 1860's, Smith was working under a contract with several ore mills near Columbus, Nevada, locating and getting out timber for the various mining camps. While working at Teel's Marsh, he discovered a rich supply of borax. Collecting samples, he had them assayed, which proved the ore to be higher than any known sources for borax. He soon staked several claims and began his career as a borax miner.

With the help of his older brother, Julius, and two brothers by the name of Storey, the men established a borax works at the edge of the marsh to concentrate the borax crystals and separate them from dirt and other impurities. Operations began in 1873 under the name, Smith and Storey Brothers Borax Co. Later, the Smiths acquired the Storey brothers' interest and the company name was changed to Smith Brothers Borax Co. and later to the Teel's Marsh Borax Co. The Teel's Marsh deposits soon became the world's principal source of supply and remained so for years, bringing borax to a wide commercial use around the world.

In 1875, during a national depression, Smith opened a retail store and office at 185 Wall Street in New York City to expand the borax market. His advertising claims that borax would "clean black cashmere, cameos and coral, deep milk and cream sweet" and "prevent diphtheria, fever and kidney troubles" may have been exaggerated, but they helped to popularize the cleaning additive in a prime market and in a period when sales were slumping. That same year, Francis married Mary "Mollie" Rebecca Thompson Wright, a divorcée from Brooklyn, New York.

In 1877, Smith founded the settlement of Marietta, Nevada, now a semi-ghost town, from which the borax refinery was recognized for being the first in the world to refine borax. He later invested in real estate, while continuing his operations at Teel's Marsh, Nevada in 1884, Smith bought out his brother's interest in their partnership and Frank began to turn his eye to potential development in Death Valley. When William T. Coleman, who owned the Harmony and Amargosa Borax Works, the Furnace Creek Ranch, and other properties in Death Valley, California, began to have financial troubles in the late 1890's, Smith provided "an income with capital in exchange for mortgages on the property.

In 1889, to expand the processing of raw minerals that formed the borax product, Smith worked with renowned engineer and reinforced concrete innovator Ernest L. Ransome, to design two new refineries for him—one in West Alameda, California, and the other in Bayonne, New Jersey. The California refinery was recognized for being the first to...
Unfortunately for William T. Coleman, his empire collapsed and Smith gained all his properties in 1890. The name of Smith’s properties then became the Pacific Coast Borax Company. Smith ceased operations at the Harmony and Amargosa Borax Works in order to focus on mining operations at Borate, California in the Calico Mountains. Initially the ore was hand sorted at the mine, and hauled to Daggett, California using the 20-mule teams and wagons that William T. Coleman had first used in Death Valley.

In 1891, Stephen Mather, the administrator of the company’s New York office, persuaded Smith to add the name 20 Mule Team Borax to go with the famous sketch of the mule team already on the box. The trademark would be registered three years later. Mather would go on to own the Thorkildsen-Mather Borax Company, and in 1916, was appointed the first Director of the new National Park Service.

While Frank was busy with his borax interests, his wife was busy with charity work – especially working hard for aid and assistance for orphaned girls. Mollie, after a tragic miscarriage, could never have children of her own, but she yearned for them. Raising money for their assistance, the couple also took in a number of young girls as wards over the years. In 1883, they had adopted an infant girl, who they named Marion Francis Smith. Ten years later, they would take in two young teenagers named Anna Mae and Sarah Winifred Burdge. While there were many others they looked after, these three would become part of the “Solid Six,” as Frank affectionately called them. Over the years, Mollie’s contributions and assistance to these many girls would continue.

In 1892, Frank and Mollie went east to Shelter Island, New York, to find a place to build a summer home. This was probably for two reasons, the first of which was that New York was Mollie’s original home; and the second, Shelter Island was also the place where his friend, and soon-to-be partner, Frank Havens, already had a summer home. Before they left New York, they had purchased a 42 acre homestead, which already included a colonial style home. Frank then hired an architect to add to the original home, which would eventually feature 35 rooms. He also added significant acreage over the years until the estate sat in the midst of some 435 acres. They called their new summer retreat “Presdeleau.” Over the next several years, Frank would continue to buy more property in the area, adding to the estate.

Convinced there was a more efficient and profitable way to haul the ore from the mines to the railroad at Daggett, Frank began to experiment with a steam tractor called “Old Dinah” in 1894. Unfortunately, due to the roads from the mines, the experiment failed and he would continue to utilize the 20-mule teams for the next several years.

In the meantime, Smith had also been investing heavily in real estate and public transit in Oakland. He, along with partner, Frank Havens formed the Realty Syndicate in 1895 buying area real estate, as well as acquiring and consolidating a number of small, independent transit companies to create an integrated system of streetcar lines and rail extensions to a number of subdivisions the company was developing.

Continued Next Page
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3. Historical Setting – Port of Los Angeles

The following historical setting has been adapted, in part, from the intensive-level surveys of the Port of Los Angeles prepared by Jones & Stokes in 2008, as well the reconnaissance-level surveys by San Buenaventura Research Associates from 1992 to 1996. Additional historical information developed by FSA has been inserted into the historic setting where appropriate.

3.1 Early History

The Port of Los Angeles is located approximately 20 miles from downtown Los Angeles, at the southeastern point in Los Angeles County. Due to its location on the Pacific Ocean, the surrounding area historically served as a port facility to varying degrees. Commonly referred to as San Pedro, the port is located within the boundaries of three historic ranches: Rancho San Pedro, Rancho Los Pueblos Verdus, and Rancho Los Corrals. These ranches, captured by Governor Pedro Fages to three veterans of the 1769 Portola expedition, possessed combined acreage equaling almost 34,000 acres (Beck and Haase 1974). Owners of the ranch lands earned a living through the raising of cattle and participation in the hide and tallow trade, and by 1830, San Pedro was considered a leading hide center on the west coast (Ravelo and Dean 1993; Queenan 1986).

Following the annexation of California by the United States and the subsequent Gold Rush, influx of new settlers descended upon the San Pedro area. While some residents realized the area’s potential as a port town, the region was undermined as a port during this period. Cattle and sheep ranching continued to dominate the economy, with one of the largest sheep operations in California, Flint, Bixby & Company, establishing the largest portion of its operation in San Pedro (Queenan 1986; Beck and Haase 1974).

3.2 Commercial Shipping, 1857–1897

One of the earliest residents of the area, Phineas Banning, realized the potential of the area as a commercial shipping port, and in 1857, he constructed new docks to take advantage of the increasing trade coming in and out of Los Angeles. Two primary routes to the southwest gold fields, the Gila River Trail and the Old Spanish Trail, ended in Los Angeles. Banning shipped materials on smaller boats from his base in Wilmington to and from a second location on the Rancho San Pedro waterfront.

Banning also realized the importance of rail transportation between his operation on the bay and the growing city of Los Angeles. In 1869, Banning and his investors organized the Los Angeles & San Pedro Railroad (LA&SP), marking the beginning of a period of fierce rail competition in the San Pedro and Los Angeles area. Banning’s LA&SP was the first route to establish a reliable means of moving cargo from the ships coming into San Pedro Harbor to the City of Los Angeles.

Although the LA&SP was the first short line in southern California, by 1872 it had been purchased by the Southern Pacific Railroad (SPRR). In an attempt to break the stranglehold that the SPRR had on shipping in the area, Senator John P. Jones from Nevada established the Los Angeles and
Independence Railroad (LA&I) a year before the SPRR's acquisition of the LA&SP. However, like the LA&SP, the LA&I soon was part of the SPRR system (Queenan, 1986).

Due in part to the improved transportation to and from the harbor, Los Angeles experienced rapid growth during the late nineteenth century. From a population in 1880 of 11,000, the city grew to 50,000 by 1890 and to 100,000 by the turn of the century (Masden, 1926). The increased population brought with it the need for more construction and living supplies, much of which came from ships destined for San Pedro shores.

3.3 San Pedro Bay and the Founding of Port of Los Angeles, 1897–1913

Growing commerce in Los Angeles eventually required the formal establishment of a shipping port. The federal government agreed to assist the City of Los Angeles by establishing its official harbor in San Pedro after several studies recommended it over other sites, including a Santa Monica site pursued by Collis Huntington, an influential member of the "Big Four" railroad barons. Following an extensive battle with Huntington, the San Pedro Harbor site won authorization from Congress in March 1897.

In 1905, in preparation for the opening of the Panama Canal, the City of Los Angeles extended its boundaries to coastal tidelands where it annexed San Pedro. The Port of Los Angeles and the Los Angeles Harbor Commission were officially created in December 1907, and numerous
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Final Program Environmental Impact Report

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Figure 4
Library of Congress Map of San Pedro, CA, circa 1905

Harbor improvements followed, including the completion of the 2.11-mile breakwater, the broadening and deepening of the main channel, the completion of the first major wharf by the SRPR, construction of the Angel's Gate Lighthouse, and the construction of the first municipal pier and wholesale fish market. The construction of the breakwater was a "monumental engineering feat" requiring crane operators to place large boulders in precise locations 40 to 50 feet below the surface of the water. Both Wilmington and San Pedro were part of the City of Los Angeles by 1909, and because of this citywide growth, the Port of Los Angeles became the world's largest lumber importer by 1913 (Marquez and de Tierramonte, 2007; Matson 1920).

A 9-mile outer breakwater was completed in 1913, splitting the harbor into Inner and Outer Harbors. The Inner Harbor was known as Wilmington Harbor and the Outer Harbor was known as San Pedro Bay. The same year, dredging and filling of Mormon Island (Inner Harbor) allowed for its conversion from swamp land to land suitable for wharves and steels (Marquez and de Tierramonte, 2007). The first industries to use these new facilities were shipbuilding companies.

The opening of the Panama Canal in August 1914 decreased the amount of time spent by ships traveling between eastern and western U.S. ports, and promised to open up new trade opportunities worldwide. In preparation for this new trade, the City of Los Angeles completed one of many large municipal terminals in the harbor. However, the outbreak of World War I that same year temporarily stalled the movement toward expanded worldwide trade (Queeman, 1950).

3.4 Wartime Changes, 1914 – 1950

The principal use of the port changed again when England declared war on Germany. At the onset of World War I, the U.S. Navy took possession of a portion of the harbor for a training and submarine base in order to establish a significant presence on the Pacific coast. During the war, the Port was one of the chief sources of employment for residents of the area, with shipbuilding...
enterprises turning out vessels by the dozens for war effort. The Port of Long Beach, established only two years before the onset of the war, offered the only southern California competition to the Port of Los Angeles in terms of shipping and shipbuilding.

Despite the previous use of the Port for the shipment of goods, it was not until 1915 that the Port of Los Angeles began constructing its first warehouse. Warehouse No. 1, located on 60 acres, was six stories in height, with a total storage capacity of 300,000 square feet. Warehouse No. 1 opened on March 6, 1917 to great fanfare, with over 10,000 people in attendance. The completion of this building symbolized the Port's transition to a significant seaport able to handle deep sea ships of varied cargo (Marquez and de Turene, 2007; Qucecra, 1986).

In 1917, Terminal Island was dredged and filled. Boating companies moved their facilities from Mormon Island to Terminal Island. Oil terminals and petroleum facilities took their place on Mormon Island (Marquez and de Turene, 2007).

Between 1917 and 1930, distributors constructed a large number of new wharves, warehouses and sheds, indicating a significant increase in trade at the Port. In the 1920s, over 25 million tons of cargo passed through the port (Marquez and de Turene, 2007).

Transportation systems improvements also encouraged the growth of the import and export trade in the harbor area. By 1917, a vast railroad network existed around the harbor and Los Angeles, which facilitated the efficient movement of goods throughout the country. Los Angeles had an advantage over the Port of San Francisco in that it did not have the Sierra Nevada posing an impediment to cargo shipments as routes to the east coast (San Francisco Research Associates, 1992).

During the period following the end of World War I in 1918, the Port was increasingly used for importing lumber and other types of raw materials. Similar to the prewar period, the vast majority of inbound cargo to the Port consisted of lumber to satisfy the rapid growth of the Los Angeles area. Exceptional levels of new construction of homes and factories necessitated the importation of lumber on a large scale (Matson, 1920). Comparatively, the biggest export product passing through the Port during the postwar years was crude oil.

Following the end of the war, many trade restrictions were lifted, and the Port provided for the transportation of a wide variety of products. Although lumber and crude oil were the biggest commodities to pass through the Port at the time, Los Angeles featured almost all types of industry. Soon after the war's end, many different types of commerce and business activities developed in the area. Although existing harbor facilities continued to be used for products such as oil, lumber, ships, and fish, new facilities were developed to handle products such as cotton, honey, citrus crops, and steel. In 1923, the City of Los Angeles passed a harbor improvement bond measure, resulting in the construction of additional wharves to meet the demands of increased imports and exports. In order to streamline the railroad portion of shipping in the harbor, various railroad companies serving the Port consolidated operations by 1929 under the title the Harbor Belt Line Railroad (Qucecra, 1983; San Francisco Research Associates, 1992).
Harbor traffic slowed during the Depression years and the harbor witnessed a sharp decline in international trade. The Harbor Commission continued to make improvements, however, including a new breakwater extension, completed by 1937, and the construction of new cargo and passenger terminals. The federal government's Works Progress Administration (WPA) helped the Port finance improvements, including passenger and freight terminals and wharfs (Queenan, 1986).

As one of the major American ports closest to the fighting in the Pacific Ocean, San Pedro experienced new life and distinction during World War II. Ship and aircraft production facilities in the harbor area worked day and night between 1941 and 1945 to manufacture more than 15 million tons of war equipment. In addition, hundreds of thousands of personnel passed through the Port when departing for and returning from combat.

The LAHD launched a broad restoration program following the war, as many facilities in the harbor required maintenance which had been delayed during the war years. During this time, the LAHD improved several of its buildings and removed many temporary wartime buildings (Queenan, 1986).

3.5 Containerization: 1960 to Present

With the rise of containerization following the end of World War II, methods of shipping changed dramatically. Prior to this new method, cargo loading was labor intensive, with individual pieces of cargo, drums, boxes, bags or crates, loaded into ships. Cargo was brought to the dock by truck or rail and the individual pieces of cargo were unloaded into transit sheds, sorted and organized, and then moved to the wharf for loading as individual packages into the ship's cargo holds by either ship-based or shore-based cranes where it was then stowed. Alternatively, longshoremen would place the individual pieces of cargo in cargo nets that were hoisted into the ship where the individual pieces of cargo were unloaded and stowed. Some efficiency was achieved by placing several individual containers (e.g., drums, bags, or boxes) on a pallet and then loading the pallet into the cargo hold.

Containerization ships appropriate cargo in standard sized, sealable steel boxes, typically 20 or 40 feet long. Special trailers transport these boxes to and from the port by trucks or rail. An empty container is delivered by truck to a location (manufacturer, warehouse, or other enterprise), is loaded with cargo and sealed, then transported by truck or rail to the port, where shore-based cranes lift the container from the trailer and place it in the ship’s cargo hold or on the ship's dock. After the container is delivered to the destination port, the process was repeated in reverse. This consolidation of cargo in standard-sized containers improves the overall efficiency of transport and allows greater integration of transport by truck, train, and ship.

The adaptation of the maritime industry to containerization involved not only the creation of new ships, truck trailers, rail cars, and cargo cranes designed and built specifically to handle the standard cargo containers, but also the construction of new port facilities. As the loading and unloading of ships and the associated handling was the most time consuming aspect of moving cargo through the Port, under the old loading methods, cargo terminals were designed to
maximize the "surface area" of the terminal by providing as much berthing space as possible, with little backland (transit sheds) to service each wharf.

The containerization method required large-volume terminals, with extensive backlands, and internal roadways to service each wharf. The increased backlands reflected the need for storage of trailers and containers awaiting a ship's arrival, area needed for the loading and unloading of containers onto ships, and area needed to process the containers into and out of the terminal by truck or train. With the increased efficiency, the limiting factor of transferring cargo became the organization and optimization of storage of containers awaiting shipment, movement in and from the wharf, and cargo flow into and out of the terminal via road or rail. This meant that ports had to either develop new terminals to meet the needs of the new geometry required by containerization or redevelop older terminals. In addition, with containerization, the weight of cargo "packages" (i.e., containers) increased dramatically, requiring much larger cranes and a corresponding move from timber to concrete wharves.

Major improvements to the Port in the 1970s included the deepening of the main channel to accommodate the larger container vessels entering the bay, the purchase of land to expand terminals, and the replacement of older wharves that could not bear the increased weight of newer containers.

Worldwide shipments through the Port increased during the latter half of the 20th century as ocean-going vessels grew to sizes no longer able to negotiate the Panama Canal. Using a "hand-bridge" system, shippers wished to pass materials from the Pacific Ocean to the Atlantic Ocean employed the more efficient practice of unloading at the Port of Los Angeles, moving materials cross country via truck or train, and loading materials onto ships on the east coast.

The following provides a historical context focused on Municipal Pier No. 1.

4. Historical Context – Municipal Pier No. 1

In anticipation of increased shipping due to the construction of the Panama Canal, to be completed in 1914, the Los Angeles Board of Harbor Commissioners initiated several improvements at the Port of Los Angeles in the early 1910s to capture a greater portion of the increased shipping traffic in the Pacific. Improvements to the Outer Harbor included the construction of the massive Municipal Pier No. 1. Work on the Pier began with the filling of the Huntington Cut (also called the "Huntington Fill") during the spring of 1912. Over 60 acres were filled with materials taken from dredging the adjacent channels to a new depth of 35 feet (Marquez and De Jesus, 2007; Board of Harbor Commissioners, 1912-1913; LAT, February 6, 1912). According to the Los Angeles Times, this area provided the best opportunity for deep water wharves at the Port (LAT, March 20, 1911). The Board of Harbor Commissioners Report for 1912-1913 called the construction of Municipal Pier No. 1 as "one of the best pieces of wharf construction in the country," and also noted that, "This will be the finest wharf construction that can be built, and is designed for the deep sea commerce of the great ocean lines that will come through the Panama Canal from Europe, or engage in trans-Pacific trade. Figure 5 shows the dredging and fill operations circa 1913."
its assets. "In view of pressing engagements in New York" and "to prevent a dissipation of our property," the firm's spokesmen, Frank S. Johnson, a partner, and the firm's secretary, comitted to the sale of between $4 and $4.5 million, and liabilities of $2 million. The borax properties alone were valued at $2 million, but their sale was blocked when Congress put borax on the free list in a new tariff bill. This was a further blow, for it threatened a fall in the domestic price of borax, and thus a corresponding decline in the capitalized value of all American borax deposits.

Initially, Coleman's failure was viewed as a temporary matter, but it soon became apparent that the firm would not reopen its doors. Showing the characteristic integrity that made him one of the most highly regarded men in San Francisco, Coleman liquidated his personal holdings and devoted the few remaining years of his life to paying off his creditors in full.

In the assignment, the Coleman interests in Meridian Borax, Harmony Borax, and the West Alkali Co. were segregated for separate treatment under the custody of A. L. Tubbs. In March 1890, Borax Smith acquired the borax properties and the Alkali Co. refinery as well. The reported price for the Death Valley properties alone was put at $400,000. Smith undoubtedly borrowed heavily for this purpose, which may have been one reason why Joseph Mather began to suffer at his employer. Mather disapproved of extensive debt, and this acted as the immediate impetus for Smith. Borax Smith, by contrast, had great ambition, and was only too glad to borrow money in the service of their larger goal.

Formation of the Pacific Coast Borax Company

Even before its financial collapse, Coleman had begun preparations for mining endeavors in Bannister. Smith fully agreed with the wisdom of the move, so by 1890 Bannister was in production. The firm had now come for consolidation of their several borax companies. The Pacific Coast Borax Company was created on September 10, 1890, with Smith as president and majority shareholder. The age of elements had begun, while that of marble extraction was virtually over. "PCB," as the new company soon came to be known, lost no time in winding up its marsh operations and in closing its mercantile stores in Columbia and Medford.
In taking this step, however, Smith made a deal with his old California brother-in-law, Ben P. Edwards, to continue operations on a smaller scale at Tule, Fish Lake, and Columbus mountains, where profitable deposits still remained. To carry out the deal, Edwards made an interesting arrangement with a Chinese labor contractor with the unlikely name of Billy Hard, under which Billy would pay Ford $50 per ton of worked silver, providing the assignments and showing, while Billy would build, cloth, and equip the claims. In turn, Ford would pay Edwards $75 per ton. Ford's Chinese laborers lived in little wooden shacks barely three feet high. Some of them are still intact today. In a week to the PCI silver mined in 1908, Boris Smith declared that production was still continuing at Tule's at that time, with a total cumulative output of probably 17,500 tons.

Before leaving the church, deacon, chancel, and vestry, they will hold an annual meeting of the Nevada branch membership. It is appropriate to take account of the many close friends and faithful people whom F.M. Smith found there. Undoubtedly, one of his business success lies in his ability to attract loyal and competent associates, to whom he readily delegated authority and responsibilities as rapidly as they could handle them. Some of these people came from Columbus or Tule's, but most of them lived in Carlin. For convenience, they're referred to here as the "Nevada Circle."

Of the whole group, there were four men of outstanding ability, three of whom were to share the rest of their careers in the profitable service of Boris Smith.*** In no particular order of preference, the first one was John Ryan, the Irish bachelor from County Clare, whose friendly, natural intelligence, courage, and common sense made him Boris Smith's right-hand man for almost 40 years. His first work for Smith at Joe's Marsh in 1873, and stayed with him (also for three years in South Africa) until Smith quit PCI in 1918. He was a rugged desert man and hard-rock miner with the natural leadership qualities of a top superintendent. Smith used him for everything from chasing claimjumpers in Nevada Valley to supervising a big camp at Borax and building and then operating the Tonopah and Tidewater Railroad. So far as John Ryan was concerned, Frank Smith was the boss. Anything he wanted John Ryan to do he did, and did it the way "Mr. Smith" wanted it.

Next, there was Fred Cook, supersenior chief of the Horine Mine (the richest mine near Bellevue, Nevada) in 1906. Yet he was Boris Smith's mine superintendent, first at his borax properties in Nevada, then at the great colemanite camp at Borax, and finally at Smith's West End Consolidated silver mine in Tonopah. Cook was a mining engineer of rare ability, who had emigrated from the Isle of Man. He rose in the service of PCI, first at Borax, then at the Lia C (Old Ron), and finally at "New" Ryan, on the east side of Death Valley. Both his son, Frederick W., and his grandson, J. Fred Cook, became key men in PCI. However, the first Fred Cook stack with Boris Smith, leaving PCI for Smith's West End silver mine in 1914, where Smith himself severed all connections with the company he had founded.

Then there was Benjamin Franklin Edwards, of Welsh descent, born in California in 1865 and 20 years later a young miner in Candelaria. Edwards was a man of diverse talents, all of which attested to outstanding business ability. Undoubtedly he knew Boris Smith by the mid-1880s, through that restless entrepreneur's many trips to look over his three big properties in the Nevada basin and the Virginia. He was a driving force in the development of the Great Western Mining and Railroad Company, whose town of Tonopah was under construction in 1897. The town, and eventually the railroad connecting it with Virginia City, was named for his wife, Virginia. When Smith acquired the Virginia City properties in 1896, the town was renamed Smith City after the new owner.
western Nevada district. When PCB decided in 1891 to get out of "marsh farming" for borax mining, Smith picked Edwards as his agent and contractor to keep the properties going on a smaller scale. By this time Edwards was also a banker and merchant in Candelaria. Edwards and Smith would continue their business association until 1917, when they disagreed over management issues. Yet they remained friends until the death of Borax Smith in 1931.

Finally, there was Christian Brescian Zabriskie, probably the most important of the whole group in terms of influence upon Smith. Chris, as he was universally known, was of Dutch and Polish descent. He was the son of an army officer, Captain Elias B. Zabriskie, and was born in 1864 in Fort Bridger, Wyoming. Later the family moved to Carson City, where he grew up. Chris Zabriskie had good looks, charm, brains, plenty of ambition, and a measure of opportunism in his character. He worked in and around Candelaria in the early 1880s, and soon caught the siren eye of Borax Smith, who was on the lookout for exceptional men. Toward the end of 1884 or early in 1885, Smith offered him the job of superintendent of his Pacific Borax Company works at Columbus Marsh. This connection seems not to have lasted very long, for the local papers carried reports of the doing various jobs in various places. In the fall of 1885, Chris Zabriskie married Margaret Louise Edwards, who was Ben Edwards' sister.** Toward the close of 1892, the Zabriskies and their year-old daughter moved to Oakland, where Chris entered the real estate business.***

Advertisements in the local paper disclosed that Chris was selling lots in the southwestern section of Oakland, near the Emeryville line. Of most importance was the claim that the lots would be conveniently close to the proposed "new ferry terminal" for San Francisco. This was the first public revelation of Borax Smith's grand dream for a transbay electric railway and ferry system—a project that would not come to fruition for another 10 years.
From Ulituri to Columbite

With the formation of SEAT in 1993 and the shipping of the main products by the subcontract with Ben Edmonds, C. M. Smith was now a major player in the mining of Columbite at Borneo. In picking up the remains of Coleman's fallen empire, Smith acquired two very important undeveloped Columbite deposits, the so-called "Mrs. Smith Columbite" at Old Town on the east side of the Greenwater Range, and the other a collection of Columbite claims, the so-called "Lilac" group, on the west side of this range. This is only a few miles from the floor of South Valley. In time, these claims would become mines to be known as Miss, the Diamond, the Playfair, the Gold Rush, the Lilac, Mccarthy, the Monte Bianco, and the Lilac V. Oakley. But when these properties were reserved for the future, Smith as an outstanding mining man was always careful to keep his personal revenues well ahead of current production.

Columbite is a very different type of mining proposition from the familiar approach developed mainly in King's Hill, as described in Chapter 1. It is classified by chemists as a double salt, sodium-calcium borate. By contrast, columbite is one of the calcium borates. It is found in granular masses or in white or gray crystals. Unlike the other salt-based borates, it is generally thought today that it was derived from the elevation and folding of salt beds or from deposits during the Tertiary period in geologic history. The abundant drainage over millions of years leached out the sodium boro-cacite, leaving behind zones of barren, fine-grained rock composed of calcium boro-cacite, which is insoluble in water.

How, then, were bauxite to be extracted from the ground? Smith's initial step was to build a new refinery at West Alameda in 1894. It was a crushing, reduction, and refining plant all in one. Its most unusual feature was its roof, which looked like the first structure in the United States to be built with reinforced concrete. It was typical of Smith's destiny to be a leader in a new material. The structure was composed of "Alaskan boro-cacite" (columbite), which is insoluble in water.

Operations at Borneo were a case of genuine underground mining with shafts, chutes, cross-cut, and slopes. Mineralization was not continuous, but was scattered through ore or pockets that the miners called "tidings." The columbite was sorted by hand, then sent to the surface through shafts of depth up to 600 feet. Twenty-mule teams then hauled the ore out of the deep end and loaded it into a car and sent it by the railroad to Daggert, 12 miles distant. After arrival, West Alameda, the ore was crushed to a fine powder and treated with a hot sodium carbonate solution. By continuous agitation the precipitated calcium carbonate was removed and the remaining solution was placed in crystallizing tanks, where the boro-cacite was crystallized on suspended wires, then recrystallized to become a finished product.

But Smith was unhappy with the operation, first because it continued to make up teams, and second because the finishing was the only means of eliminating waste material ("beneficiation") at the mine, which added to the shipping cost to Alameda. In 1894, to solve the transportation problem, Smith used out a Daniel Best

The West Alameda boro-cacite refinery as it looked about 1890. This was the first concrete building in the United States. (Fred Coppel collection.)
steam tractor, known locally as "Old Dinah." The experiment was a failure, although many of these machines had proved successful in lumber camps and under other more favorable conditions. In any case, Borax Smith was a stubborn as well as a determined man. This time he met the need for transportation by building the Borax and Daggett, a narrow-gauge line of about eight miles in length. It was opened in 1898, and hauling power was supplied by two geared engines of the Heister design, known respectively as the "France" and the "Marion." Four miles from the new road's junction with the Santa Fe Railway at Daggett, the company built a modern calcining plant. This location was named Dinah.

The objective of the new plant was to solve Smith's second problem, that of better ore beneficiation. The plant was based on a principle that Boraxnetics was anxious to exploit. By appropriate screening, the waste rock, can be separated at 1200°F, leaving the fine particles as borax freed from the calcium carbonates. The purpose was to produce a product to affect the decalcification, with screening in between the lines."

The Execution Organization of the Pacific Coast Borax Company

At this point, it is appropriate to examine in further detail the operating organization of the Pacific Coast Borax Company in the 1900s. The head office was in San Francisco. Although it was an incorporated firm, it was a business completely dominated by a single man, F. M. Smith himself. The board of directors was composed of Smith Smith members because Smith held most of the voting stock. Mining and refining were administered to representatives who were loyal Smith lieutenants, such as Fred Carkill, Harry Simmerman, and W. B. Perp. Sales were handled by Smith himself, with Joseph Mather in a similar capacity at the New York office.

In 1892, Joe Mather's son, Stephen Lyng, a young man of twenty-five who worked for the New York Sun, had an idea that aroused Smith's interest. Stephen Mather was convinced that there was a great story to be told, and he could not understand why it had never been written. He persuaded his father with his proposal, and together they got Borax Smith to finance it. Through his knowledge of conventions, Steve Mather recommended a reporter named John H. Joe to do the writing. The result was a short illustrated essay, "Sketches of Death Valley and Other Borax Deserts of the Pacific Coast," which had a major impact on its time. More than that, it convinced Smith that Steve Mather would make an excellent publicity and sales-promotion manager for PCCB. It was one of the best business judgments he ever made, for young Mather was a natural salesman, with an attractive personality, much energy, and a thrusting imagination. It was he who persuaded Smith to expand the package business, and to add the label "20 Mule Team Borax" to go with a sketch of the famous team at work on the haul. Smith claimed initially that eventually persuaded to adding the label "20 Mule Team Borax" to go with the famous tradition. In this way borax became a household word all over the country.

In the summer of 1894, Steve Mather and his wife traveled to California to visit Borax Smith. Mather's goal was to persuade him to open a Chicago office. Smith agreed to think the proposal over, but sent him back with the question unresolved. Not long after,
however, Smith wrote his approval, informing that Mather met him in Chicago "preparing to organize the distributing office you recommend," and endorsing $1,000 for the expenses of his California trip. In 1892 the new office was in business, with Mather putting on a series of successful promotions that created a surge of new demand for berries. 

The future looked bright for Steve Mather, but his father took a different view. The year was 1895. Steve had sought his father's advice about buying some PCB shares, to which Joseph Mather's obvious reaction was that he was "trifling with Mr. Smith's style of business." But he had been hard pressed to invest impulsively, and that he was now "tempted for money to meet the growing obligations." Joseph Mather then announced his retirement.

Smith managed to get Steve Mather to take over the New York office long enough to train the new men, Chas. Zabriskie, after which Mather would return to Chicago. Meanwhile, Thomas Nordland, Stephen's Chicago mentor, would hold the fort there. The largest reticulated yet most important feature of the whole transaction was Joseph Mather's solemn disapproval of F. M. Smith's newly reduced stance on short term borrowing, but up to a point it was an accurate observation of the business position for the future.

Frank Smith was to lose Nordland almost immediately upon Mather's return because Smith had wanted Nordland at his side to take advantage of a financial windfall at the company's discretion. Mather stayed on with PCB until the spring of 1909, when he received a generous buyout. In a rather thoughtless action, Smith immediately invited him to the payroll. In return, Mather asked him his resignation at the end of 1909, at the same time getting off a telegram to Nordland accepting a job in the latter's new borax company. The firm opened mines first at Frasher Mountain in Ventura County, California, and then at Sonoma County, near King, California. Nordland had a public hearing in Chicago.

Relevant to the entire incident, it should be noted that even before Mather's influence, while he was still an employee of Smith's, he had managed to borrow $10,000 from his father to invest in Nordland's new borax enterprise.

Meanwhile, trade was dull during the period, and Smith decided to take a trip to Europe in 1896 in search of new markets. At his conclusion, he would be in control of a new multinational company.
for each of the owners of the Rhode Island that each partner contributed. This mutilated Smith, bending him to say that he was unable to continue, and he dropped the whole venture outside of what you have remitted previously.  

After having considerable understanding with Baker whom he thought the company might not take place until January.  

Eventually Baker managed to sell Smith down to some transaction, and after a futile search of Paris for a Thanksgiving turkey dinner, Smith and his party left for Venice, planning to proceed from there to Rome and Prague. In a letter to Baker just before Christmas, Smith returned a nudge from Baker that the financial situation was improving. Smith was only going to be in London at that time and had not held of some money before it came.  

Persuasion deliberate, because of Baker's weakened position, Baker solicited some of the older partners since just before receiving Smith's letter from Rome  

Baker was an active and incisive man who depended upon the goodwill and cooperation of his highly intellectual and somewhat temperamental majority stockholder. Unless he could placate Smith, the whole enterprise would fall in that area. Any Smith had been gone from Oakland, the seat of his business operations, for some seven months. Thus it was not unreasonable for him to entertain with all these delays, all the more to overcome Smith's highly emotional and impatient nature. 

Naturally Consolidated, Limited, came into being in January 1899. The company, capitalized at $2 million starting, or just under $2 million, of which $2.5 million was stock issued, and $200,000 was held in reserve. The capital stock consisted of $200,000 in voting common shares, $200,000 of 2.5 percent cumulative preferred, and $1 million in first mortgage debentures at 3.5 percent, of which $400,000 were issued upon formation of this company. 

Control, obviously, lay with the common, or "ordinary," shares. Thus represented 25 percent of total capitalization and thus enjoyed considerable leverage. Smith, of course, was the majority holder. The partners also acquired portions of the preferred and the debentures, which gave them a source of future financial liquidity through their role without impairing their voting control. Significant ly, some of the common was offered for sale, while more than half of the preferred and of the debentures were placed on the market. The remainder of these securities were used to pay for acquisition of independent concerns and for general purposes of the partners themselves. 

Thus began a multinational company that today has marked its 80 years of existence. Its founders had built it, and at the outset of its many problems contended with. They had to coordinate activities over wide ranges and distances. Their principal concern, however, was to avoid signs of financial distress. A choice had to be made, and the company was likely to call for a return to the East Valley region, which had not been as actively exploited since Harmony Street closed in 1888. 

Not being into the valley was a move comparable to the great men of BCL posed transportation problems not half as well understood. 

Organizational Structure, 1899-1914  

As BCL began its corporate life in 1899, the central fact of its existence was that Henry Smith owned a majority of the voting stock. This gave him the ultimate power of the initiative and the control over all major questions, although he usually deferred to Baker on financial matters, and also sought his advice on many other questions as well. Smith had watched BCL with a large foreign concern in the United States. Here was the company's biggest source of supply, and a major contributor of income and profit. Moreover, Smith had long since built up a large group of executive, many of whom did not receive a share of their income. 

On the production side at Harmony and Mason, Smith had the advantage of the sales Fred Corkhill, a member of the original Napa Circle, and the kind of executive with a good plant and a good name. To those who succeeded him as manager, the job of guiding the ship as Mason, of handling and exploiting new sources of one, and of selecting the construction of a major railroad. Associated with him on frequent assignments from Baker, Smith was John Noyes, superintendent of the works at Mason, and a man long on the Corkhill's side. Smith was also known to have been a reliable and trusted man. His men had been trained by Noyes, who was often called the "father of the industry."
worked at Bunker, would have much to do with laying out the company's 174-mile Tonopah and Tidewater Railroad, and eventually was to become chief engineer for American operations.

Besides the two refineries at Alviso and Boise, Smith maintained three sets of offices for marketing and financial purposes. The heart office in 1899 was in San Francisco, at 101 Sansome Street, where it remained until the earthquake and fire in April 1906. After that catastrophe, Smith transferred it to the Albany Block in Oakland, and about 1912 to the new Syndicate Building in that East Bay city, which Smith had had built to house his now-extensive group of enterprises.

In 1907, priority, the second office was in New York, under the charge of Chris Zabriskie. Third was the Chicago office, headed by Steve Marher, who did a remarkable job of developing the household package trade.

This is the major outline of the American organization at the time BCL was formed. At its head was F. M. Smith himself, who enjoyed certain advantages over Baker. He had voting control of the company. He possessed an outstanding group of associates, all of them with many years in the service. Their geographic distance both weakened the cohesion of BCL. In London, because of the slowness of communications to that day, and necessarily
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the testimony available to the American group. In London Smith the American side had a leader who had enjoyed a long hand from the time he had entered the industry. Smith was very much the classical figure of the commanding, his leading manner. He was not about to change the habits of a lifetime simply upon the emergence of BCL. Meanwhile, his British co-workers, H. C. Baker, who was the second administrator of Ruman Consolidated, was compelled to depend for his information upon the mails (before and after two-weeks work in the company's offices), and the occasional visit to urgent matters, and an annual tour of the American provision.

Clearly, communications were handled for Baker in managing the central office of a multinational company. However, despite the nearly autonomous character of Smith's management of the American operations, it must be noted that in the ensuing 25 years before Smith resigned from BCL and the subsidiary, PCL, Baker compiled an impressive record of accomplishments.

From the opening stages of the relationship between Ruman Smith and H. C. Baker, a theme in Smith's letters reflects his customary assumptions of complete autonomy. However, the theme was somewhat qualified by the nature of these letters, which frequently included detailed reports to Baker. Smith's proposal to Baker was that he attempt to acquire control of the American operations. In advocating the idea, Smith went on to express a sense of "gathering up" properties in the United States, which he had secured in his own name and his own responsibility, with BCL to take them over afterward "if they choose." 15

A little over a year later Smith brought out another idea that a new American company be created to take over the American BCL and the PCL portion of BCL's assets. In Smith's view, this would not affect Ruman Consolidated, but would provide him with collateral for borrowing purposes. Smith would then control the new holding company, which in turn would control BCL. In this way Smith would reduce his actual investment without loss of control. 16 What he seems to have had in mind was a form of "pyramidal" by means of holding companies. A year later, Smith raised the same proposal a second time, adding that he would go forward only if the Baker were fully in accord and it would involve no hardship for the American side. 17 In a subsequent letter, Smith described what today would be called a holding company, in the very wording used in 1931, as an entity, "that would stand in stocks of other holding companies, in that way exercising control with out full ownership. 18 By the end of 1931, he again modified his proposal, why not move BCL headquarters to New York City? This
would put the company in the center of the world's money market, and it might make no difference to Baker whether he lived in New York City or London—or so Smith thought."

Baker seemed not to have been enthusiastic about any of the various versions of Smith's idea, so his superior seemed to press the matter again, suggesting that an American company could be formed in taking over "the large holdings" (presumably his own) of BCL common stock. This would enable Smith to raise additional funds quickly, probably more than his primary purpose at all."

The theme of autonomy seemed to swell for Smith in another form toward the end of 1909. He had developed rather strongly to Baker that he had been lending BCL's surplus funds on the short-term market, making good returns in this way. As he described it, the idea was not to himself, to whom Oakland had experienced, and to banks. Following the death of Lafayette Hoyt Davidoff, BCL's sole legal counsel, who happened to be in town, Smith proposed that the BCL board pass a resolution authorizing him to make short-term loans with company funds, because such loans would earn more revenue. Given the possible conflict-of-interest problems implicit in these actions, particularly under English company law, Davidoff must have urged the directors' resolution as a means of protecting all interests. However, Smith could see no problems in their granting him "as free a hand in the direction of business.""

Baker seems to have resisted this proposal, for in his next letter, Smith told him that he had not wished to embarrass the board, and had not known that his proposed discretionary resolution allowing short-term lending or surplus funds, including anticipated forthcoming dividends, would make the directors personally responsible for any illegal actions.

The ultimate fate of F. M. Smith's proposed resolution is unknown. However, in a letter written in 1909, Smith refers to the requirements of the BCL board as regard his accounting procedures, noting that "I realize that I have drifted away from the requirements set forth by English authorities. However, it is done and done, and the situation is the same as the statement will show." Apparently the board did not fully approve Smith's lending policy, but did insist upon close scrutiny and full disclosure. In any event, the statements shown indicate a large degree of activity in 1909, including a 90-day demand note of $250,000 to Oakland Trust Company; a 60-day demand note of $1,000,000 to San Francisco, Oakland and San Jose Railway (Key Route); $50,000 to Henry Woodworth (another Nevada associate now involved in Smith's Oakland ventures); secured by 1,000 shares of Realty Syndicate stock (then valued at $100), $10,000 to Kernel A. Heron against a 60-day demand note for $50,000, and $100,000 to Lewis C. Huron against a 60-day demand note for $100,000. Woodworth was a director of Smith's last three years in Oakland, while Heron was president of the traction company, and Huron was both a director and Smith's staunchest associate in the Realty Syndicate. Heron's and Huron's notes, Smith stated, were fully secured at over double their value.

Thus Smith's animosity toward autonomy within the otherwise rather conservative practices of BCL, was due in his remarkable understanding of the economy, his keen vision, and his unappeasable hunger to expand and diversify his business interests. His more cautious British colleagues simply had never encountered a man like him and always had plenty of trouble trying to understand him. His predominant trait was perhaps the ability to judge new and promising fields. His personal net worth was usually less than that of his associates, but he seemed always to be a substantial investor in the business, and his individualism in the executive mold. His activities were often intermingled.

As a brother-in-law, Norman B. Ellis (who was very close to F. M. Smith in his last years and who understood him unusually well), once described him, he was "a natural leader," a man who built great enterprises largely on the heels of his own vision, the confidence of investors, his abilities as a builder, and his capacity for imaginative situations through which he could assemble the parts into the whole...those were the factors that made him great.
Oakland Junior Chamber of Commerce set aside October 26, 1933, as Founder’s Day. The choice of Francis Marion Smith as the first resident to be so honored and of the date were not accidental. No other man had ever equaled him as a civic leader, while October 26 was the anniversary of the beginning of operations by the Key Route 30 years earlier. At the commemorative luncheon, Mayor McCracken declared that Smith was one of the first to envision the possibilities of the great East-bay region, planning how the city could be served by a local transportation system and by vessels plying from its docks to the four corners of the world. The former postmaster, William Nee Brown, credited Smith with having given thousands of dollars to Oakland churches, to the construction of the YMCA building and to other benefactions. The publisher of the Oakland Tribune, Joseph R. Knowland, acknowledged that Smith’s “crowning achievement was his vision of a transportation system for the East side of the bay. He sowed the seed for the development of Oakland’s great harbor.” Knowland also said, on another occasion, “He was perhaps one of the first to envision a bridge to aid in crossing the bay. Out of his earlier dreams came the present reality—the huge San Francisco—Oakland Bay Bridge.”

Finally, Alfred J. Lundberg, who had rehabilitated the Key Route and then headed it as a prosperous concern, proceeded to introduce the crew of the first Key train from Berkeley to San Francisco, and the captain and chief engineer of the ferry Yerba Buena.

Lundberg then presented a plaque bearing a profile in bas-relief of Borax Smith and the 20-mule team, followed by a brief description which read:

FRANCIS MARION SMITH
"BOB SMITH"
Founder of the "Key Route"
Commemorating operation of the first train from Berkeley Station one o’clock p.m. on October 26, 1903—connecting with S.S. Yerba Buena for San Francisco. Edward M. Boggs, engineer of construction.
James P. Potter, superintendent.
PRESENTED TO KRY SYSTEM LTD ON THE THIRIETH ANNIVERSARY BY
ALFRED J. LUNDBERG
PRESIDENT

The plaque was designed by Andrew T. Hart and executed by William Gordon Hull. It was placed at the entrance of the Key System building on Broadway in Oakland, where it remained until the company was taken over by Alameda County Transit Lines.

So ended the long and creative life of this remarkably interesting and very complex man. Ultimately, he had received a measure of the recognition and appreciation that lesser men and women had so long desired him. Even in life he was restored posthumously to his rightful place. For through the leadership of Evelyn Smith, her brother George Ellis, and Henry D. Hoadley, the West End Chemical Company that Smith had founded survived to become a money-maker. On September 25, 1956, 25 years after Borax Smith’s death, the company was merged into the Stewler Chemical Company. The aggregate price paid for the outstanding West End common and preferred shares was slightly over $27 million.

One likes to think that somehow, somewhere, Francis Marion Smith is aware that in the end his family was cared for, and that by his courage and foresight he had finally gotten back to his own.

What Survives of the Physical Legacy of F. M. Smith?
As a builder, F. M. Smith had made a substantial impact upon his times. What remains a half-century later?

Within weeks of his death in August 1931, the long-abandoned borax refinery at West Alameda was torn down. Because it had been built of reinforced concrete, dynamite had to be used to accomplish the job. Next came Oak Hall and the remnants of Arden Villa. In January 1932, the wrecking crew arrived with hammers, mauls, and axes. Within days, the magnificent house with all of the splendor of its interiors of rare woods was reduced to wreckage, with nothing saved in its original form. Today all that remains to remind one of the past is the great line of desert palms along 9th Avenue, and some of the former cottages of the Mary R. Smith Trusts. Where the beautiful gardens once surrounded the big house, there now exist countless shabby apartment buildings and small stores.

Precidio suffered a similar fate. The splendid hum and lookout tower burned in 1930. The house itself gradually became run down, and then was badly damaged by the hurricane of 1938. At that point, Evelyn Smith decided to have it torn down. After World War II the lands were sold and subdivided. All that now remains is the long sea wall that F. M. Smith had had built at the edge of Smith
Cove, the little Japanese bridge, and the tiny summer house at Cedar Island. Strangely, his boyhood home in Richmond, Wisconsin, still survives in excellent condition. While the "old red house," that grew stand where Oak 1 Hall was located can still be found on Lake 29th Street, near 8th Avenue.

Also within the Oakland area, the beautiful little Key House Inn, one of the best known in the United States, has been taken down in August 1962. In spite of its present state, the Fullerton Building is still standing. On the grounds of Mill College one can see the handsome red-brick buildings that originally housed the Smith Academy, and next to it the village by Mr. and Mrs. F. M. Smith in 1869. In the center of town, the sturdy old Smith's Hotel stands, nearly renovated and in excellent condition.

The fate of the Key House was a bit more complicated. Having stood building, and 21-cent gasoline in the 1920s, changed the financial fortunes of Smith's old company. F. M. Smith had intended when he started the project in 1935, that it would not sell at all and that it would continue to be used as a railroad hotel. But its sale and failure were the result of the market conditions, and the original terminal had burned in March 1935, and the students' train depot had been replaced by 1937, when the students' train depot was used only for the surveying rail system itself. Indeed, in 1944, the Key took over parts of the Southern Pacific's electric lines when the major part of the town was abandoned. Thus the Key, itself, finally won in the long struggle that began back in 1910, in Bakersfield of Smith's time.

But the company could not withstand the flood from the continuing automobile revolution, which was sweeping across the United States. In 1946, in the city of Long Beach, the original terminal was pulled down, and the students' train depot had burned in March 1935, and the students' train depot had been replaced by 1937, when the students' train depot was used only for the surveying rail system itself. Indeed, in 1944, the Key took over parts of the Southern Pacific's electric lines when the major part of the town was abandoned. Thus the Key, itself, finally won in the long struggle that began back in 1910, in Bakersfield of Smith's time.

F. M. Smith's other great accomplishment was to make his name and fame an important part of the history of the Los Angeles Harbor Department. He was a true pioneer in the field of transportation, and his work is still remembered for its lasting impact on the region. The Key, itself, finally won in the long struggle that began back in 1910, in Bakersfield of Smith's time.
CHAPTER IV.

STRIKE A MINE ON THE MARK

The people engaged in the forest have now seem to have been as busy, each returning to his own particular work or claim as in the early days, but no attention was given to making historical records in the matter. At least, that is the impression I received in talking with them, for facts about the mining of early prospectors in Nevada, who are not now in the business, are very hard to get. However, it appears that as early as 1860, N. Verch, the California horse trader, had found traces of the salt in Meo Lake, in the Nevada basin; from which, W. W. Young, of Virginia City, began to look out for mercury. In 1861, however, he sold his horse in neighboring silver area, and went on the Drakes' ranch near Tonopah, Nevada, and a band of his, now well-known in the trade as the lo, as the field of some, was found there, though a limited little venturing. In 1862, however, a teetotam in the desert region near the Washo mine was found a claim found in the north of the state, where the horses of time were very much needed in the production of mercury. A promising alley was reached early for the place where it had been picked up.

In 1863, however, the Virginia City mining company had previously mentioned, found some veins which form a mine without water. From them, some of the silver, and carrying some to them, they found a wash-fat of a vein which
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In 1852, I found myself among the wood camps about ten miles from Columbus. We had been following mining camps from Montana to Helena, from Helena to New York, and New York to Boston, and back. During this time, like most men who follow mining camps, I had engaged in every vocation pertaining to mining. The chief object of the camp, besides the prospecting, is to find a good mine. In this seeking, the most arduous part, all available means and resources are accepted for the time, but only as incidental to the one object. I had recently been engaged in learning, constructing, the delivery of wood to the mills, and lumber to the mines.

I then owned two of these small ranches, and a herd of pack animals, and I had also accumulated the usual number of field and camp rations.

But little before the discovery of the March, I had bought a small ranch of a fellow woodsman, and by the help of a year's work on my own, I had erected a good, comfortable cabin in a barren valley, commanding a fine view of the surrounding country. This view from the adjacent mounti

of pack animals, and I had also accumulated the usual number of field and camp rations.

But little before the discovery of the March, I had bought a small ranch of a fellow woodsman, and by the help of a year's work on my own, I had erected a good, comfortable cabin in a barren valley, commanding a fine view of the surrounding country. This view from the adjacent mounti
light, which appeared, after following large snails, but quite invisible in surface water. The pumping had
been halted here, but I had very little knowledge of
the business.

"One morning, immediately after my cabin was com-
pleted, I heard some one calling me from the
shrubbery. Upon going out to examine, I found a
Mexican working in the curios designated and described as my property. He refused to leave when I ordered him off the premises, and I held him a few days by the hands. He was accompanied by another
Mexican and a white employee. I soon found that they
intended to forcibly dispossess me. The nearest officer of
Court of Appeals was at Annapolis, the nearest, was at
Washington, and the only convenient means of authority
was by the pike, I had no weapons, and knew about arms
were of little use. I went immediately to a fellow workman,
also in the vicinity, who owned a shotgun, and found
that the weapon was of Columbus, an old hand. He
went out with me for it, and I returned the night in my
cabin with the firearm, and only fourteen rounds, all of
which I carried with me. I found the Mexican had increased
his gang and had been burning down a few shacks of
pine trees in front of my cabin door, and had several
strands of wire neatly piled up in place of the trees I had
admired. My chopper told him we were in full force, and
intended to bring in a posse from the morning, to carry
out the word they had spoken.

"We breakfasted early the next morning, and my chopper
took him as, and went in the under some distance
away, in order to prevent any assistance in maintaining
my rights, and did not ask him to help me.

"I now heard the ringing of the bell worn by the bell-
nower which usually leads the train, and took my position
on

the Broadway, just out of what appearing strange with small
snails, and wanting yard from the woods, that the
train appeared, and I counted twenty or so Indians,
four Mexicans, one Indian, and one white man. Then
reaching the number, two Mexicans alighted, and took one
of the animals and led it to the point of wood, and began to
load

"In loading the supplies, it is customary to put in a big
rock first. This wood was green and heavy, and it took
moments to handle the large sticks.

"They had cows on which we leaned up the hill, but I told
about nothing to them, and they began to load, when I called
out, "Hold on there, don't load that wood, and take him
with my rifle. At this time the Mexican dropped his
and of the horses, instead of chainman to take it up,
through verbal by his companion on the hill. Both
replied to my challenge with abundant laughter. I pointed
in my demand for them to "clear," and, after plenty of
talking, one of the party began to approach, saying he
wanted to talk with me.

"As he stepped forward, I stuck my arm out, and said
he had him held on. He stepped forward, but did not
step near me. This was repeated several times. I knew
I had my ammunition to waste, and that if I discharged
with their horses and people I could do nothing. I never
the number less.

"They finally offered to compromise by taking the wood
they had chopped. I replied, they had no business to chop
in my cabin, and that I would, now it was chopped. I
shoved my ground with the rifle, and they stopped, and, as a
final result, the train of twenty or so Indians, four Mexicans,
and two helpers, turned around and retired empty-handed,
leaving me in possession.

"The next day they went a negotiation from Columbus to
The steamer was in sight. The wind was blowing an east
and the waves were running on the beach. In
the distance, we could see the town and
people gathering on the shore. I had, of course, left
the building to meet up with the rest of the
crew.

As we approached the shore, I decided
to take a walk along the beach.

The beach was beautiful, with
white sand and clear blue
water. The sun was shining,
and the air was fresh.

After walking for a while, I
returned to the
building and
continued with my
work.
the product was for home market, with no ambition of export.

"We were compelled to reduce the property, and to secure the co-operation of all our friends, taking their names as covenants, and upon themselves getting deeds from them for their claim. The purchase-money amounted to the large sum of money 1000 loll, and not above their gifts." Though fully aware of the difficulties of the deposit, they did not give high value to their interests, and perhaps it was not that the less money they had the better off they were. I made a deal with one of them, giving him a word to check for his interest. The other wanted more, for his claim, which I thought and turned over to one I supposed would be a desirable party. He passed a portion of the money to one, and apparently to others. This was only recovered after long delays and much trouble. At one time as many as seven hundred came into the bush and took forcible possession, standing with guns in hand behind their habitations. They had paid on the bank land; these numbers assisted them to retain each other, and I gave up the idea. I left in quest for the mark for my settlement.

"As soon as possible I made arrangements through my brother, with a Chinese company, to put up a plant, and the production of sugar was begun. Sugar was then first known beyond the immediate borders, and was costly, being sold at 200 dollars per ton. The local consumption in the United States we soon learned, was but 100, which was very small, for before we could send any to market, it fell to 10 dollars a ton, which was all we produced."

"I have lived in the bush since then, because it is an important article of necessity, and, by means of the great reduction in price, a household staple of national use. It is now simply
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The 2.363

...
REMARKS

I hereby agree to locate and erect this building or structure and every portion thereof, except unenclosed porches, back a distance from the front property line equal to the setback line of the nearest building now erected on any lot in this block in Zone "A" or "B" on the same side of the street.

Owner:

300 Market Street
(I'm sold)

APPROVED BY
Board of Harbor Commissioners
JAN 22 1904

[Signature]
FOR DEPARTMENT USE ONLY

APPLICATION
CONSTRUCTION
ZONING
SET-BACK LINE
ORD. 33751 (INT.)
FIRE DISTRICT

O.K.
O.K.
O.K.
O.K.
O.K.
O.K.

REMARKS

I hereby agree to locate and erect this building or structure and every portion thereof, except the enclosed portion back a distance from the front property line equal to the set-back line of the nearest building now erected on any lot in this block in Zone “A” on the same side of the street.

Owner.

Attached hereto and made a part hereof are two maps:

Map No. 1, showing property of company with the position of wharf thereon, also position of piles in wharf.

Map No. 2, Detailed plan of proposed wharf and shore depths of pile penetration prepared for.

[Signatures]

[Date]
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Remarks

APPROVED BY

Dec. 3, 1998
All Applications Must be Filled Out by Applicant

DEPARTMENT OF BUILDING AND SAFETY

Application to Alter, Repair or Demolish

To the Board of Building and Safety Commissioners of the City of Los Angeles

I hereby apply for a Permit to Alter, Repair or Demolish the building or structure described below. I certify that the application is correct to the best of my knowledge and belief. I hereby authorize the City to verify any building or alter any existing building by examination or by any other means. The applicant shall pay all costs of the examination or any other means. The examination or any other means shall be made at the request of the applicant. The applicant shall be liable for all damages to the property or any other means caused by the examination or any other means. The application shall be signed by the applicant or the applicant's agent.

Applicant's Name: ____________________________
Address: __________________________________________
Phone: ____________________________

Building or Structure: ____________________________
Location: __________________________________________

Date: ____________

Signed: ____________________________

APPROVED BY

[Signature]

[Position]

[Date]
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All Applications Must be Filled Out by Applicant

DEPARTMENT OF BUILDING AND SAFETY

Application to Alter, Repair or Demolish

1. What purpose in the present building is used for -- REFINERY
2. What purpose will building be used for in the future -- REFINERY
3. Owner's name -- PACIFIC COAST OIL CO
4. Address of building -- 1913 GENERAL BLDG
5. Architect's name -- ALBERT H. MURPHY
6. Contractor's name -- WOOLMAN
7. Description of work -- REPAIR ALUM. CLADINO
8. Validation by Building Official -- $10,000.00
9. Class of permit Building
10. Number of rooms in building -- 16
11. Number of stories in building -- 1
12. State how many buildings are on this lot
13. Buildings on this lot

STATE ON FOLLOWING LINES EXACTLY WHAT ALTERATIONS, ADDITIONS, ETC., WILL BE MADE TO THIS BUILDING

14. Description of alteration or addition -- REPAIR ALUM. CLADINO
15. Owner of property to which permit is issued -- ALBERT H. MURPHY

Permit No. 2275

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<tr>
<td>Construction</td>
<td>O.K.</td>
</tr>
<tr>
<td>Zoning</td>
<td>O.K.</td>
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<tr>
<td>Setback Line</td>
<td>O.K.</td>
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<tr>
<td>CBO 33781 (N.S.)</td>
<td>O.K.</td>
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<tr>
<td>Fire District</td>
<td>O.K.</td>
</tr>
</tbody>
</table>

**Remarks**

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I have carefully examined and read the above work, and know the same in form and content, and that all provisions of the Ordinance and Laws governing Building Constructions will be complied with, whether herein specified or not.

(Sign here) [Signature]

[Designated Agent]
### Application to Alter, Repair or Demolish

**CITY OF LOS ANGELES**

**DEPARTMENT OF BUILDING AND SAFETY**

**BUILDING DIVISION**

**Application to Alter, Repair or Demolish**

To the Board of Building and Safety Commissioners of the City of Los Angeles,

The undersigned for the building named above and described with the improvements specified hereto, hereby requests that the permit issued by the said Department of Building and Safety therefor be vacated and cancelled, or, if not held, be voided, for the reason that the said building is not to be used for the purposes for which it was originally designed.

The undersigned further requests that the said Department of Building and Safety may grant permission to alter, repair, or demolish the said building as herein specified.

The undersigned hereby represents and warrants that the undersigned is the owner or agent of the owner of the building or property described above and hereby agrees to indemnify and hold harmless the City of Los Angeles from and against any and all claims, losses, expenses, or liabilities arising out of or in connection with the alteration, repair, or demolition of the said building.

**Removed From**

- **Type of Building**:
  - **Location**:
  - **Block**:
  - **Lot**:

**To Remove To**

- **Type of Building**:
  - **Location**:
  - **Block**:
  - **Lot**:

**Please Verify**

- **Owner's Name**:
- **Owner's Address**:
- **Architect's Name**:
- **Contractor's Name**:
- **City**:
- **State**:

**The undersigned hereby agrees to indemnify and hold harmless the City of Los Angeles from and against any and all claims, losses, expenses, or liabilities arising out of or in connection with the alteration, repair, or demolition of the said building.**

**Signature**

**Date**

**Note:**

- The form is to be filled out in ink or indelible pencil.
- Any alterations or additions should be noted on the form.
34. Size of new additions: ____________________ No. of stories in height: ____________________ Size of Lot: ____________________
35. Material of foundation: ____________________ Size of water: ____________________ Depth below ground: ____________________
36. Size of Redwood Doors: ____________________ Size of interior heating stove: ____________________
37. Size of exterior doors: ____________________ Size of interior non-heating stove: ____________________
38. Size of first floor rooms: ____________________ Second floor rooms: ____________________
39. Will all framing and finishing comply with Ordinance? ____________________
40. Will all provisions of State Housing Act be complied with? ____________________

I have carefully examined and read the above blank and have the same in true and correct form, and that all provisions of the Ordinances and laws governing Building Construction will be complied with, and that I am properly qualified.

(Sign here) ____________________

FOR DEPARTMENT USE ONLY

| APPLICATION | O.K. |
| CONSTRUCTION | O.K. |
| ZONING | O.K. |
| SP-1 BACK-LIN | O.K. |
| O.S.A. (N.R.) | O.K. |
| FIRE DISTRICT | O.K. |

REMARKS

APPROVED BY

[Signature]

[Date]

APPROVED

[Signature]

[Date]

Note: Subject to condition.

Continued in accordance with

[Signature]

[Date]
To the Honorable
The Board of Harbor Commissioners

SUBJECT — Application for Building Permit —
Pacifica Coast Power Company

Gentlemen:

Please find attached building permit, requested by the Pacifica Coast Power Company, and would recommend approval of same under the conditions that this agreement shall not be construed to acknowledge ownership or property rights to property herein described, other than those specifically herein set forth, and shall not be construed as a limitation of property interests in any manner whatsoever.

Very truly,

J. W. Standish,
Acting General Manager.

Attachment —
Woodman, Seth C.
The story of the Pacific Coast Borax Co., Division of Borax Consolidated, Limited
2.0 Response to Comments

Port of Los Angeles Master Plan Update

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THE STORY OF THE PACIFIC COAST RUBAN CO.

Los Angeles Harbor Department

The story of the Pacific Coast Ruban Co.

In the late 19th century, the demand for ruban (a type of fabric) began to increase in the United States. The company founded by Samuel Thomas, a former employee of the Pacific Coast Bank, saw an opportunity to capitalize on this demand.

Thomas had a vision of creating a business that would produce high-quality ruban for the American market. He believed that the key to success was to source the best materials from around the world. He began by importing ruban from Japan, where the quality was consistently high.

Thomas's business grew rapidly, and soon he was able to expand his operations. He built a factory in Los Angeles, where he could control the quality of the ruban from start to finish. The factory quickly became known for its high-quality products.

In addition to his business success, Thomas was also known for his community involvement. He was a strong supporter of the arts and education, and he donated generously to local schools and cultural institutions.

Despite his achievements, Thomas remained humble and down-to-earth. He was often seen working alongside his employees, ensuring that every detail of the production process was handled with care.

The success of the Pacific Coast Ruban Co. continued for many years, and it remains an important part of the history of Los Angeles. The company's legacy lives on today, as a reminder of the importance of hard work, innovation, and community involvement.

Los Angeles Harbor Department
The discovery of borax in the United States is attributed to a man named Solomon Southard, who discovered it in 1849 near the town of Soda Springs, California. Southard was a miner who was looking for gold and silver, but instead found a new mineral that he named "borax." The name comes from the Greek word for "fire," as borax is known for its ability to absorb moisture and prevent the growth of fire.

The first known use of borax was in the 1850s, when it was used as a cleaning agent. It was later discovered that borax had many other uses, including as a water softener, a fabric softener, and an insecticide. Today, borax is used in a wide range of products, including detergents, paints, and cosmetics.

The discovery of borax in the United States was a significant event in the history of mining and industry, and it helped to shape the development of the western United States.

The discovery of borax in the United States is a testament to the importance of mineral exploration and discovery in the development of the United States. It is a story of perseverance, ingenuity, and the power of discovery to shape the course of history.
The Discovery at Teel's Marsh

During Johnson's stay, he had just returned to the town where he had been working as a laborer. The town was located near the coast of California, and it was known for its beaches and natural beauty. Johnson was eager to explore the area and had been looking for a place to settle.

One day, while walking along the beach, Johnson noticed a group of men digging in the sand. They appeared to be searching for something. Johnson approached them, and they invited him to join them.

The men explained that they were prospecting for minerals. They had found evidence of gold in the sand, and they were hoping to find more. Johnson was interested in their work and decided to join them.

Over the next few weeks, Johnson worked alongside the men, helping them to dig and sort through the sand. He learned a lot about prospecting and gained valuable experience.

Eventually, Johnson was able to find a small deposit of gold. He knew that he had to act quickly, as other prospectors were already interested in the area. Johnson took the gold and went to the nearest town to sell it. He was able to make a tidy sum.

Johnson's discovery was a turning point in his life. He decided to stay in the area and continue prospecting. He became one of the most successful prospectors in the region, and his story inspired many others to follow in his footsteps.

From that day forward, Johnson was known as a prospector with a keen eye for gold. He continued to prospect in the area, and his name became synonymous with success and wealth. His story is a testament to the power of hard work and determination.

In conclusion, the discovery of gold at Teel's Marsh had a profound impact on Johnson's life. It provided him with the financial stability he needed to pursue his dreams and continue his career as a prospector. His story serves as a reminder of the opportunities that lie waiting for those who are willing to work hard and take risks.
Cotton Ball

Smith's first act, after filing his claims to Tent's Match, was to ask his brother, Julius, to become his partner. Julius Smith entered the Chicago firm of Stoney Bros. in the enterprise, and the firm was known as Smith & Smith. Stoney Bros., Inc., by this time, was a well-known company, and the firm of Smith & Stoney Bros. was formed and production at Tent's Match began.

The manufacturing process was relatively simple. At the outset, the crew at the works consisted of the Smith brothers and two men named Frank Smith had picked up in Columbus. One of these men was John Ryan, whose name has come down in history.

None of them knew much about making matches. Costs were high.

All supplies had to be hauled seventy-five miles across the desert from Columbus. The output of boxes from the phosphorus plant at Columbus was not enough to meet the demand, and before the Smiths were able to sell any of their product, the price increased threefold, and the price went up as high as twice the original cost. The firm of Smith & Stoney Bros. sold its interest to the Smiths, and the firm from then on was known as Smith Bros.

Smith shipped his boxes to William T. Coleman & Co., of San Francisco. The firm of William T. Coleman was one of the largest companies in the country, and it was estimated that they had a price control on the market. Coleman & Co. had established a commission house and with their knowledge of the market, they were able to keep the price high enough to make a profit.

In addition to the production of matches, Smith & Stoney Bros. also produced paper boxes. The company produced a variety of boxes, including match boxes and cigar boxes. The company was able to keep the price of the boxes low enough to meet the demand.

The company was able to meet the demand for matches, and the price of boxes continued to rise. The company was able to keep the price of the boxes low enough to meet the demand, and the company was able to keep the price of the boxes low enough to meet the demand.

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THE STORY OF THE PACIFIC COAST BORAX CO.

In 1873 the Smiths, who had been living in Utah for many years, decided to move to California to start a new life. Despite the challenges of the journey, they arrived in Los Angeles with high hopes for a bright future.

The Smiths soon realized that the area was rich in minerals, particularly borax. They began to explore the local geology and discovered a deposit of high-quality borax ore. This discovery marked the beginning of their journey towards establishing the Pacific Coast Borax Company.

As they worked to extract the borax, the Smiths encountered numerous challenges. The remote location and harsh weather conditions made it difficult to transport the raw material to market. However, their determination and hard work paid off.

In 1880, the Smiths opened their first borax mine, and their business began to grow. They soon expanded their operations to include other minerals and minerals, diversifying their product line and increasing their market share.

The Smiths continued to face challenges, including competition from other mining companies and changes in the marketplace. However, their innovation and adaptability allowed them to remain competitive and thrive.

Today, the Pacific Coast Borax Company is still a leading producer of borax and related products. The story of the Smiths and their journey to success serves as an inspiration for those seeking to achieve their goals through hard work and perseverance.
Death Valley

The Valley was created millions of years ago by a combination of different tectonic forces. The story of the valley begins with the formation of the Basin and Range Province. Over millions of years, the Earth's crust began to stretch and crack, forming a series of fault lines and grabens. In these areas, the rock became thinner and more susceptible to erosion by wind and water. The result was a landscape of deep valleys and high plateaus, creating the unique topography of the Basin and Range Province.

As the forces continued to work, the Basin and Range Province began to sink, creating a depression that eventually filled with water. Over time, this water evaporated, leaving behind a vast desert landscape. The Valley is a prime example of a desert ecosystem, with a harsh and unforgiving climate that testifies to the strength of nature's forces.

The story of the Valley is a testament to the power of natural processes, and it serves as a reminder of the constant evolution of the Earth's surface. The Valley is a place of beauty and wonder, a reminder of the incredible forces that have shaped our planet over millions of years.
The Story of the Pacific Coast Iron Works

In the valley with its golden sunshine they stripped up some cotton, then raised the ground near by and planted cotton, then turned back to their camp to make the cloth.

As the sun dropped behind the mountains, a large section of Alameda, a village some miles from the city, was lit up by the sun. A man at the window said: "The sky is green, the air is sweet, the world is right!"

Winters didn't sleep at night, nor eat, nor anything else. He was a lawyer in the city, but he took a lease on an estate with the County Recorder. He just gathered up a crew of carpenters and foremen and entered the town. William G. Colman in San Francisco with a few weeks a Colman representative, William Robinson, appeared in Ash Meadows.

When Robert B. in San Francisco, a man inspecting the herd deposits in Death Valley, he handed back Winters a check for $550,000.

The news of Winters' discovery reached Robert B. in San Francisco and received the following telegram:

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The Twenty Male Wagons

When the blueprints were finished they called for wagon wheels 5 feet high and from wheels 6 feet high, each with steel-treaded tires 6 inches wide and 1 inch thick. The beds were 8 inches in diameter and 4 inches in length. The wheels, approximately measured 5% inches wide at the hub and 4 inches wide at the point. The axles were made of solid steel, 39% inches square. The wagon beds were 4 feet long, 1 foot wide and 2 feet deep. Each wagon—empty, weighed 8,000 pounds. Loaded with 1,000 pounds of weight would weigh 9,000 pounds. Two such loaded wagons, plus the weight of the water tank, which held 100 gallons and weighed 9,000 pounds, made a total load of 21,000 pounds, or 35% of the weight.

The best was always to soon a wagon. That there were no roads is proved by the fact that in the few years they were in constant operation it was not until they broke down. In the only 5 years that they have been standing since, in the desert and dry air of Dead Valley, they have not fallen apart. They have turned the United States appearance of World Fairs and State Expositions, rolled along city streets in parades, and in 1937, fifty-two years after they were built, two of them traveled the original route from Dead Valley to Mobe in behind a twenty-mile column—again without a break-down.

While the wagons were being built, others men tackled the prob-
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been of the past itself. To reach the western end of Death Valley and the gate to the Panamint, the teams would have to pass the salt bed known today as the Devil's Golf Course. As surface water percolated into the ground below, 6 inches in depth, it had risen to the level of the pool and the elevation of the area, where the water was 15 feet high. To reach the basin of the Panamint, the route was to follow the bed of the river, which was the only route to the Panamint. The river, a dry bed, had been cut by the wind, leaving a dry bed of sharp rocks and sand. The route followed the river instinctively.

When morning came, the herd of mules turned and hauled the wagons on the river's bed. To continue on this path, the two-wheeled, low-wheeled wagons were pulled by the mules on the river's bed, which was the only route to the Panamint. The river, a dry bed of sharp rocks and sand, was the only route to the Panamint. The route followed the river instinctively.

The twenty-four mule teams were actually not twenty-four mules but eighteen mules and two horses. Experience proved that it was advisable to have a pair of fine, strong, healthy horses at headquarters. In the mountainous country, the wagon would break into position, and the horses would run back into position. In the mountains, on either side of the wagon, from the mulesened, sty of the country, the wagon would return to its position, and the horses would run back into position. In the mountains, the wagon would break into position, and the horses would run back into position. In the mountains, the wagon would break into position, and the horses would run back into position. In the mountains, the wagon would break into position, and the horses would run back into position. In the mountains, the wagon would break into position, and the horses would run back into position.
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The Calico Mine

The men who worked at the Calico Mine were the mine's employees and the many others who worked on the mine. The camp itself was built in a valley. The few brick buildings have long since been abandoned, but the remains of the camp and its mill are still visible in the mountains, which many of the men made for themselves as living quarters—smaller than the Company's bunkhouse.

The Company's bing was a stagecoach, and it brought the workers to and from the mine. Each ore cart was hauled by a horse, and the men worked in shifts, two men per cart, to keep it moving. This was the Smith House, used by the president of the Company and other officials on their occasional visits in the camp. Next to the store was a small building known as the sleeping room—provided, according to W. W. Cochrane, the stockman, was to charge. At some time the sleeping quarters were used by the Company. The post office was housed in the Post Office Office of Denver in the latter years of the camp, after the railroad was built. The track was opened in 1876 and was completed in 1877, having been constructed at a cost of $500,000. The miners were paid in silver or gold, and the mine was a prosperous one. It was known as 'The Old Gold.'
"Old Dinah" was a traction engine which Smith purchased, together with two ore wagons. Dinah burned coal, and she had a voracious appetite. A man had a half a ton of coal on the daily run for the round trip between the railroad and the mines. On board, loose ground Dinah charged along comfortably at a speed of 21/3 miles per hour. But when she faced a steep grade of 14 per cent, like climbing a bar of soap, the whole car would yearn up like a bucking horse—even with half a ton of ore being loaded on it.

It took three men to handle DINAH on grade—an engineer, a fireman, and a brakeman. It took a mechanic all night to put her in shape for the next day's run. At the end of a year, Dinah was abandoned, and the mines went over the side night. She stands today, as a monument piece, at the entrance to the Furnace Creek Road.

Since Smith's railroad was not used for the transportation problem, he decided to build a railroad from the main line to the mine. He also built a pier in connection to the sea before shipping it to Alamosa. This railroad, known as the Huerfano & Aguileras, produced the wagon road down the way. A short distance out of Aguileras, at a station called Mexican, a large modern structure was erected.

The railroad was completed in 1894. The single line out, the great freight wagons were then retired for a time. Their record of not a single freckle still held.
The Founding of the Pacific Coast Borax Company

The discovery of borax in the San Bernardino Mountains in 1875, which led to the founding of the Pacific Coast Borax Company, had a significant impact on the growth of the city of Escondido. The company was founded in 1878 by Don Miguel Iturbide and his business partner, Jose Alvarado, who were both partners in the Los Angeles Borax Co. The company's operations were based on the discovery of large deposits of borax in the mountains of Escondido, which were eventually expanded to include other areas in the region.

The history of the company is marked by a number of key events, including the establishment of the company's first mill in 1879, the expansion of operations to include mining in other parts of the state, and the creation of a network of distribution channels to reach consumers across the country.

The company continued to grow and expand its operations, eventually becoming one of the largest producers of borax in the world. Today, the company remains a major player in the industry, continuing to produce borax for a variety of uses in industries ranging from agriculture to medicine.
The Formation of
Borax Consolidated, Limited

In January 1882, a New York office of the Pacific Coast Borax Company was opened at 14 Wall Street. B. W. Mathes, who had been president of Smith's Pacific Borax Salt & Sulphur Company and Columbus Marine, was in charge. He acted as Smith's sales agent in the east. It was a very busy office. Mathes's wide experience in the borax business, his excellent personal reputation, and his banking connections in New York, were helpful to Smith.

In 1883, Mathes's son, Bertram, joined the Company as advertising and promotion manager. In the opinion of those who know Smith, Mathes' later friend and Director of the National Park System—was one of the greatest experiences in the country, having been in the middle west, impressed by the idea for package borax, but he became convinced that this potential market had never been tapped. He put the proposition up to Smith, and as a result, a Chicago office was opened in the fall of 1883. Young Mathes remained in charge of it for the next two years, when he was reinstated in the borax business in the west. He was responsible, among other things, for the use of the "20 Mule Team" at the smelting plant of the Pacific Coast Borax Company.

Smith, unfortunately, tended to clash with his employees. Like Schmitz before him, he began to consider the business interests.

In 1884, in partnership with Frank C. Minor, he started the Realty Syndicate and located some 5,000 acres of valuable and in Oakland to develop that real estate project (success, noted the Daily Commercial Bulletin). With this in mind, he had started, as early as 1883, to buy up and consolidate various adjacent farms, which were later to become part of his fortunes. Called the "20 Mule Team System of railways and ferries.

In the summer of 1885, Smith sailed for England. Since his American mother, in these last fallen off, he was anxious to find a possible American outlet for his product. In Europe, his trip was a financial success. Gustave Goree, then a vice-president of the Atchison, Topeka and Santa Fe Railway Company of San Francisco, going to England for a visit. On June 70
The solicitation of companies was arranged between Smith, Baker, and Company. In the time they posted late that night, a contract had been drawn up, providing for a merger of the two interests. The resulting company was called the Pacific Beat and Railroad Co., and on August 28, 1896, the president of the Pacific Beat Company agreed at a meeting held to sell its interests—lands, buildings, and machinery—to the new company and its productions of alumina in the new company. A few months later, Franklin, Senate, a man skilled in business and an excellent organizer, joined the new company, called Baker, Smith & Co., for an enlarged plan was to plan a major part in directing the company's affairs, and the views of Franklin and Senate are now active in the present form.

One of the first decisions by the heads of the new company was to build a factory in the New York area, in order to meet eastern tastes and imports on their own ground. A site was selected in Oyster, New Jersey, and construction started in 1897. It was a relatively short move, but by the time the building was completed in 1898, it had proved a wise one. With the new factory at Martha's Vineyard, its products were now available to the eastern market at lower prices, and the new company enjoyed a surge of new orders. It was this period of rapid expansion that was the greatest challenge for the company.

Smith's brother, a native of San Francisco, moved to London. The new company soon became a major player in the alumina market, and Smith's brother helped to establish a strong presence in the American market. In fact, Smith's brother's efforts helped to establish the company as a major player in the American market, and the company soon became a major player in the American market.

The new company was able to keep up with the demand for alumina, and the company expanded its operations to meet the growing demand. The company continued to grow and expand, and by the turn of the century, it was one of the largest companies in the industry. The company's success was due in large part to Smith's vision and leadership.

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Building the Tonopah and Tidewater Railroad

By 1875 it was evident that the mine of silver was moving eastward. It would be necessary before a mining town could be developed. The logical choice was the Lita C., located just a few miles out.

The Lita C., named for a daughter of William T. Coleman, lay east of Baker Valley, about 150 miles from the mining district. To regularize these mines smaller railroad would have to be built.

When Senator William A. Clark of Montana heard of Smith's plan, he suggested that Smith come west with the Union Pacific then known as the San Pedro, Los Angeles and Salt Lake Railroad, at the eastern point of Las Vegas. By running a spur up from the Lita C., they could handle some profitable freight business from the booming camps of Tonopah, Goldfield and Rhyolite. Clark, himself, had a substantial stake in Rhyolite. There was an written contract with the Senator late in 1875 for the Tonopah and Tidewater Railroad, substantially identical to the T & T, was organized as a subsidiary of Union Consolidated, Limited.

In May, 1875 Smith right-of-way men, John Ryan, together with a young surveyor by the name of Clarence King, and W. W. Cahill from Houston, arrived in the town and began setting up headquarters in a tent. Ten miles of grade were laid completed. The next step was to connect the main line. To their astonishment, they met with a curt refusal from a top official of the Clark line.

When burned up the woods in Utah and in Nevada, the Senator was equipped with a railroad from Las Vegas to the mining district itself. As a matter of fact, he was going to build the railroad himself.

The mine of silver was moving eastward. It would be necessary before a mining town could be developed. The logical choice was the Lita C., located just a few miles out.
would probably be on the point where the last set of tracks reached the mine. The Union Company, in a spirit of fairness, would naturally want to know that time. Again, the wagon from Death Valley was loaded up, and when the T & T passed through the town of a third community, twenty main streets had the roses from the Lilac to the Patience Company railroad.

In the second year of the Death Valley Railroad the third year of the railroad, which was finished on August 20, 1877, was a year when the company started building and laying the first line from the Salt Lake to the East. The twenty miles eastward included clear land of high elevation across the desert.

With the Lilac station being built and the railroad ready, the men of the railroad and Monitor, who formed part of the company’s first line, were building up the country’s first line. The road in the section was abandoned, buildings and machinery were removed, and everything usable shipped to the Lilac. The tracks of the Antic & Daggett Railroad were ripped up and sold.

The first full-length run of the T & T from Antic to Daggett—sixty miles—was made in December 1877. The prospect of profitable mining, however, had dimmed. The price of silver had declined by ten dollars during the year. The year 1877 witnessed the collapse of the metal mining industry. The year 1878 was the beginning of the end of the great boom on the Nevada Desert. For the next two decades it was the end of the mining era, but it was the beginning of a new era. 30
The Lila C.

Across the harbor from Death Valley Junction, seven miles away, there were white clouds against the blue-sky blank sky. There were the rolling hills of the Lila C.—all that is left, though she

There was never much there in the city of buildings; the mill on one side of the tracks and on the other the town of Ryan, named for John Ryan. It was the site of later houses and the Company store, boardinghouse, and machine shop. As at Forte, many of the men lived in tents in the mountains.

The company made making of the way of operation. The Company was provided the railroad came from Death, but the men who were all of them right down passenger to play cards or just sit.

Music was more popular. Eleven of the men—four of them Cornish brothers each playing a different instrument—organized the Death Valley Drum Band. The band had a piano, and Young Fred Clark, one of the former steammen at Forte, wassupervision of the band at the Lila C. gave at its parlor recital to the Brooks at Forte, the band was provided with a cornet. The cornet proved the most popular, if not the first key of all. The result of a hot and long train on the TTT and from the main in a van, but hot was improved a couple of years later, when one of the women in the camp took over the cornet, and added to its range.

By the end of 1922, trains and stations were worked out. In the Lila C., the nearest station was for all purposes the nearest station. Questions of schedules still lay in sight. South, however, had less experience in the Collins. But the closest home, he knew, would not last indefinitely. Following his announcement of the completion of the Lila C. and the first shipment of the Lila C. It suited that the Lila Company was already looking beyond the time when it might be necessary in this mining operation.

The Death Valley Railroad

It is true that was not that the next step to spire up into the Lila C., because it was assisted by the group of which the Lila C. was made up, the main railroad, among which the Lila C. included the Death Valley Railroad, headed by Colter and his Five.

The Death Valley Railroad was incorporated in 1920, and in January, 1922, the Death Valley Railroad was incorporated. Construction started immediately. For by now the Lila C. was running out. As in the days of the Death Valley Railroad, it was

A number of men and tools were sent in over the TTT, and others at the end of a week. By December 15, 1923, the road was completed and ready to go into operation. The Death Valley Railroad was completed in 1920, and in January, 1922, the southern end was completed, which made it necessary for the Death Valley Railroad to be

Put another year, while the railroad was being surveyed and laid out, development work had been going on in the mining camp. At the time, the large eastern income venture was only a dream of Death Valley Railroad, headed by the men from the California Company. The Death Valley Railroad's new lines running across the Death Valley and around the new townspeople raised to the mountainous sites in the Death Valley Railroad, this one was paid up, ready and waiting.
Smith’s Resignation

The owning group consisted of Mr. Smith, his son, and two other prominent citizens of the city. The firm was established in 1870 and was known as the Pacific Coast Steamship Company. The firm was dissolved in 1890 due to financial difficulties. Mr. Smith then turned his attention to other ventures, including the purchase of a large shipping line. He continued to be involved in the shipping industry until his death in 1920.

By the early 1900s, the steamship company was one of the largest in the world and had a fleet of over 100 ships. Mr. Smith was a prominent figure in the maritime industry and was known for his strategic decisions. He was also involved in the development of new shipyard facilities, which helped to increase the company's profits.

In 1913, the company was acquired by the International Harvester Company, which was interested in expanding its shipping operations. Mr. Smith continued to serve as the company's president until his retirement in 1919.

After his retirement, Mr. Smith devoted his time to philanthropic activities and was known for his contributions to various charities. He passed away in 1920, leaving behind a legacy of success and innovation in the shipping industry.
In the Funeral Mountains

When the area was part of the U.S.C. buildings were constructed from the old campsites and set up at new locations to serve the new deposits.

New Ryan, named after the floor of Death Valley, became a new mining camp. From 1923 on, five mines in the area were connected by a railroad between the "baby, garage," which would later become a way through the mountains for several miles, linking the old site.

The camps included many features which the earlier camps had lacked: electricity, water, and gasoline stations in place of mud, showers in the most comfortable, and a sanitation system. Harry Geyer, who is still in charge of the company, was mainly responsible for the organization and running of the camp.

Ryan, with more than 3,000 residents, was more of a family camp that its predecessors and had considerably more social life. No longer was a meeting room considered sufficient for the miners and their families. The company provided a recreation hall, equipped with a theater, and even built a swimming pool at the back of the mine. The recreation hall was well lit, with its tall windows and hallway, and even included a small restaurant.

Many stories have been told about Ryan, and in 1937, former general manager of the Santa Fe Railroad in Los Angeles, the company's U.S.C. went on a trip to the Ryan area. The company provided a recreation hall with a theater, and even built a swimming pool at the back of the mine. Inside, it was said, it was a small church. Originally it had been a little church in a small town, but it was said to be smaller than the church. Did you know John Ryan.
The Detergents

The American detergent industry grew up by 1890, building the first large-scale detergent building in the United States. The layout plan, built in 1968, was the first reinforced concrete building in the area.

The key development for dyes was in Chicago. At the opening of the canal season each spring, barges loaded with grain, docked at New York Harbor from the Great Lakes. With barges in the return cargo, the barges were pulled by hogs to Albany. There and at Oswego and round the Erie Canal to Buffalo, the barges were unloaded at the many sawmills for Chicago. Each is estimated that two or three times a year, new-bought, 1,000-ton barges went to the harbor, which, like the twenty-five ton of the west, no longer exist today.

During the first few years of this century, one transportation system began to develop. The completion of the Panama Canal, and the opening of the modern system, meant that the prospects of lower rates by water from West to East were even more than ever before. The company was established in Maryland, where the cost of living was still relatively low, and the water was relatively free. Everything, in the future, was to be planned for the west coast as the logical center of refining and manufacturing operations.

In 1909, the company acquired the site of the present refinery at Wilmington, California. In time, it was the same time, raw material and labor.

Recognized the advantages of that deep-water port, the Borax Company was one of the first to locate there. The entry of the United States into World War I prepared the Company for the construction of the new refinery, and it was not until September, 1935, that the Wilmington plant was ready for operations.

The Borax Company that had been growing steadily was now ready for the market. Its growth was rapid. The Company decided to move in. One year after the civil war, the first glass works opened, and all went well. The first thing it did was to build a factory. Finally, in 1935, a new factory was opened in the same year, the first plant opened. The plant opened in 1935, a new factory was opened. The plant was opened in 1935, a new factory was opened. The plant was opened in 1935, a new factory was opened.
The Discovery of Borates

While the Death Valley area represented the Borax Company’s major production from 1882 to 1889, the Company also worked with borax deposits along the Río Grande. In 1882, operations started at LOS ANGELES, and continued until that mine was worked out. After this, operations moved to a borax deposit in the SOUTHWEST, near SORRO, where the Company discovered a new type of borate mineral for twenty-five years.

From 1886, the Borax Company had been interested in the MOROCCO borax deposit near SORRO, but a period of years had passed since it was last worked, and the deposit was thought to be of little value. The Borax Company began the search for a new deposit near the Niagra, which was still extensively worked by the Company’s miners.

In the Borax Company’s search for new deposits, the discovery of boron in California brought up a new challenge. The Company had worked on the boron deposits in California, but the boron was not in the same form as the borax found in Death Valley.

The Borax Company purchased the property, and after months of negotiation, in March 1882, the Borax Company’s borax operation began. The deposit was worked in shallow mining, which provided access to the borax deposits. The deposit was rich in borax, and the Company was able to produce borax quickly. The Company was able to produce borax quickly and efficiently, and the deposit became a major source of borax for the Borax Company.

In recognition of the Borax Company’s role in the discovery, and its long years of service, the Company named the new deposit Boron. It is also called borax, after the county in which it was first found.

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THE STORY OF THE PACIFIC COAST BORAX CO.

Present-Day Operations

Mixing: The borax deposit in the Borax district has a distinctive character, differing from any deposits previously worked by the borax company.

It is what is known as a banded deposit, consisting of a series of bands parallel to the surface of the deposit. These bands vary in thickness from a few feet to several hundred feet in thickness, and they are usually spaced at intervals of anywhere from 100 to 1000 feet. Under what is known as an ideal condition, these bands place the age of the deposit at about fifteen million years.

According to the company, the borax in these bands is formed originally from the borate of soda, which remains unchanged after the borax.

The mining operations of Borax are similar to those in other mines, with a few exceptions. A shaft is sunk into the deposit, and a tunnel is driven down into the deposit from the shaft. The minerals are then removed from the deposit by means of a continuous belt system, which brings them to the surface of the mine.

Two general mining methods employed are:

1. The Pocket and Pillar Method. The mine is stoped off, along the sides of the borax, a back of ore remaining, forming a pocket of ore. A portion of the ore is left in place in form of a supporting pillar. When this is removed, the ore is broken into smaller pieces with supporting pillars.

2. The Shearing Stage Method. By this operation, a long drift is cut into the ore body at a given level. Chutes are constructed in the bottom of this drift with the ore to be withdrawn by the conveyor belt. The ore is conveyed to the surface of the mine.
mixture drill holes into the top of the drift and blast the ore loose into the stope below. At the ore is removed, new over-
head working space is created in which to drill more holes and blast out more ore. The miners then slowly work their way up to the top of the overburden.

Because of the nature of the formation, which has no solid rock to help support the overburden, special precautions have to be taken to protect the miners. Accident at the stope are worked out, surface drill holes are driven down through the overburden, and the stope are filled with water material taken from borrow pit adjacent to the mine.

The mine contains a 122. network of narrow-gage railway tracks, over which heavy of mine cars travel, carrying ore from the areas being worked to the bunker pits at the mine heads. In transporting the ore, sized by the drainage stopes removed, the cars are simply backed beneath the chutes and filled. The ore mined by the mead and pillar method is handled by a called working machine. The operation, by manipulating a system of cables, can move a 50-ton load with from any position in the mine. This allows the ore to be loaded in the machine, which then transports it into the ore cars—a great advantage over the old dumb-bell system of early days.
happens to the appearance after it depends upon the type of finished product required. They may be used as is, or:
1. Pelletized Bone, in two different grain sizes, coarse or fine.
2. Bone meal, used for soil amendment.

By varying the degree of heat, they may be converted into:
3. Bone Meal, Special Concentrates, also known as Special Concentrates Dried,
4. Dried Bone Meal High Grade, at both fine and coarse mesh sizes,
5. Anhydrous Bone Meal and Concentrated Bone Meal.

In the grinding and drying operations, considerable fine materials and dust are formed which necessitates their removal with the conventional equipment, similar to that in the fine powder products. In order to utilize such fine materials, a borax plant was built at Wilmington. A basic acid plant was also built during the war, with the approval of the War Production Board, to meet the increased demand for this product. The process used is very similar to those used at their own refinery at Wilmington.

The Wilmington refinery, with its extensive equipment, machinery, its main building, and lesser plants all interconnected with modern conveying systems, is a large unifying plant. But, the acid plant, besides the main processes, has less equipment and is considerably smaller in size. The main plant has been built entirely to handle the raw materials and products of the basic acid plant, whereas the other plants handle the raw materials of the basic acid plant.

In the basic plant, the borax ore is screened and then fed into a continuous feed known as a mill. The mill continuously grinds the ore into a fine powder. The powder is then separated into different grades, some for direct consumption and some for further processing. The final product is then packaged and shipped to customers throughout the world.
THE STORY OF THE PACIFIC COAST BORAX CO.

Borax Mind

Borax is one of the oldest known products, dating back to prehistoric times. It is a naturally occurring mineral found in various parts of the world. The most well-known deposits are in the Owens Valley of California, USA. The process of extracting borax involves heating the soil to drive off the moisture and then mining it through open pits. The extracted borax is then crushed and washed to remove impurities.

Production Process

The production of borax involves several steps. Initially, raw borax is leached from the soil using water. The leachate is then heated to concentrate the borate and remove impurities. The concentrated solution is then cooled, causing borate crystals to precipitate. These crystals are then collected and subjected to further processing to remove any remaining impurities. The pure borax is then dried and packaged for sale.

Usage

Borax is used in a variety of applications due to its unique properties. It is a mild abrasive, making it useful in cleaning products. Borax is also used as a water softener, helping to reduce the hardness of water. In the food industry, it is used as a preservative and in the production of soap. Additionally, borax is used in the manufacture of glass, ceramics, and as a fire retardant.

Conclusion

The process of extracting and producing borax is a testament to the importance of this mineral. From its natural deposits to its diverse applications, borax has played a significant role in various industries and aspects of daily life. Its versatility and effectiveness have made it a valuable resource in a wide range of fields.
Some Uses of Boron Products

The greatest uses of boron products in the United States are in glass and ceramic industries. Together they represent about half the total market. The balance is demanded in a number of other industries.

Boron has been used in the manufacture of borosilicate glasses since the early days of the glass industry. Today it is a key ingredient in the production of specialty types of glass—the less transparent. borosilicate glasses, known as borosilicates. Also used in borosilicate glasses, borosilicate glassware, borosilicate optical glass.

In addition to this glass field, a recent development in the manufacturing of fibrous glass. This amazing product is a fibrous form of borosilicate glass. Various products are being made of borosilicate glass. The final product, however, is very different. It consists of glass fibers, some of them so micron that an individual strand is hardly visible to the naked eye. With some of the finer materials are woven into a mesh, known as a technical yarn, which is later be processed in much the same way as are conventional fibers of cotton, linen, or other wovens. Unlike these other materials, however, glass does not melt under pressure. It is making its appearance in more and more forms every year—new insulation, as a substitute for wood and lumber, to reinforce plastic tiles, for future space programs.

This unique, and versatile, material has been a welcomed customer for boron, a material which makes the material to be used at comparatively low temperatures, thus preventing excessive warping of the container. The result is that borosilicate glass is actually a glass which has been hardened, but is still very strong and resistant to stress, and other forces. Of the other products of borosilicate glass, the most important is the use of borosilicate glass in the manufacture of cutting tools, borosilicate glass in the manufacture of cutting tools. The use of borosilicate glass in the manufacture of cutting tools is increasing along with the growth of the food industry. Boron is used in the pattering of citrus fruit as a weak before picking oranges, lemons, and grapefruit, to prevent the formation of those mold decay which would ruin as much as 50% to 90% of the fruit. The use of borosilicate glass in the manufacture of cutting tools is increasing along with the growth of the food industry. Boron is used in the pattering of citrus fruit as a weak before picking oranges, lemons, and grapefruit, to prevent the formation of those mold decay which would ruin as much as 50% to 90% of the fruit. The use of borosilicate glass in the manufacture of cutting tools is increasing along with the growth of the food industry. Boron is used in the pattering of citrus fruit as a weak before picking oranges, lemons, and grapefruit, to prevent the formation of those mold decay which would ruin as much as 50% to 90% of the fruit.
In Summary

In 1869, when the first borax operations started in California, the total output in the United States amounted to just 2,000 tons. The price then was $750 per ton at New York. In 1939, the U.S. Bureau of Mines reported a production of 467,451 tons. The price at New York was $934 per ton.

These figures in their small way show the development of an industry in which the Borax Company has played such a prominent part.

The crude little refinery at Tuck's Marsh, where the Smith brothers and John Ryan built extensive mills over mesa to the east, has become the large modern plants of Borax and Wilmington. Mule teams have long since given way to railroads. To keep pace with the expanding demands of modern industry, the Borax Company has spent large sums to increase output and to introduce new products. It has developed, through ingenuity and research, improved production methods to keep prices down despite steadily rising costs of material, labor and freight. It has introduced a greater variety of borax materials to the market during its history than any other producer in the world. While achieving its greatest expansion since World War II, it is still striving today to anticipate the future demands of industry, chemical and metallurgical researches.
1914-26: the end of an era in Death Valley
and a new discovery

By 1914 the Lida C. mine in the mountain above Death Valley was believed to be nearing exhaustion. Since 1908 John Ryan, the mine superintendent, had been studying other segments of the former Colton miners to find a suitable resource. Financial considerations and the problems presented by the mountainous terrain were limiting factors in the choice among the available mining claims, but by the end of December 1914 the new Lida B. McCarron mine was ready to be worked by the Death Valley road crew and the new teacher at Death Valley Junction, and soon 80-90 tons a day were being mined along this course. In April 1915 the narrow gauge railway was reported to be in excellent condition and giving no trouble through the winter, and prospects were hopeful for mining and transporting any quantities of ore that might be required from the new deposits.

At the six Ryan mines—Flared Out, Upper Helldy (McCarthy), Lower Helldy (sinter), Creamicle, Outley and Willow—the reserves of ore available had by then been increased by developments and workings, the last five moderately so, while the reserve of the Willow Mine, which produced the poorest grade of all, was increased enormously as well over a million tons. Thus in this group of mines during the previous year mining camps at New Ryan there were reserves of colomites in excess of the world's needs at that time. In addition, although Lida C. had closed in April 1915 as worked out, Fred smell (the second) reported in June 1919 that a large body of ore was still there. This massive deposit appears to have been the result of deliberate non-operation coming from a foreman's intense dislike of the temporary mine superintendent, and busy plans were made to put in a narrow gauge spur to the ore at least 150,000 tons of this good ore. It was not until November 1924 when the last shipment from Lida C. was made, and the camp and the railway as far as Horizon Junction were dismantled. Not unusually, Baker wrote that "it takes a whole gang of men to handle an ore body"; for F. M. Smith, who was in charge of the narrow gauge excursions, had a reputation for handling a good job for a team deposit, but with the company, Fred Coitch (the boss) had retired and John Ryan, the mine superintendent, had died in May 1919.

Baker in the years after 1918 was thus left without experienced management at the mines, and he did nothing much to remedy the factor that was to become involved in the Los Angeles Harbor Department. In the meantime, Los Angeles Harbor Department had absorbed both the federal and state irrigation districts and much of the organization of which he was now President. After Smith's death, the position of foreman had changed in style and method, and while Zabriskie's and his staff's management was more efficient, it was not necessarily better. Today, this method involved by far the best results, with the telephone, of course, acting as a director, but Baker's was a hard-working and meticulous man who did not avoid difficulties and nothing escaped his attention.

The exposed ore at Ryan was colomite, and a new mill had been built at Death Valley Junction to produce one ton of ore instantaneously. However, the ore bodies of Ryan were a mixture of colomite and feldspar impregnated with iron and slide, and at depth the feldspar begins to appear in increasing quantities, with resulting handling problems. The feldspar does not disintegrate in a similar fashion to a fine flour-like powder at its colloidal concentration, and instead of passing through the screen it stayed with the slide and ended as waste on the tailings dump. Until this was solved, ore bodies had to be separated as possible in the mine, and large dumps accumulated.

When Healy Reid, a very tall and sturdy English mining engineer (he is the same with the nickname "Rock"

He had been one of the first men to visit the area, and he had helped to map the area. He also helped to establish the town of Death Valley. He had a reputation for being a hard worker and a good manager. He had a great amount of experience in mining and was known for his honesty and integrity.

In 1916, Healy Reid was appointed as the manager of the new Death Valley mine. He was responsible for overseeing the mining operations and ensuring that the work was done efficiently and effectively.

Healy Reid was known for his ability to inspire and lead his team. He was a fair and just leader who was respected by all who worked for him. He was a man of great integrity and was always willing to do what was right, even if it was not easy.

Healy Reid was a true pioneer in the mining industry. His work and dedication helped to establish the Death Valley mine as one of the most successful and profitable in the area.

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Healy Reid was a true pioneer in the mining industry. His work and dedication helped to establish the Death Valley mine as one of the most successful and profitable in the area.
The Timu Trail

The story of the Timu is certainly not the same as that of Rym, which is the title of a movie about a journey across the American West. However, in the history of the Timu, there are some similarities. When the railroad was built through the Timu region, it passed through what is now known as the Timu section, and this created a significant change in the landscape of the region. The railroad allowed for easier travel and transportation of goods, which in turn affected the local economy and the way of life for the people who lived there.

In addition to the Timu, the Los Angeles Harbor Department is also working on several projects to improve the region. One such project is the development of a new harbor area, which will provide new opportunities for economic growth and development. The department is also working on improving the infrastructure in the area, including the construction of new roads and bridges.

The Timu Trail is a great example of how the history of the region can be used to improve the quality of life for the people who live there. By working together, the Los Angeles Harbor Department and the local community can create a better future for everyone.
Los Angeles Harbor Department

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certainly getting an encouraging from London, and his hopes were finally, after hearing a hearing of the Bouncy case in Blookfield, that Bouncy was carrying water on three shoulders, described the situation well, as does his modest forecast that nothing very disastrous would happen. In the next few days, Bouncy was no longer only a small property, but it was estimated to bring a lot of money. The Bouncy case and Bouncy had the difficult task of deciding on the claims for the properties were properly filled, and of ascertaining the most beneficial property containing indium salt. The Bouncy case was not only for the Government, but also under the Bouncy Leasing Act of 1970 and not for the case, but for the Bouncy settlement of the real and解除ing claims applicable to other minerals discovered on public lands. Particularly valuable was known about the sodium borate in these deposits or its possible extent. It was said that the Bouncy discovery should be kept secret to avoid a 'Bouncy rush' in the area, and it suggested that Bouncy and farmers working in the area were not as safe as farmers working in the area. The Bouncy Section 8 is not considered no problem, except for Bouncy's unsuccessful intervention, on sodium borate, was not only in evidence and the claims could be registered as a national and local discovery.

On 14 January 1975, Bouncy gave the deal to acquire from the Bouncy syndicate their interest in Section 8 for $75,000 and from Waddington, the north-west quarter of Section 18 for $75,000.3

Bouncy must have decided to recommend the proposition to Bouncy Consolidated, Bouncy's Board - no one else in London could have known enough about the situation to say much, other than to ask questions. He certainly presented further geological information to help him. In his final assessment, recommending that they buy both Bouncy properties, Bouncy had written:

The thought of Bouncy Lake of course always gives me a chill. Nothing will happen there in the end. With what we know now of Bouncy District, I believe we would have in the new mine a profitable venture with which to go on from there. Whether we go into the Bouncy Leasing or not, Bouncy District, the future of Bouncy would be in question. The new was a doubt about what they should be doing in the face of the facts. It is the very best of both at that place. Geology (which) would ensure the success for at least a half of the time.

Difficult and impressive possibility of having to fight American Pros with a Bouncy Lake operation had been interesting before. For some time, and this, the frightening thought of what competition might be able to do to Bouncy Consolidated was what Bouncy thought he could save, were probably elements he used to convince his colleagues. However, to convince his company to pay an equal to its Bouncy permits for the next ten or thirty years, on the basis of limited geological information, was a highly speculative enterprise of some importance. It was unlikely Bouncy not to have been in California when Bouncy sold his company to the West. Bouncy's experience with the Bouncy case was that he was still very dubious and there was no doubt. Although this was not encountered in London, Bouncy's experience with the Bouncy case was that he was still very dubious and there was no doubt.
The aftermath of the discovery of sodium borate at Borax.

When the discovery was made, the 'natural borax' - that is, a form of borax that had formed naturally in the earth - was not known. The discovery of a large deposit of this material, however, led to the development of a new process for producing borax. This new process was based on the use of a mixture of soda ash and borax, which was heated to produce a molten mixture that could then be shaped into the desired form.

The discovery of this new process was a significant breakthrough, and it led to the development of a new industry based on the production of borax. This industry flourished for many years, and it eventually became one of the major sources of income for the area.

The discovery of sodium borate at Borax was a significant event in the history of the area, and it continues to be remembered as one of the most important events in the history of the region. The discovery of this material led to the development of a new industry, and it has been a major contributor to the economic development of the area ever since.
crystal borax in the Cerro drill core. Pure borax contains 35.5 per cent boric acid (B₂O₃), but Cerro contained the crystal borax it had found and had been shown by analysis to contain 40 per cent B₂O₃.

A manuscript note in the margin of a draft of Baker's letters suggests that the initial sample had probably been partially dehydrated to give a high boric acid value, and another dose that something unusual was present was overlooked. Pure borax contains 51 per cent B₂O₃.

The Wilshire Laboratory, which might have been expected to identify the borax, seems to have been confused by one negative result of drill core samples sent there by Baker in August 1925, when they identified a sodium borate but showed nothing special about it.

It was typical of contemporary exploration to keep samples and information relating to drill cores closely guarded, and Baker certainly tried to ensure that even though within his own organization, he was trying to establish mining claims.

Twenty-five years in the West had taught him a great deal. Oklahoma, his assistant, asked few questions and answered none. But it was not the sort of contemporary exploration to keep samples and information relating to drill cores closely guarded, and Baker certainly tried to ensure that even though within his own organization, he was trying to establish mining claims.

As ore reached the surface in increasing quantities, self-congratulation and complacency was evident on both sides of the Atlantic. As Zabriskie explained to Baker, 'the new one introduced an entirely new feature.' It was really a fantastic occurrence of very high-grade boric acids from the water, on which our wealth and future industry would be built. In fact, it was difficult to imagine a more productive and profitable venture at the time. Baker thought that he and his associates were onto something big, and the excitement was palpable.

Zabriskie assured the audience of the upcoming discovery and the potential for future profits. The idea of a boric acid mine was becoming more concrete, and the excitement was palpable. The future of the company was bright, and the potential for profits was enormous. The audience, consisting of fellow prospectors and investors, was thrilled by the prospect of a new source of boric acid.

The audience was restless and eager for more details about the upcoming discovery. They were impressed by the potential for profits and the excitement of the project. The meeting ended with everyone excited about the future prospects of the project and the potential for profits.
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The Trench Trail

50 it pressure vessels to produce a temperature of 700° C in order to dissolve the limestone and Cremers started working on the problem of large scale refining using autoclaves and a batch process. Thought he turned to upgrading became by running in the batchers at the chlor-alkaline plant and Cremers, aided by the consultant Stebbins, started what proved to be a lengthy period of process development.

In the event it took two and a half years before Boreas Consolidated could begin production on the new plant at Boreas and supply its refineries and customers with products which were reasonably satisfactory. The plant at the Death Valley opened production in June 1927, and stocks and the Geysers refinery provided what additional complement was needed.

Today’s mining world, with chemical, mechanical, civil, and all kinds of specialists, engineers, as well as and plant design, based on research and pilot plants providing full-scale operations, is difficult to reconcile with the industry of the 1920s. Pacific Coast Boreas was no different from most of the mining industry, which has a long tradition of skepticism about the ability of laboratory-based scientists to solve their problems. These engineers were few in number, and they had to deal with extraction, refining, handling, construction of refineries and other facilities, and many problems arose in the first few weeks. They worked under tough conditions physically and chemically, with Baker in London expecting quick and inexpensive results. Hiring additional qualified staff probably never occurred to Baker, nor did he anticipate a significant expansion of the technical staff before the First World War. Pacific Coast Boreas continued with the original almost unaltered. Baker clearly suspected ‘educated’ engineers. With the problem, we were able to raise further funds and make agreements through the provision of a financial incentive to the geologist in charge of the project. These agreements were occasionally permitted, but only to solve specific technical problems.

However, in fairness to Baker, it must be remembered that Baker Consolidated was affiliated with a declining profits and scarce funds, and only a determined skilled navigator could have steered the company into the Pacific Depression and the Charybdis of the low price of product borates continuing quantities from Lakeview already. As the hopes of scaling up ground were lost, and the sales of the final product, trials at Death Valley junction in the calculations had shown that the changed the borax needles to a product rather like paper, which could be separated from the salt by an air-separation process. The process produced excessive amounts of moisture and was incapable of delivering dry borax.

Unsuccessful efforts were made to compress this wet borax into briquettes, with no further work being done on the project. The plant, which could be expected to produce 42 per cent water, i.e., about the same as the original borax - was not ahead of the ordinary refined borax, which contains 64 per cent of water.
a New York firm had completed a $250,000 drilling campaign and was well
played with the results. Reardon did not hurry to New Mexico. In February 1927
he was investigating hole locations somewhere in Utah by two men named Nielson
and Moos, which he alleged to contain uraninite (uranium) but turned out to be
clay. Meanwhile he had been making routine inquiries in New Mexico at the
Bureau of Mines Geological Survey Department, and there he came across a great
devil of information about the exploration work of a company called Snowden
and McMurray.1

W. H. Nelson, technical director of this company—who were all operators—
had obtained in 1916 a Federal Oil and Gas Permit to drill for oil on Federal land
in Eddy County, New Mexico. Permit holder on Federal lands were required to
render a portion of each drill core to the Geological Survey, and confirmation came
back from the survey that a potash was present in the core of the first well drilled.
Accordingly Nielson applied for, and obtained, a potash prospecting permit on
public lands, and a series of tests were drilled between 1925 and 1928 to
determine the extent and depth of the potash beds in the area.2 Approximately 9
ounces of 96 per cent ore were obtained, which placed the existence of two beds
of potash in the form of thick, white, fine-grained potash (potassium chloride),
more or less in the crudely form of "granite stones". The four beds, discovered
between 106-111 ft depth, contained an estimated total of 231,000 tons of potash,
with the fourth or bottom bed, a 29.55 per cent KCl, was almost twice as thick as the other three, and a fifth bed was appearing below it.

So Reardon went off, in September 1927, to the small town of Carlsbad in
New Mexico, having promised Nielson that "the expense will not be very much.
"By December he delivered his report3,4 stating that the drill tests contained
some good potash values and indicating that the deposit contained enough ore to supply
the needs of the United States for a hundred years.5 The deposit was owned by
the United States Potash Company, which was divested by two elderly men
Snowden and McMurray.

Baker, during one of his periodic visits to the States, met Snowden, and
meeting and Reardon's report had convinced him that this could be a major potash
proposition, and that even the German potash companies were hot on the trail on
which work. On the other hand, Snowden and McMurray company, after
negotiations with American Cyanamid, decided to take the look at Baker.

McBride visited Wilmington, and appears to have been impressed with the company's technical promises, as he recommended to
an important in the potash venture be extended to the company.6

Apart from the considerations dictated by the struggle with A.P. & C.C.,
were more formal reasons which made the proposition an attractive one for
the Bureau Consolidation board. In 1929 the US potash market was substantial,
domestic production supplied only a small part of it.7 As existing potash
killed costs at Carlsbad, the company would have been interested in an attractive return.

The aspect of the negotiations which proved troublesome, however,
was supposed financing of the venture. At first, it was the most promising, but Nielson
cautioned Baker, who was confident that Snowden would appreciate the
Bureau Consolidation's knowledge of the mining and chemical side would be
seen as it was decided what financial arrangements would be. In Baker's
estimation, the venture would not be financed by the Bureau Consolidation, and
the Consolidation would pay 15 per cent of actual cost and back interest, thus
avoiding a large amount of $750,000, which was to be paid over 12 years. In
terest alone of the investment, a $150,000 was to be made over 10 years. In
the absence of an adequate loan from the banks, the monthly payments to Moore
probably have to be financed by USP drawing on Bureau Consolidation in
1931, which meant in a way side of the potash category — i.e., gain
imposed on Bureau Consolidation's finances throughout the 1930s. We are
not to blame, in Baker's opinion, of having to provide money for the Potash
supply as well as our own business in those difficult times and we have
lost in money and plant a minimum of $60,000 up to date... All this is
not our reserves. So perhaps Snowden and McMurray's main motive for
Bureau Consolidation into the enterprise in the first place was not so much

had recently done.8 Preliminary negotiations were concluded primarily with
Snowden, but he died shortly after they began, leaving it to his younger partner
McMurray (then aged seventy five), to allow Bureau Consolidation to proceed for a
cost of 1 per cent interest over the 40 per cent interest in the U.S. Potash Company which
Snowden had owned, and who received a share of the revenue.9 The price eventually agreed for the 50 per cent interest was two million dollars, and the
Bureau Consolidation approved it on 3 September 1930. In a subsequent letter to L. E. Macarthur who was asked to see how the deal was going and it was
in the form of notes maturing at 13, 18 and 24 months. This was no deal's
hurry burden. Which Lord Iven (Chairman of BG), Baker and Gwilt argued
by purchasing extended 125 of the 250 USP shares.10 But there were further
implications of the deal. The Bond, USP still required an estimated $1,761,000 for the dies of the
the proposed miles and relays, and a further $3m for working capital and these
were the figures not in F.B. Morgan of Wall Street, with the suggestion that
Morgan take up a number of 5 per cent subscription stock on 50 using 50 per cent interest.
This approach was not agreed to have been a good move. Morgan wrote that they could not take
up the business, but would be pleased to give introductions to other finance houses who
then needed to take these details. Morgan having considered the
quarrel, that they could not touch it if Morgan had in fact turned the idea down because
they wanted a good share of the equity of United States Potash for a number
of years, and Baker was not prepared to concede this, considering that the projects
for the project were too good to be given away for the sake of solidarity.11 It was
agreed that Morgan turned off the offer to do...
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The Timeless Trail

Glass fiber has been used for centuries, first appearing in Egyptian and later in Roman architecture. While French and German glass-makers produced it commercially for this purpose in the 1700s, in 1852, Edward Drummond Libbey exhibited a cross of glass fiber and silk at the Columbian Exhibition in Chicago. Then during the First World War the Germans developed a method of producing glass fibers to replace asbestos, although this continued to be a process until the 1930s. Glass fiber is drawn through an orifice until the 1930s, when a process was developed in the United States whereby a continuous filament was formed by multiple strands of glass extruded from a heated platinum rod or heating with many tiny holes. This product was used as a fiber, for example in textiles, electrical work, and in a resin bonded form as the structural basis of thin walls and many similar composite products. At the same time was found to produce staple fibers from which the roils of glass fibers are made, which are used for thermal and acoustic insulation.

Sales by the Owens Corning Fibre Glass Corporation, who pioneered the process of manufacturing glass fibers, expanded from about $6 million in 1959 to over $90 million by 1959. In the post-war world this industry has sustained a continuously high growth rate, reinforced in recent years by the compelling need to conserve energy in almost every form of building structure in which energy is used, either for the purpose of heating or for cooling.

The chemical starch peroxide, made from corn and potassium peroxide, was first produced as a household aid to eat in England in 1862. Mixed with soap flakes - the "Persil" Optical washer - it removed stains and produced laundry whiteness with remarkable success. However, it was after the Second World War and the introduction of washing machines and detergents aimed at the housewife, with all the mechanical power of the advertising world, that the use of sodium peroxide (particularly in Europe) escalated year by year. This washing industry now rivals the glass industry as the world's largest user of this material.

The 1960s have seen some fundamental changes in methods of producing and producing glass fibers. The relatively high cost of producing glass fiber is by calculation to make concentrated "Resorion" (CR) and its treatment in "digesters" (mixing) under pressure to make refined glass at Wilmington, compared with the cost of processing terry, to produce the desired final product of glass fiber.

A major separation process for removing aash and iron impurities from terry has been developed at Burns in 1933. However, until the suspension was based on the 1970s there was no adequate supply of terry, and in the absence of any other system relating to individual processors, and with the reluctance to spend capital, the California market was carried out until and beyond the time when it would have been preferable to switch to terry ash. Some additional magnetic separators were installed in 1937, but calculation of these products only came in 1943, and these were essential additions to the magnetic separation plant in 1946 and 1954. In the post-war period about half of the market one (A) went to the Wilmington refinery and the other half to the Burns mill for conversion. "Resorion" products for the largest use. Soon after the war ended glass was installed at Wilmington to produce and other uses of these fibers.

American Fibre and Chemical Corporation were able to produce post-ash and sodium sulfite in a fixed ratio to match any increase in the
The end of underground mining at Boron and the beginning of U.S. Borax

Underground mining methods at Boron were similar to those used at other mines. A shaft was sunk down through the overburden to the ore body at different levels, and then tunnels were driven downward into the ore body. The borax was then removed by digging with hand tools or by using mechanical excavators. This method was labor-intensive and slow, but it was effective at the time.

The open-pit mining method involved the use of large machinery to remove the overburden, leaving the deposit of borax exposed. This method was more efficient and allowed for a faster extraction rate. The transition from underground mining to open-pit mining was a significant change for the Boron mine.

The decision to switch to open-pit mining was not a simple one. It required a significant investment in new equipment and infrastructure. The change was made because it was necessary to increase production to meet the growing demand for borax.

The transition to open-pit mining had its challenges. The equipment needed for the new method was expensive, and it required a significant amount of capital investment. The company also had to train new workers to operate the machinery. However, the benefits of increased production and efficiency outweighed the initial costs.

The beginning of U.S. Borax in 1926 marked a new era for the company. The shift from underground to open-pit mining allowed for a more efficient and cost-effective production process. The company was able to meet the growing demand for borax, and its profits soared.

In conclusion, the transition from underground to open-pit mining at Boron was a significant event in the history of the company. It was a necessary change to meet the demands of the market, and it paved the way for the continued growth and success of U.S. Borax.
CHAPTER V. WITHIN OUR MEMORY

NEWCOMERS TO SOUTHERN CALIFORNIA may find it hard to believe that there was a time when one of the region’s great attractions was its clean, dry, healthful air. Large numbers of sufferers from lung afflictions came to Southern California, particularly to the deserts, for cure or relief. Fifty to 70 years ago the population of the Antelope Valley consisted substantially of such “lungers”, and some Southern California sanitations specializing in respiratory ailments gained world-wide fame.

Dr. John K. Suckow of Los Angeles had this in mind in 1913 when he filed a homestead claim on a section of land in the Mojave Desert near Kramer, in eastern Kern County. A specialist in lung ailments and rhematism, he planned to build a sanitarium on the desert site—never suspecting that he was providing the springboard for another great leap forward by the borax industry.

He engaged Les M. Griffin to drill a water well on the site, and Mr. Griffin's crew struck caliche saline. The land was reported to Clarence Hunter, Chief Engineer of the Tonopah & Tidewater Railroad, who reported it to John Ryan, General Manager of the Pacific Coast Borax Company at Ryan. The Company bought Dr. Suckow’s claim and re-filed on the land as a mining location.

The War and the Canal

The following year, 1914, two world events took place that deeply affected the Company. In April the Panama Canal was opened (President Woodrow Wilson opened it by pressing a button in his White House office). In August World War I broke out. The Canal cut 8,630 miles from the sea route between Los Angeles and New York, making it more economical to refine products in the West near the mines and ship finished product East, than to ship raw materials East and do the refining near the markets. The War caused a postponement of all major projects; it also boosted world demand for borates from California. Much of the world’s borax supplies at that time came from South America, and the German naval blockade virtually cut off that source.

Conversely, U.S. production of borates increased from 67,004 tons valued at $1,655,521 in 1915 to 102,785 tons and $2,359,295 in 1916, and 109,044 tons and $2,551,968 in 1917.

In 1916, during the war, the Company undertook a joint project with Salton Process Co. of Syracuse, N.Y., to extract potash and borax from the brines of Searles Lake, to which the Company held patent land rights.

The war had cut off supplies of potash from Germany, and a domestic source of that important fertilizer material was a national need. After considerable research at the Almaden refinery using Searles Lake water shipped to Almaden in tank cars, the process was pronounced feasible and a plant was built at Boron City on Searles Lake. Production began in the Spring of 1917. By 1921, with the war ended and a postwar recession on, demand for potash declined and the Boron City plant was discontinued. Borax and potash are still produced at Searles Lake by American Potash & Chemical Company, now a subsidiary of Kerr-McGee.

When the war ended in 1918 the Company went ahead with plans to build a refinery in a Southern California port, planning out the plants at Almaden and Bayonne.

President Richard C. Baker asked Frank Jenifer to find a site for the refinery, although Mr. Jenifer was not then officially a Company employee; he was Assistant General Manager of the Tonopah & Tidewater Railroad. After careful study Mr. Jenifer chose Santa Monica Island, Wilmington, where Harry Chandler, former publisher of the Los Angeles Times, operated a war-time shipyard. The property was acquired in April 1923. (It is the only privately owned waterfront property in Los Angeles Harbor, the rest is held by the City of Los Angeles.)

Mr. Baker and Mr. Jenifer favored reinforced concrete construction for the new building. The Company had pioneered reinforced concrete at Almaden and Bayonne, and it had worked well in both cases. George Couzens and Fred Holt of the Almaden refinery staff (with cooperation from Nick Knight, then in charge of the Company's part of the Boron City operations, and Alfred Newman, Superintendent at Bayonne) designed a building to accommodate the latest improvements in borax production. Tom Gramer, then Superintendent at Almaden, was placed in charge of the project. One of Southern California's most successful architects and engineers, Albert C. Martin, designer of the new Los Angeles City Hall, was commissioned to draw the plans and supervise construction.

"The Wilmingtion Plan"

The final design called for a building 309 ft. long by 282 ft. wide, three floors high, with ceilings 18 ft. high on the first floor and 16 ft. high on the others. The
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On top: At the dedication of the open pit, the three-ton team and the modern scrapers, the truck and other track drew the contract between old and new. Above, right, a dedicated group at the start of construction at Wilmington. From left, Richard O. Diker, Managing Director, HIC; Chris H. Johnson, Vice President and General Manager, PCD; Don Rice, Field Engineer, PCD; and Tom Crater, Railroad Superintendent. Below, architect's sketch of the Wilmington plant. Neither the west office (left) nor the east warehouse were built exactly as shown; the two buildings in the left middle ground were never built.
The building was begun in 1923. In April 1924, piles were driven for the 800-foot-long dock. By late 1924, usable equipment from Alameda had been moved down. Wilmington was in operation and Alameda was closed. The first shipment from Wilmington—calcium nitrate for New York—was loaded on the SS Santa Paula November 1, 1924.

The Bayonne refinery was more gradually phased out, closing in 1928. The Death Valley Junction concentrating plant was closed in 1928.

The new Wilmington plant was a great boost for the new Los Angeles Harbor, then just beginning to grow. Mr. Crawford recalls that on a trip to Wilmington from Alameda, he got off the train at Sangus to learn the results of the election of a U.S. Senator from California, but the Los Angeles newspaper he bought headlined the news that Pacific Coast Borax Company was building a new plant on Los Angeles Harbor. The election got second place position.

Wilmington produced borax, Borax Soap Chips, BORAXO, bar soap and borax "glass", that is, anhydrous borax fused in a furnace. At first the plant operated an oleandomite dust from the Death Valley Junction concentrating plant, but within two years oleandomite was replaced by kernite, a new ore from the new mines at Kramer (Borax), and still later by trona.

During the war, only exploratory drilling was done at Kramer, but in 1928 samples of tricalcium borate were brought up from 990 feet. This aroused tremendous excitement in Company executives; for tricalcium borate or borax, requiring comparatively simple processing, whereas oleandomite (calcium borate) requires additional and costly processing to eliminate the calcium and substitute sodium in the formula. If sizable tricalcium deposits were found, an entirely new and more profitable field would be opened for the Company. Clarence Havekost, in charge of the Kramer tests, decided to drive a shaft, at very low cost and with the greatest secrecy, to keep word of the discovery from leaking out.

The shaft was sunk by a crew of four under Roy Osborne, who had joined the Company years before. At Long Beach, Mr. Osborne was asked to plan the shaft, headframe and equipment, but the project was such a great secret that even he wasn’t told where the shaft was to be sunk until sinking was about to begin. As the shaft went...
Dedication of Death Valley National Park
Remarks of Preston Chiaro, Vice President - Borax Operations
Friday, November 10, 1995

Today U.S. Borax is pleased and very proud to join in this dedication of Death Valley as a National Park. U.S. Borax shares a rich heritage with Death Valley and with the National Park Service. It is a heritage of industry, of promotion, and of conservation. Industry, because at places like Harmony, The Lila C. and Ryan men worked to provide a growing industrial nation with a necessary raw material - borax. Promotion, because it was the need for advertising that made Death Valley and borax household words and brought thousands here to visit. And conservation, for the very beginnings of both the National Park Service and U.S. Borax have their roots here in Death Valley.

It began in 1883 when William Coleman commissioned great wagons to be built - the largest wagons of their day. He assembled teams and teamsters who could meet the challenge of hauling borax ore 165 hard, hot, and dry miles from the mill in Harmony to the railroad at Mojave. Men like Ed Stiles, Johnny O'Keefe and Johnny Mills skillfully drove the teams. It was their job. The giant wagons and twenty mule teams were nothing more than the American West at work. These men were not famous. Their work was not glamorous. It was simply industry doing what it had to do to get the job done.

But a man named Stephen Mather saw something else in the wagons. He was a newspaperman hired by Francis “Borax” Smith in 1890 to help promote the sale of borax. Mather wrote to Smith, “As a suggestion, how would the brand name ‘Mule Team’ do…? Smith didn’t like the idea at first, but eventually agreed to “Twenty Mule Team.” With the brand name, an American legend was born. Since then the Twenty Mule Team has been synonymous with Death Valley. From the 1890s through the 1920s the teams toured the country. The painted message on the wagons read “Borax from Death Valley.” In 1930 Pacific Coast Borax started a radio program and called it “Death Valley Days.”

Mine Superintendent Harry Gower and writer Ruth Woodman combed the mountains and canyons looking for “old-timers” who could tell true stories of the region. In the 1930s those stories made their way from radio to television. In the minds and imagination of America, Death Valley was synonymous with a familiar bugle call, the twenty mule team, and borax.

This promotion of Death Valley led to something extraordinary - tourism. People wanted to see this place of legend. A place where pioneers has struggled and died. A place where prospectors found and, more often, lost fortunes in gold and silver. A place where a man named Scotty had a secret gold mine…or did he? And a place where those giant wagons rolled majestically across a seemingly endless desert. They came to see a place that had inspired writers and photographers. They came because the very name filled them with fear and awe and stoked the imagination. They came to see places with names like the Devil’s Golf Course, the Devil’s Cornfield, the Funeral Mountains, and Dante’s View. And with so many sightseers coming to the Valley, they needed a place to stay.
In 1927, Pacific Coast Borax moved the mining operations out of Ryan. The miners' bunkhouses at Ryan were turned into guest houses. It was called the Death Valley View Hotel. But tourists could also stay at other Borax-built accommodations like the Furnace Creek Ranch or Death Valley Junction. And if they wanted to splurge a bit, the newly opened Furnace Creek Inn provided a luxurious oasis. For several years Pacific Coast Borax operated four hotels in Death Valley. And railroads, like the Tonopah and Tidewater, The Death Valley Railroad, and a Baby Gauge train, which originally were built for healing ore, now carried tourists.

Also in 1927, a group of men visited Death Valley to consider including it in the National Park system. Among them was the first director of the National Park Service, Stephen Mather, the same Stephen Mather who 37 years earlier had originated the Twenty Mule Team promotion with Pacific Coast Borax. Also with them was Horace Albright, a local boy from Bishop, who was Mather's assistant. There were representatives from Pacific Coast Borax and the Union Pacific Railroad. All of them agreed Death Valley was worthy of park status. But Mather was afraid his old company connections would look like favoritism. Death Valley had to wait until 1933 when it became a national monument through the efforts of President Herbert Hoover and President Hoover's new park service director, Horace Albright. After completing his term with the Park Service, Horace Albright went to work with a U.S. Borax subsidiary in Carlsbad, New Mexico.

We at U.S. Borax, the successor to Pacific Coast Borax, share a unique bond with this valley and with the Park Service. Our roots run long and deep. From our mining and industrial operations, to our promotional and tourism campaigns, to our efforts to preserve and protect its scenic wonders. The land on which the National Park Service Visitors’ Center sits was donated by the Borax company, as was the Harmony site and, of course, spectacular Zabriskie Point, named for one of the presidents of Pacific Coast Borax.

So it is with great pride that U.S. Borax, today’s largest supplier of borates worldwide, joins with the National Park Service, the United States Congress, the President of the United States, and all Americans in dedicating this special valley, this place of legends, as one of our newest and largest National Parks. Though the American landscape may change, just as surely as industry has moved from great wagons to giant trucks, we hope and trust that Death Valley will remain forever as a land of spectacular beauty and extraordinary history.

Thank you again on behalf of U.S. Borax for the opportunity to be a part of this historic dedication.
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and the TWENTY MULE TEAM ROLLED

The saga of the twenty mule team began with the discovery of borax in California in 1849. The discovery was uncharacteristic of the thousands of years of desert life and the hours of work that went into the mining. The borax, a sodium borate, was found in the Owens Valley of California. It was a hard and dense mineral that was difficult to extract. The Owens Valley, with its borax deposits, was a remote and isolated area.

Miners and teamsters, who were the backbone of the borax industry, used mule teams to transport the borax from the mines to the processing plants. The mules were well adapted to the harsh conditions of the Mojave Desert, where the temperatures could reach over 100 degrees Fahrenheit. The mules were strong and capable of pulling heavy loads over long distances.

The mules were trained to work in teams of twenty, which was the traditional size for a mule team. The mules worked tirelessly, often for over ten hours a day, to transport the borax to the processing plants. The mules were not only strong but also intelligent, and they were able to work together as a team to complete the task.

The mules were fed a special diet of hay and borax to keep them healthy and strong. The borax was a natural mineral that was rich in calcium and other essential nutrients. The mules were well cared for, and they lived long and happy lives.

The twenty mule team was a symbol of the hard work and dedication of the miners and teamsters. They worked long and hard to bring the borax to the world, and their efforts were rewarded with the success of the borax industry.

There are still remnants of the twenty mule team in the Mojave Desert, where you can see old mine shafts and processing plants. The mules are long gone, but their legacy lives on in the stories of the miners and teamsters who worked so hard to bring the borax to the world.
Those incredible wagons

Perhaps the most difficult problem in designing and building wagons capable of carrying heavy loads of coal over the rough desert and mountainous terrain was the wagon itself. Each wagon was a major project for both men and animals. The wheels, which were typically in pairs and ran along a single track, were designed to be strong enough to support the weight of the wagon and its cargo. The axles were also critical components, designed to be durable and withstand the wear and tear of long journeys. The wagons were equipped with brakes and other safety features to ensure a smooth ride.

Each twenty mule team crew consisted of two men, a driver (one muleskinner) and a swapper. The muleskinner drove the team from the "tack" of the first wagon, while the swapper controlled the movement of the team.

In summary, the wagons were a marvel of engineering and were essential to the development and growth of the west. They were a testament to the ingenuity and hard work of those who designed and built them. The wagons were not just a means of transportation, but also a symbol of the spirit of adventure and exploration that defined the spirit of the west.
Attachment E
The U.S. Borax Wilmington Facility at 300 Falcon Street encompasses approximately 7.6 acres within the industrial Port of Los Angeles, California. The property is bordered to the north by Berth 164, occupied by Valero; to the east by Berths 174 to 181, occupied by Pasha; to the south by Berths 167 to 169, occupied by Shell; and to the west by the Slip No. 1. The subject property contains a grouping of buildings and structures used in the refining and shipping of Borax. The facility is owned and operated by Rio Tinto.

SEE CONTINUATION SHEET

P5a. Photograph or Drawing  (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo:  (view, date, accession #) View to the West, January 2013

P6. Date Constructed/Age and Source:  

P7. Owner and Address:  Private

P8. Recorded by:  (Name, affiliation, and address)

P9. Date Recorded:  January 2013

P10. Survey Type:  (Describe) Reconnaissance Survey

P11. Report Citation:  (Cite survey report and other sources, or enter "none.") Memorandum of Record for the Historical Evaluation of the U.S. Borax Wilmington Facility, 2013

*Attachments:  NONE  Location Map  Continuation Sheet  Building, Structure, and Object Record  Archaeological Record  District Record  Linear Feature Record  Milling Station Record  Rock Art Record  Artifact Record  Photograph Record  Other (List):
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BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 14  *NRHP Status Code 6Z*

*Resource Name or # (Assigned by recorder) U.S. Borax Wilmington Facility

B1. Historic Name: Pacific Coast Borax Company – Wilmington Facility
B2. Common Name: U.S. Borax Wilmington Facility
B3. Original Use: Borax Refinery
B4. Present Use: Borax Refinery

*B5. Architectural Style: Utilitarian Industrial

*B6. Construction History:

The Refinery Building, designed by Albert C. Martin, was built in 1923 and 1924. The Connecting Shed was built by 1952, generally following Martin’s 1923 original design for an addition at that location. The original portion of the Warehouse was built in 1924, with major additions to the north and south by 1952 that generally followed Martin’s 1923 original design for the expansion of the Warehouse. The Wharf Office, designed by Albert C. Martin, was built in 1924. The Power Plant, designed by Albert C. Martin, was built in 1923 and 1924. The original portion of the Bulk Storage Silos structure was built in 1962 and 1963, with a later addition in 1979. Presently, many of the facility’s large multi-pane windows have been in-filled. Non-historic period conduit, ventilation, and industrial equipment have been added to the facility. Other alterations include the replacement of the original board-formed wall texture with a smooth stucco exterior wall treatment as well as the modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment.

*B7. Moved? X No Yes Unknown Date: Original Location: ______________

*B8. Related Features:

The subject property contains a dock along the west boundary that is adjacent to Slip No. 1. Miscellaneous industrial equipment such as tanks, piping, sheds, and a railroad spur are also located within the boundaries of the subject property, which is surrounded by a chain-link fence.


*B10. Significance: Theme N/A Area Los Angeles, CA

Period of Significance N/A Property Type Industrial Facility

Applicable Criteria N/A (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The historical significance of the U.S. Borax – Wilmington Facility was determined by applying the procedure and criteria for Los Angeles Historic-Cultural Monument (LAHCM) and California Register of Historical Resources (CRHR) designation.

Based on site investigations and historic research, the U.S. Borax Wilmington Facility does not appear to possess the requisite significance to be eligible for designation as a LAHCM or listing on the CRHR.

SEE CONTINUATION SHEET

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References:

SEE CONTINUATION SHEET

B13. Remarks: None

*B14. Evaluator: URS Corporation

*Date of Evaluation: January 2013

(This space reserved for official comments.)

DPR 523B (1/95)

*Required information
Architectural Description

**Refinery Building**

The Refinery Building, designed by Albert C. Martin, was built in 1923 and 1924 and is a Utilitarian Industrial-style refinery. It occupies the south end of the subject property and has an east-facing orientation. It is three stories with a rectangular plan. Due to changes in refining technologies since 1924, the resource has undergone extensive alterations and upgrades. The building features a flat roof covered with composition sheet. Distributed across the rooftop are large tanks, pieces of electrical equipment, and conduit visible from the pedestrian right-of-way. At either corner of each elevation, there are groupings of three simple rectangular pilasters extending from the ground level to the roofline. In many cases, the stylized rectangular capital of the pilasters has been removed and the surface of the column has been altered or removed to accommodate industrial equipment.

Fenestration on all elevations includes original, large, multi-pane metal industrial windows with hopper panels near the center of most. A number of the locations where windows once existed have been in-filled, and many of the remaining windows have been altered or retrofitted for equipment installation. The walls of the refinery building no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers the wall surface. The retexturing is most apparent over the locations of in-filled windows. None of the wall surfaces indicate evidence of historic-period signage visible in historic photographs.

The main entry, which is off-centered on the primary (east) façade, is filled with a non-original metal commercial door. The stoop for the main entry extends south passed a large non-original roll top door that is off-centered on the primary façade. This area serves as the East Dock for the Refinery Building. Both the loading dock and main entry are located beneath a corrugated metal awning. A smaller loading station with a non-original metal roll top door is located off-centered on the southern half of the primary façade. At the far south corner of the primary façade is a set of non-original industrial metal double doors beneath a similar corrugated metal awning. At the center and north corner of the primary elevation are two additional non-original single panel metal doors. Large non-historic period conduit, rigging, and other industrial equipment components are attached to the walls.

Although broader, the north elevation has similar characteristics and alterations to the primary façade. These similarities included a substantial amount of window in-fill, non-original stucco texturing on wall surfaces, and a significant level of alteration due to the installation of modern industrial equipment. Along with these changes, a non-original concrete exterior walkway has been installed along the north elevation. This addition extends across the entire elevation and includes a metal handrail separating the platform from an asphalt roadway. Additionally, the rectangular stringcourse that historically spanned the entire center of the north wall has been largely removed to allow for industrial equipment mounting. Additional non-original equipment includes a concentration of conduit and metal framing near the center of the north elevation that connects the Refinery Building with the adjacent Power Plant.

Along with the alterations to the texture and form of the elevations mentioned above, the south and west elevations have both received significant non-original structural additions. With regard to the south elevation, in order to adapt the Refinery Building to new technologies, a two-story processing structure was attached to the wall. The large-scale alteration appears to be two separate tanks supported by a base constructed of steel beams. Access ladders, conduit, and vents extend from the structure to the south elevation. Directly adjacent on the west elevation of the Refinery Building is the Connecting Shed.

**Connecting Shed**

The Connecting Shed was built by 1952, generally following Martin’s 1923 original design for an addition at that location. It is a Utilitarian Industrial-style building. It occupies the southeast portion of the subject property and has a south-facing orientation. It is one story with an L-shaped plan. The building features four consecutive and similar width front-gable roofs covered with composite sheet. Located on the southernmost portion of the roof are electronic equipment and piping. The roof features a plain parapet that is stepped on the south and north elevations and topped with a simple cornice. Mounted on the parapet are non-original spotlights. A simple cornice wraps around the building below the parapet. A sign with a historic photo of the Borax 20-Mule Team and the words “Rio Tinto” are painted on the parapet of the primary (south) façade.
Fenestration on the primary (south) façade includes a number of paired multi-pane, metal-framed, industrial windows, two bays with non-original metal roll top and swing up doors, and an industrial door. The north elevation features four evenly-spaced bays and a number of paired multi-pane, metal-framed, industrial windows. The east elevation is directly adjacent to the Refinery Building and the west elevation is directly adjacent to the Warehouse. The walls of the north and south elevations are covered with non-original corrugated metal sheeting. Large non-historic period conduit, rigging, and other industrial equipment components protrude from the wall. Non-original safety barriers, metal corner braces, and post bollards have been added near bay corners. The north elevation features a single, long awning of corrugated metal sheeting that is supported by steel truss bracing. The awning runs the length of the building connecting with the Warehouse awning and providing cover for a concrete loading dock that also continues from the Warehouse.

**Warehouse**

The original portion of the Warehouse was built in 1924, with major additions to the north and south by 1952 that generally followed Martin’s 1923 original design for the expansion of the Warehouse. It is a Utilitarian Industrial-style warehouse. It occupies the east side of the subject property, beside Slip No. 1, and has an east-facing orientation. It is one story with a narrow rectangular plan. Due to changes in refining technologies since 1924, the Warehouse has undergone extensive alterations and upgrades, including the significant additions by 1952 on the north and south elevations that quadrupled the size of the building. The Warehouse features a side-gabled roof covered with composite sheet. A non-original rooftop structure is located on the northern end of the rooftop. The structure is supported on a steel platform and features a covered conveyor belt that extends from the Bulk Storage Silos structure, a boom that can drop down for ship loading, corrugated-metal sheeted shed-like buildings, and numerous pipes and other industrial features. Like the adjacent Connecting Shed to the southeast and the Wharf Office to the north, the Warehouse roof features a plain parapet that is stepped on the north elevation and topped with a simple cornice. Mounted on the parapet are non-original spotlights. A simple cornice wraps around the building below the parapet.

Fenestration on the east, north, and west elevations includes a number of multi-pane metal industrial windows and evenly-spaced bays with non-original metal roll top doors. The primary (east) façade and the west elevation each feature approximately 29 bays. The north elevation has one bay. The south elevation is directly adjacent to the Connecting Shed. The walls of the east elevation are covered with non-original corrugated and flat metal sheeting. Large non-historic period conduit, rigging, and other industrial equipment components are attached to the walls. Non-original safety barriers, metal corner braces, and post bollards have been added near bay corners. None of the wall surfaces indicate evidence of historic-period signage notable in historic photographs.

The north and west elevations have similar characteristics and alterations as the east elevation. These similarities include non-original metal corrugated sheeting wall covering and non-historic period conduit, rigging, other industrial equipment components, safety barriers, metal corner braces, and post bollards, which have been added near openings and corners. The west elevation features a single, long awning of corrugated metal sheeting that is supported by steel truss bracing. The awning runs the length of the building, providing cover for a raised concrete loading dock.

**Wharf Office**

The Wharf Office, designed by Albert C. Martin, was built in 1924 and is a Utilitarian Industrial-style wharf office. It occupies the northwest corner of the subject property and has an east-facing orientation. It is two stories with a rectangular plan. The resource has undergone some alterations to accommodate the changing needs of the facility. The building features a side-gabled roof covered with composite sheet. Distributed across the roof ridge are approximately seven vents and a hatch or sunroof, all visible in historic photographs. The roof features a plain parapet that is stepped on the south and north elevations and topped with a simple cornice. Mounted on the parapet are non-original cameras and spotlights. A simple cornice wraps around the building below the parapet.

Fenestration on all elevations includes large original multi-pane industrial metal-framed windows with hopper panels near the center of most. They are generally arranged in groupings of three. Many of the windows contain non-original air conditioning units that are supported on metal platforms with metal braces. Two fixed, wood-framed windows are located on either side of the northernmost entrance of the east elevation.
One of the panes has been in-filled with wood. The walls of the Wharf Office no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers the parapet and corrugated metal sheeting covers the walls below the parapet. Numerous tracks of non-original conduit, piping, and other industrial equipment are attached to the walls.

The primary (east) façade has three entries, of which only the northern entry is original. The two southern entries are additions to the building and are filled with single industrial metal doors with one pane. The southernmost entry is covered by a non-original metal security door. The original entry (the northernmost entry) is filled with a wood-framed door with a single light. An original awning protrudes from the wall above the entry. A non-original awning extends over one of the first-story windows.

The south elevation has two original entries: one centered on the first story and one centered on the second story, the latter of which is reached by a metal staircase that replaced an original staircase. The entries are filled with non-original single industrial metal doors with one pane. The north and west elevations have similar characteristics to the other façades but they have no entries.

**Power Plant**

The Power Plant, designed by Albert C. Martin, was built in 1923 and 1924. It is a Utilitarian Industrial-style steam power plant. It occupies the center-north portion of the subject property. It is approximately two stories in height with an L-shaped plan. Due to changes in power generating technologies since 1924, the resource has undergone extensive alterations and upgrades. The building features a slightly barreled roof covered with composite sheet. Distributed across the rooftop are pieces of non-original electrical equipment, vents, piping, and two tall, narrow, metal steam stacks. The roof has a simple parapet on which numerous non-original conduit pipes, other pipes, security cameras, and lights are mounted on or behind.

Fenestration on all elevations includes large rounded, arched, metal-framed windows with two hopper panels near the center. A number of the locations where windows once existed have been in-filled and many of the remaining windows have been altered to accommodate pipes and other industrial equipment. The walls of the power plant building no longer retain their original board-formed concrete texturing. Instead, a modern stucco texture covers the walls, which are beveled at the base. The retexturing is most apparent over the locations of in-filled windows. Seismic bracing bolts are visible on all the walls below the parapet. Evidence of disintegration of the plaster and concrete is visible on some walls.

The power plant has a number of entries on the east elevation, including a non-original metal roll top door, a non-original single industrial metal door with a single pane, and a non-original double metal industrial door with two panes. Four windows have been in-filled on the east elevation. In addition, the original concrete stack adjacent to the east elevation is no longer present. A non-original sign is attached to the east wall and reads “Rio Tinto/Wilmington Operations.” Non-original access ladders, conduit, other piping, lights, vents, and other utility equipment have been attached to the walls.

The north, west, and south elevations have similar characteristics and alterations as the east elevation. These similarities included a substantial amount of window in-fill (three windows in-filled on the north elevation and two windows in-filled on the south elevation), non-historic period stucco texturing on wall surfaces, and a significant level of alteration due to the installation of modern industrial equipment such as non-original access ladders, conduit, other piping, lights, vents, and utility equipment. A non-original metal structure connects the west elevation of the Power Plant to the adjacent Refinery Building to the west.

An electrical substation is located directly to the north of the Power Plant.

**Bulk Storage Silos**

The original portion of the Bulk Storage Silos structure was built in 1962 and 1963, with a later addition in 1979. It is a grouping of 16 tower silos, topped with an industrial building and featuring associated industrial equipment, such as pipes, tanks, railroad car loading bays, and conveyor belts. The structure occupies the northeast portion of the subject property, adjacent to a railroad spur to the east.
The silos are arranged in two groupings: 12 silos on the north, which were first used in 1963 and which are arranged two-by-six; and four silos, which were a 1979 addition, are arranged in a T-shape, and are separated from the other grouping by a gap. The silos are constructed of reinforced concrete and feature cylindrical forms with flat roofs. The silos are approximately 100 feet in height and have approximately 30-foot diameters. The silos have ground-story entries that are filled with double metal industrial doors with single panes. Metal staircases are attached to the sides of each of the silos; the staircases lead to secondary entrances located approximately one-third up the side of the silos. Some of the silos also feature metal access ladders that extend from the ground level to the roof.

The two groupings of silos are attached via a rooftop industrial building, which has a narrow and long rectangular footprint. The building is centered on the roof of the Bulk Storage Silos structure, extending from one end to the other, bridging the gap between the two silo groupings. The industrial building is primarily one-story with some two-story attached small additions. The building has a gabled roof covered with composite sheeting, corrugated metal wall surface, and numerous windows and entries that connect to metal catwalks, stairwells, and other appurtenances such as industrial equipment, small sheds, and structures that are located on the rooftop of the larger silo structure. Conduit, large piping, and security lights are mounted on the walls of building.

A railroad car loading bay, constructed of metal and covered with corrugated metal sheeting, is attached to the structure at the ground-level on the east elevation. Vertical gravity silos and associated piping and equipment are mounted on the flat roof of the loading bay. The west elevation of the structure features numerous ground-level tanks, vertical gravity silos, and other related industrial structures, some mounted on steel frames. A covered conveyor belt clad in corrugated metal sheeting connects the structure with the rooftop of the Warehouse to the west.
**Historic Context**

**U.S. Borax**

In 1962, Thomas Cramer, the first superintendent of the U.S. Borax Wilmington Facility, noted “[t]he story of the Wilmington Refinery is a forty year part of the hundred year history of the borax business in America.” In fact, U.S. Borax traces its origins to 1872 when founder Francis Marion Smith discovered the presence of borate deposits in Nevada. During those initial operations, the raw borate material was refined near the site of its extraction. According to Cramer, refining facilities were built beside marshes in Nevada. By 1883, following the discovery of borates in Death Valley, the refined product was being hauled great distances across the desert by 20-mule teams. Smith founded the Pacific Coast Borax Company (predecessor to Borax Consolidated, which then became U.S. Borax) in 1890. The 20 Mule Team symbol became the trademark of the Pacific Coast Borax Company in 1896.

While exploiting a new source of borate deposits in the Calico Mountains, Smith decided to move away from the traditional onsite refining process to a large-scale refining operation in Alameda, California. The Alameda refinery was purchased about 1883 and expanded by Smith in 1890. The new Pacific Coast Borax Company refinery was sited on Alameda Point in order to take advantage of inland rail connections and convenient access to shipping in the San Francisco Bay. The siting of the Alameda plant marked a key innovation point for the company. From then on, processing no longer occurred on site at the mines but ore was instead transported to a coastal plant for refining and shipping. Additionally, the Alameda facility pioneered the use of reinforced concrete construction, a method that was subsequently used at the Bayonne, New Jersey facility in 1897. Smith resigned from the company in 1914.

After World War I, the company chose to construct a new facility that would have ready access to the ships traveling through the new Panama Canal and would have proximity to raw materials being extracted in Death Valley. The company purchased property on Mormon Island in the Port of Los Angeles. In 1923, construction began on the Wilmington Facility and in 1924 the Alameda refinery was closed. The Bayonne refinery in New Jersey was also phased out.

In 1927, soon after the Wilmington Facility was finished, the company opened an underground borate mine in Boron, California in the Mojave Desert. In 1956, the company became U.S. Borax when it merged with United State Potash Corporation. In 1957, the company built the Boron refinery and borax production was moved to Boron. The Boron Mine was converted to a surface mine in the late 1950s. In 1967, the company was acquired by Rio Tinto. In 1980, U.S. Borax built its borax acid plant. Today, U.S. Borax continues to operate the Boron Mine, which is California’s largest open pit mine.

**U.S. Borax Wilmington Facility**

The U.S. Borax Wilmington Facility was constructed on Mormon Island on land previously used as the Chandler Shipyard, a World War I shipyard. Architect Albert C. Martin was retained to prepare the plans for the new facility, which was to include a refinery building, power plant, warehouse, office building, and a 150-foot stack. Norman B. Patten served as Martin’s building superintendent and G.H. Schulte was the
structural engineer. Davidson Construction was retained as the general contractor. Martin was a master architect; however, the design of the U.S. Borax Wilmington Facility does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963).

The facility was constructed using the same reinforced concrete construction method that the company had employed first at Alameda 32 years previously and subsequently at Bayonne, New Jersey. Because the soil at Mormon Island could not sustain the load of the concrete buildings, piles were first driven below the ground-water line before concrete pads and pedestals were poured. The final design for the refinery called for a 207-by-252-foot building with three stories and a rooftop water tower. Martin’s drawings also planned for a future expansion of the facility, including two additional refinery floors (never built), a lateral expansion on either side of the refinery (later partially constructed as the Connecting Shed and additions to the original Warehouse), and two additional buildings (never constructed). The stack was finished by November 1923. The main components of the buildings were completed on the last day of that same year, six months after the foundations had been finished.11

Meanwhile, the previously-installed boilers in the power plant and the plans for piping and equipment were drawn by Fred Beik by late fall 1923. By February 1924, the first of the equipment, the Sweetland press and Raymond power-mill, were installed in the refinery. Concurrently, the last of the building windows, roofing, and painting were being finished. The bulkhead had been put in and the channel in front of the property dredged during 1923, so construction of the wharf, warehouse, and wharf office building began in 1924. Separately, the Alameda facility was dismantled, and the bulk borax production goods were transferred to Wilmington. On November 1, 1924, the first cargo was loaded onto a ship from the Wilmington Facility.12 On January 28, 1925, a survey map of the Borax Consolidated Wilmington facility was completed, which illustrated the site as containing a Factory (Refinery), Power Plant, Stack, Oil Tank, Office (now Wharf Office), Warehouse, Wharf, and Mud Scow Dock.13 The Wilmington facility produced borax, Borax Soap Chips, BORAXO, bar soap, and borax “glass”.14 The U.S. Borax Wilmington Facility was an early occupant of the Port, but it nevertheless was established years after the port had attained success through the shipping of such commodities as lumber, petroleum, and citrus products.15

Robert Shaw, Wilmington facility manager beginning in 1983, recollected that Borax Consolidated was challenged by Los Angeles in 1935 in regard to ownership of the property.16 The U.S. Supreme Court decided in the company’s favor on November 11, 1935. The company was able to successfully prove that the property was part of the original Mormon Island and was never tideland; therefore, Los Angeles could not claim that the property was “public land” and take ownership. The property is now the only privately-owned property in the Port of Los Angeles.17

Since Martin drafted his designs for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Large additions to the south and north ends of the warehouse building and a Connecting Shed between the Refinery and the expanded Warehouse (generally based on Martin’s 1923 designs for expansions) were constructed by 1952.18 Following a feasibility study undertaken in the early 1960s, U.S. Borax began plans for major terminal facilities at the Wilmington facility.19 Construction began on the terminal (Bulk Storage Silos) in 1962 and the first railcar of product was loaded into the 12-silo structure in 1963.

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10 U.S. Borax, 100 Years, 32-34.
12 Ibid.
13 U.S. Borax, Map of the Property of Borax Consolidated, Ltd. at Los Angeles Harbor, Slip No. 1 (Mormon Island), Wilmington California (map on file, U.S. Borax, 1925).
14 U.S. Borax, 100 Years, 34.
15 Ibid., 32-34.
The 100-foot-tall by 30-foot-diameter concrete silos introduced a massive and substantial change to the property. A large conveying system was constructed at the same time to move the bulk borates from the silos to the holds of ships at the dock. In 1979, an additional four-silo structure was constructed to the south of the original 12-silo structure. Over time, additional alterations have occurred to the subject property and its buildings, including seismic retrofitting of many of the buildings and structures between 1988 and 2004, which also resulted in the removal of the original 150-foot stack near the power plant; introduction of large industrial equipment such as tanks, silos, conveyer belts, and piping; infilling of many of the buildings’ windows and entries; and attachment of conduit, other piping, utility equipment, security lights, cameras, and signage to the exterior walls of the buildings.

Currently, the Wilmington Facility serves as Rio Tinto’s primary North American shipping facility. The refinery produces 16 specialty products, including wood preservatives and flame retardants, which can be stored in the facility’s 35,000 tons of storage capacity before being transferred to docked ships for export.

LACHM Evaluation

LAHCM Criterion 1: The property was assessed under LAHCM Criterion 1 for its potential significance as a property in which the broad cultural, political, economic, or social history of the nation, state, or community is reflected or exemplified.

Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of broad trends of the nation, state, or community. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was not an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point.

According to historical research, the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax Wilmington Facility does not reflect or exemplify broad cultural, political, economic, or social history of the nation, state, or community. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 1.

LAHCM Criterion 2: The property was assessed under LAHCM Criterion 2 as a property which is identified with historic personages or with important events in the main currents of national, state, or local history.

Historical research revealed that the property does not appear to be directly associated with the significant contributions from the life and career of an individual, such as Francis Marion Smith, who may have made important contributions to the history of the United States, California, or Los Angeles County. In fact, Smith resigned from Borax Consolidated in 1914, ten years before completion of the facility. Other individuals associated with the property, such as facility supervisors, were not revealed to have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 2 for association with historic personages.

20 U.S. Borax, 100 Years, 36.
21 Shaw, “Wilmington Recollections.”
Currently, non-historic features such as 100-foot-tall Bulk Storage Silos structure, major alterations to the buildings, and industrial equipment obscure Martin’s contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect’s work that influenced his age. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 4.

CRHR Evaluation

CRHR Criterion 1: The property was assessed under CRHR Criterion 1 for its potential significance as a part of a historic trend that may have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of a significant event associated with the trends or events that have made a significant contribution to the broad patterns of history. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery’s completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point. According to historical research, no significant events occurred at its location and the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax Wilmington Facility is not associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing in the CRHR under Criterion 1 or to be considered a historical resource for purposes of CEQA.

CRHR Criterion 2: The property was assessed under CRHR Criterion 2 for its association with the lives of persons important to local, California, or national history. Historical research revealed that the property does not appear to be directly associated with the significant contributions from the life and career of an individual, such as Francis Marion Smith, who may have made important contributions to the history of the United States, California, or Los Angeles County. In fact, Smith resigned from Borax Consolidated in 1914, ten years before completion of the facility. Other individuals associated with the property, such as facility supervisors, were not revealed to have made a significant contribution to the broad patterns of California’s history and cultural heritage. As such, the property does not appear to be eligible for listing in CRHR under Criterion 2 or to be considered a historical resource for purposes of CEQA.

CRHR Criterion 3: The property was assessed under CRHR Criterion 3 for embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master or possessing high artistic values. To determine its architectural significance, the U.S. Borax Wilmington Facility requires evaluation as individual buildings designed in the Utilitarian Industrial-style, as well as individual components to a potential historic district. Based on historic research and field survey, the U.S. Borax Wilmington Facility does not appear to possess distinctive characteristics of a significant Utilitarian Industrial design. While the plans for the U.S. Borax Wilmington Facility depict several characteristics typical of the Utilitarian Industrial-style typical in California in the 1920s, the property, in its current form, lacks the majority of these distinctive architectural characteristics and its architectural integrity has been significantly compromised. Presently, many of its large multi-pane windows have been in-filled. The non-historic period conduit, ventilation, and industrial equipment added to the facility have obstructed and significantly altered historic-period materials.
Currently, non-historic features such as 100-foot-tall Bulk Storage Silos structure, major alterations to the buildings, and industrial equipment obscure Martin's contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin's original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect's work that influenced his age. As such, the property does not appear to be eligible for listing as an LAHCM under LAHCM Criterion 4.

**CRHR Evaluation**

**CRHR Criterion 1:** The property was assessed under CRHR Criterion 1 for its potential significance as a part of a historic trend that may have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Though the U.S. Borax Wilmington Facility has been located at the property since 1924, the industrial complex is not representative of a significant event associated with the trends or events that have made a significant contribution to the broad patterns of history. As indicated previously, the U.S. Borax Wilmington Facility was constructed on Mormon Island to take advantage of ready access to the Panama Canal and the proximity to raw materials being extracted in Death Valley. At the time of the refinery's completion, international shipping to and from the Port of Los Angeles through the Panama Canal had been common practice for about a decade. The U.S. Borax Wilmington Facility was built years after several other more important buildings and structures were already constructed, shipping such commodities as lumber, petroleum, and citrus products. In addition, the process of transporting ore extracted from Death Valley to a coastal plant for refining and shipping was an innovation facilitated by the subject property. In fact, this method was popularized in the late 1800s when 20-mule teams traversed the desert to carry the minerals to rail lines that would ultimately deliver the ore to the original Pacific Coast Borax Company Refinery on Alameda Point.

According to historical research, no significant events occurred at its location and the property is not representative of any type of achievement or development associated with industrial refining or commerce. Therefore, the U.S. Borax Wilmington Facility is not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. As such, the property does not appear to be eligible for listing in the CRHR under Criterion 1 or to be considered a historical resource for purposes of CEQA.

**CRHR Criterion 2:** The property was assessed under CRHR Criterion 2 for its association with the lives of persons important to local, California, or national history. Historical research revealed that the property does not appear to be directly associated with the significant contributions from the life and career of an individual, such as Francis Marion Smith, who may have made important contributions to the history of the United States, California, or Los Angeles County. In fact, Smith resigned from Borax Consolidated in 1914, ten years before completion of the facility. Other individuals associated with the property, such as facility supervisors, were not revealed to have made a significant contribution to the broad patterns of California's history and cultural heritage. As such, the property does not appear to be eligible for listing in CRHR under Criterion 2 or to be considered a historical resource for purposes of CEGA.

**CRHR Criterion 3:** The property was assessed under CRHR Criterion 3 for embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master or possessing high artistic values.

To determine its architectural significance, the U.S. Borax Wilmington Facility requires evaluation as individual buildings designed in the Utilitarian Industrial-style, as well as individual components to a potential historic district. Based on historic research and field survey, the U.S. Borax Wilmington Facility does not appear to possess distinctive characteristics of a significant Utilitarian Industrial design. While the plans for the U.S. Borax Wilmington Facility depict several characteristics typical of the Utilitarian Industrial-style typical in California in the 1920s, the property, in its current form, lacks the majority of these distinctive architectural characteristics and its architectural integrity has been significantly compromised. Presently, many of its large multi-pane windows have been in-filled. The non-historic period conduit, ventilation, and industrial equipment added to the facility have obstructed and significantly altered historic-period materials.
These alterations include the replacement of the original board-formed wall texture with a smooth stucco exterior wall treatment as well as the modification and removal of the stringcourse and rectangular capitals for the installation of industrial equipment. The absence of these original designed features undermines the distinctive architectural characteristics of the U.S. Borax Wilmington Facility. Additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Also, the simple, rectangular chimney was not depicted in the 1924 drawings and does not match the original design of the building. The modern alterations and upgrades to the refinery complex detract from its intended architectural character.

Further, while the facility was constructed using reinforced concrete construction method, the facility is a late example of this method of construction. In fact, the company had pioneered the method at the Alameda facility 32 years previously and at Bayonne, New Jersey 27 years before, and by 1924, the construction method was relatively common.

While the design of the U.S. Borax Wilmington Facility was undertaken by Albert C. Martin, a master architect, the property does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his major contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963). Moreover, since Martin drafted his plan for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Currently, non-historic features such as 100-foot tall Bulk Storage Silos structure, major alterations to the buildings, and industrial equipment obscure Martin’s contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect’s work.

Given the lack of integrity and the numerous alterations to the U.S. Borax Wilmington Facility, the property no longer retains its character-defining features and does not embody notable architectural designs attributed to Martin’s significant works. Along with the 1927 Inn at Furnace Creek which he crafted for the Pacific Coast Borax Company in Death Valley, Martin is known for his major contributions to the Los Angeles skyline with his designs of the Los Angeles City Hall (1926), St. Vincent’s Church (1923), and the Department of Water and Power Building (1963). Moreover, since Martin drafted his plan for the refinery in 1923, large-scale changes to the property have undermined the architect’s original design intent. Currently, non-historic features such as 100-foot tall Bulk Storage Silos structure, major alterations to the buildings, and industrial equipment obscure Martin’s contribution. Pre-1952 additions to the Warehouse and the Connecting Shed, though generally based on Martin’s original plans, are not true representations of the original design. Therefore, although portions of the U.S. Borax Wilmington Facility were designed by Martin, the refinery is not a good representation of the master architect’s work.

CRHR Criterion 4: The property was assessed under CRHR Criterion 4 for the potential to yield or likelihood to yield information important to prehistory or history of the local area, California, or the nation.

The U.S. Borax Wilmington Facility does not appear to have the potential to yield important information about the development of borate refining or the Port of Los Angeles that is not readily available and presented previously. Therefore, the property does not appear to be eligible for listing in the CRHR under Criterion 4 or to be considered a historical resource for purposes of CEQA.

For a property to be eligible for listing in the CRHR, it must also retain its historic integrity in addition to meeting one of the CRHR criteria. The CRHR traditionally recognizes a property’s integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. Though the facility does not meet the criterion for eligibility to the CRHR, the following summarizes its historic integrity analysis:

**Location** is defined as the place where the historic-period property was constructed or the place where the historic event took place. The subject property has not been moved; therefore, it retains its integrity of location.

**Design** is defined as the composition of elements that constitute the form, plan, space, structure, and style of a property. The form, plan, and space of the property have been altered by several additions and different periods of development. While some of the property’s design features remain (such as some stepped parapets, cornices, and several rectangular capitals) the form, plan, space, and structure have been significantly compromised as a result of upgrading and adapting the facility to new refining technologies.

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DPR 523L (1/95)
Setting is defined as the physical environment of a historic-period property that illustrates the character of the place. The refinery was built in an industrial port area of Los Angeles. Currently, the property retains its setting. Due to several episodes of development and re-development, it does not retain the setting associated with the exponential growth of the port in the early 1900s following the opening of the Panama Canal.

Materials are defined as the physical elements combined in a particular pattern or configuration to form the historical resource during a period in the past. Many of the original materials have been altered or removed, such as a decorative wall features and board-formed concrete textured walls. Also, the addition of new industrial equipment and structures such as the Bulk Storage Silos has introduced materials not historically associated with the U.S. Borax Wilmington Facility.

Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. The property does not represent physical evidence of the crafts of a given period of history.

Feeling is defined as the quality that a historic-period property has in evoking the aesthetic or historic sense of a past period of time. The property in its present form does not evoke a historic sense of feeling, but rather that of a relatively recently constructed refining facility.

Association is defined as the direct link between a property and the event or person for which the property is significant. While the property is associated with Albert C. Martin, the property in its present form does not convey a direct link with the prominent architect.

Overall, while the facility has retained some aspects of historic integrity, the property does not appear to meet any of the CRHR or LAHCM criteria, and therefore is not considered a historical resource for purposes of CEQA.

B12. (Continued)


Borax Consolidated, Ltd. v. Los Angeles, 296 U.S. 10 (1935).


*B12. (Continued)


Attachment F
References Consulted


Borax Consolidated, Ltd. v. Los Angeles, 296 U.S. 10 (1935).


—. Map of the Property of Borax Consolidated, Ltd. at Los Angeles Harbor, Slip No. 1 (Mormon Island), Wilmington California. Map on file, U.S. Borax, 1925.

Jeremy Hollins, MA
Senior Architectural Historian/ Architectural History Team Lead

Overview
Jeremy Hollins is a Secretary of Interior Professional Qualified Architectural Historian for URS’ San Diego office. Since 2003, Mr. Hollins has performed numerous historic evaluations, context studies, and determinations of eligibility and effect for a range of resources based on local, state, and National Register criteria and through technical reports, DPR 523 series forms, HABS reports, cultural landscape reports, historic structures reports, and resolution documents. He has a detailed knowledge of the laws and ordinances which affect historic properties, such as Section 106 of the NHPA, CEQA, NEPA, Section 4(f), California Public Resources Code, State Historic Building Code, and the Secretary of Interior Standards for the Treatment of Historic Properties. Additionally, two academic journals have published Mr. Hollins’ work, and he was an adjunct instructor in ‘World Architectural History’ at the New School of Architecture before coming to URS in 2006.

Project Specific Experience
Verizon Wireless, Telecommunication Projects – CA and NV.: Architectural History Task Manager on over 95 intensive architectural history field surveys in California and Nevada for telecommunication projects’ direct Areas of Potential Effect (APE) and viewshed (indirect APE). Projects completed as part of Section 106 of the NHPA and the FCC Programmatic Agreement with the California Office of Historic Preservation (OHP). Conducted and oversaw archival research, evaluated the projects’ APE for eligibility for listing in the NRHP and California Register of Historic Resources (CRHR), identified effects, completed appropriate DPR 523 forms, drafted the reports for submission to OHP, and provided technical editing expertise. Resources identified and evaluated have dated from the late nineteenth century to the recent past, were located in various settings (dense urban, suburban, rural, and industrial), and have included numerous property types such as residential and commercial buildings, churches, educational institutions, hospitals, water towers, windmills, farm and ranch landscapes, an oil refinery, and irrigation canals. Responsible for scoping, budget and tasks management, client/agency interaction, and submission of compliance materials (2008-Present)

Brightsource Solar Energy, Rio Mesa Solar – Blythe, CA.: Oversaw architectural history field survey and archival research as architectural history task manager for a large solar project in the Colorado Desert (partially within BLM land) in accordance with Section 106 of the NHPA, NEPA and, CEQA. Oversaw architectural history field survey of project footprint, transmission line and substation locations, and half-mile buffer. Oversaw historic research and community consultation, and the recordation and evaluation of approximately 30 cultural resources,
including historic-age transmission lines, canals and irrigation ditches, historic roads, mines, and borrow pits. (2011)

**FAA, San Francisco International Airport Runway Safety Area Program – San Francisco, CA.:**
Task manager for reconnaissance survey of the historic-age runways, taxiways, canal, and approach-lighting trestles within the project APE; evaluated the airport facilities pursuant to Section 106 of the NHPA, NEPA, and CEQA; assessed effects and impacts from the proposed undertaking; completed DPR 523 forms; and authored the Historic Architecture Survey Report. (2011)

**Los Angeles Unified School District, Alameda Transportation Relocation Project – Historical Architecture Assessment – Los Angeles, CA.:**
Oversaw a historic architecture assessment in accordance with CEQA and according to City of Los Angeles criteria for listing as a historical or cultural monument. Managed an intensive architectural history survey, archival research, and evaluation. Authored the letter report to assess the significance of the three mid-twentieth century light industrial buildings on the site and any project impacts according to CEQA. (2011)

**National Oceanic and Atmospheric Administration (NOAA), Integrated Water Resources Science and Services (IWRSS), University of Alabama Section 106 Compliance – Tuscaloosa, AL.:**
Leader of project planning and photo guidance for a desktop evaluation of eligibility and effect pursuant to Section 106 of the NHPA for buildings associated with the mid-nineteenth century Bryce Hospital (Alabama State Hospital for the Insane) NRHP-eligible historic district. Task manager for resolution of adverse effects and completing SHPO consultation regarding the necessary HABS standards. (2011)

**Caltrans and Alameda Corridor Transportation Authority, HAER, Level II, for the Commodore Schuyler F. Heim Bridge, Schuyler Heim Bridge Replacement and SR-47 Expansion Project – Long Beach, CA.:**
Managed HAER for Commodore Schuyler F. Heim Bridge, a 1948 steel vertical lift bridge eligible for listing in the NRHP, to fulfill NHRA Section 106 mitigation requirements. The study was completed consistent to the specific guidelines and requirements of the United States Department of Interior and Library of Congress for a Level II HAER and included written historical and descriptive data, 5-by-7” large-format photographs and negatives, and 4-by-5” large-format photographic copies of as-built drawings and negatives. Oversaw project planning (client meetings, site visits, access permits, contract and engagement with photographer), facilitated field work, archival research, report drafting and editing and archival processing. Project required extensive FHWA, Caltrans, and Port of Los Angeles-Port of Long Beach coordination and consultation. Project was nominated for a URS Pyramid Award for Technical Excellence. (2010-2011)
Caltrans and City of Santa Ana, Bristol Street HPSR and HRER, Phase 3 and Phase 4 – Santa Ana, CA. Task manager for an intensive architectural history field survey of the direct APE and a reconnaissance survey of the indirect APE in accordance with the Programmatic Agreement between the FHA, the Advisory Council on Historic Preservation, the California OHP, and Caltrans. Managed archival research, wrote a historic context, evaluated the APE for eligibility for listing in the NRHP and the CRHR (or as historical resources for purposes of CEQA), recorded 66 resources (primarily early to mid-century residences in planned subdivisions) on the appropriate DPR 523 forms, and authored the HPSR and HRER. Adapted unique approach for recordation based on historic subdivisions and property types to facilitate and streamline compliance. (2010-2011)

Caltrans and SANDAG, Lenwood Road HPSR, ASR, and HRER – Barstow, CA.
Task manager for cultural resources studies, and preparation of HPSR, ASR, and HRER. Oversaw archival research, historic context, evaluated the project APE for eligibility for listing in the NRHP and the CRHR (or as historical resources for purposes of CEQA), recorded forty-one resources (Historic Route 66-related commercial buildings and single-family residences) on the appropriate DPR 523 forms, and drafted the Historic Resources Evaluation Reports and Historic Properties Survey Reports. (2009-2011)

Pio Pico Energy Center, LLC, Pio Pico Energy Center, Otay Mesa – San Diego County, CA:
Supervised an intensive architectural history field survey of the project survey area in accordance with CEQA and CEC guidelines. Oversaw archival research, evaluated the project APE for eligibility for listing in the CRHR or as a historical resource for purposes of CEQA, recorded two new resources (circa 1909 ranch complex and 1960 ranch-style residence) and re-recorded a third (historic road) on the appropriate DPR 523 forms, and drafted the architectural history portion of the cultural resources technical report for submission to the CEC. (2010-2011)

FEMA, Lake Valley Roof Replacement – Lake Valley Fire Protection District, CA:
Managed and planned strategic tasks man tasks for preliminary NHPA Section 106 compliance evaluation of project involving hundreds of mid-twentieth century recreational residences and roof replacements. (2010-2011)

FEMA, Marcucci – Jackson, CA:
Completion of Section 106 studies per the FEMA Programmatic Agreement for flood damage control (culvert replacement). Prepared Section 106 compliance materials, including findings memorandum, APE maps, DPR 523 series forms, correspondence records, and historic research (2010)
FEMA, Sutter Creek Broad Storm Drain Diversion – Sutter Creek, CA.:  
Managed Programmatic Agreement between FEMA, the California OHP, the California Governor's Office of Emergency Services, and the Advisory Council on Historic Preservation for proposed flood damage control (culvert drainage system alterations near a NRHP-eligible creek wall and historic district) tasks. Prepared Section 106 compliance materials, including findings memorandum, APE maps, DPR 523 series forms, correspondence records, and historic research (2010).

FEMA, Fairfax Pavilion – Fairfax, CA.:  
Completion of Section 106 studies per the FEMA Programmatic Agreement for seismic retrofit to NRHP-eligible property). Prepared Section 106 compliance materials, including findings memorandum, APE maps, DPR 523 series forms, correspondence records, and historic research (2010).

FEMA, Lake Elsinore Seismic Retrofit – Lake Elsinore, CA.:  
Managed Programmatic Agreement between FEMA, the California OHP, the California Governor's Office of Emergency Services, and the Advisory Council on Historic Preservation to proposed seismic retrofit tasks for preliminary NHPA Section 106 compliance evaluation of project involving the city hall buildings. (2010).

Caltrans and Riverside County Transportation Department, Clay Street Grade Separation Project – County of Riverside, CA.:  
Task manager for cultural resources studies, and preparation of HPSR, ASR, and HRER. Oversaw archival research, historic context, evaluated the project APE for eligibility for listing in the NRHP and the CRHR (or as historical resources for purposes of CEQA), recorded 5 resources on the appropriate DPR 523 forms, and drafted the Historic Resources Evaluation Report and Historic Properties Survey Reports. (2010).

United States Postal Service, USPS San Diego Midway Processing and Distribution Facility Property – San Diego, CA.:  
Oversaw NRHP eligibility (including Criterion Consideration G) and effects for NHPA Section 106 compliance for the proposed disposition of the USPS San Diego Midway Processing and Distribution Facility property, which contained a large 1972 Brutalism and New Formalism-style building. Supervised a records search, Native American consultation, historic research, evaluation, integrity analysis, assessment of adverse effects, and drafting of report. (2010).

Apex Energy Group, Pio Pico Energy Center – Chula Vista, CA.:  
Oversaw an intensive architectural history field survey of the project’s APE in accordance with CEQA and the CEC guidelines. Supervised archival research, evaluated the project APE for eligibility for listing in the CRHR or as a historical resource for purposes of CEQA, recorded three resources (1897 reservoir and 1919 dam, late-1950s public park facilities,
and early twentieth-century livestock pens) on the appropriate DPR 523 forms, and drafted the architectural history portion of the cultural resources technical report for submission to the CEC. (2009-2010)

**FEMA Santa Maria Seismic Retrofit–Santa Maria, CA.:**

**Tessera Solar, Imperial Valley Solar (formerly Solar II) – El Centro, CA.:**
Supervised archival research and compiled findings regarding Juan Bautista de Anza National Historic Trail and historic gravel mines in the project APE and vicinity pursuant to Section 106 of the NHPA, NEPA, and CEQA. Input archaeological field data to DPR 523 form database. (2009)

**Naval Air Facility El Centro Fire Station – El Centro, CA.:**
Task manager for background research to evaluate eligibility of historic-age utilitarian industrial buildings at Naval Air Facility El Centro. Manager and oversaw the evaluation and architectural history description for technical report for fire station project. (2011)

**California High Speed Rail Authority, High Speed Train – Sylmar to Palmdale, CA.:**
Task manager for field reconnaissance data analysis, records search review, and cultural resource location map revisions pursuant to Section 106 of the NHPA and CEQA. (2009)

**Lost Hills Solar, Lost Hills – Kern County, CA.:**
Facilitated research and drafted the historic context pursuant to CEQA. (2009)

**Clay Street Grade Separation, Riverside County Transportation Department, Riverside County, CA.:**
*Cultural Resources Task Manager (URS Corporation)*
Performed Section 106 Compliance Study for Riverside County Transportation Department for the at-grade crossing of Clay Street with the Union Pacific Railroad. Prepared HPSR, ASR, and DPR 523 series forms for project per Caltrans/FHWA guidelines. Developed historic context and performed determination of eligibility, analysis of integrity, and identification of effect. (2010)
Westside Extension Cultural Resources Technical Report and Historic Survey Report, Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles, West Hollywood, Beverly Hills, Santa Monica, and the County of Los Angeles, CA.:

Architectural History Task Leader (URS Corporation)

Led architectural history tasks for the Los Angeles Metro Westside Extension project, which involved the planning and design of a heavy-rail subway connecting City of Los Angeles, West Hollywood, Beverly Hills, Santa Monica, and the County of Los Angeles. Responsibilities include Metro, FTA, and SHPO coordination/meetings; authoring project Programmatic Agreement; organizing field survey activities and background research; and authoring the Section 106 of the NHPA, NEPA, and CEQA technical studies. Field survey activities and background research required development of project-specific field survey forms, photograph protocols, architectural style guide, APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, and impact analysis. In total, the project identified and evaluated a total of 91 NRHP-listed, -eligible, or contributing resources, and over 200 non-significant historic-period properties. (2009-2010)

NHPA Section 106 Compliance for ARRA Projects Undertaken by National Railroad Passenger Corporation (Amtrak). CA, WA, NM.:

Architectural Historian (URS Corporation)

West Coast lead for California, Oregon, Washington, and New Mexico National Historic Preservation Act Section 106 consultation and State Historic Preservation Office (SHPO) coordination regarding Amtrak’s receipt of $1.3 billion in American Recovery and Reinvestment Act (ARRA) funds under an expedited timeline for receive ARRA funding. Responsibilities included field assessments/built environment surveys with engineering teams; development of design guidelines per project based on the Secretary of the Interior’s Standards for Rehabilitation; and completion of Section 106 compliance materials (letter reports). Project required extensive coordination with SHPOs (e.g., CA, WA, and NM). SHPOs) to ensure Section 106 concurrence (No Adverse Effect to Historic Properties) was received in less than 30 days for each project. In total, project involved alterations and additions to nearly 7 NRHP-eligible and -listed properties (e.g., Los Angeles Union Station). Project was nominated for a URS Pyramid Award for Innovation. (2009-2010)

California High-Speed Train Project EIR/EIS-Los Angeles to Palmdale Segment, California High-Speed Rail Authority, Los Angeles County, CA.:

Architectural History Task Leader (URS Corporation)

Led architectural history tasks for the CA High Speed Train Palmdale to Los Angeles Union Station. Responsibilities include sub-consultant management; organizing field survey activities and background research; and authoring the technical reports and EIR/EIS sections. Field survey activities and background research required development of project-specific field survey forms, photograph protocols, architectural style
guide, APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, and impact analysis. (2009-Present)

**BNSF Tehachapi Cultural Resources Assessment, Kern County, CA.:**
*Architectural Historian (URS Corporation)*
Architectural historian for the evaluation of built environment resources and features located within APE for an eleven mile addition of a double-track in the Tehachapi area, near the Tehachapi Loop. Developed historic context and performed determination of eligibility, integrity analysis, and identification of effect. Prepared DPR 523 series forms and co-authored the technical reports per Caltrans Division of Rail CEQA-level standards. Project required complex evaluation of Cesar Chavez former office and gravesite, involving Criterion Considerations C, D, E, F G. (2008-Present)

**California High-Speed Train Project EIR/EIS-Fresno to Bakersfield Segment, California High-Speed Rail Authority, CA.:**
*Architectural Historian (URS Corporation)*
Technical reviewer for the Section 106, NEPA, and CEQA studies for the High Speed Train Fresno to Bakersfield segment. (2010)

**Alosta Avenue Bridge Section 106 Compliance, LADPW, Los Angeles County, CA.:**
*Architectural Historian (URS Corporation)*
Performed Section 106 Compliance Study for LADPW for the seismic retrofit of a 1929 Plate-Girder bridge and the California Central Railroad. Prepared HPSR and DPR 523 series forms for project per Caltrans guidelines. Developed historic context and performed determination of eligibility, analysis of integrity, and identification of effect. (2008)

**Long Beach Blvd. Bridge Section 106 Compliance, LADPW, Los Angeles County, CA.:**
*Architectural Historian (URS Corporation)*
Performed Section 106 Compliance Study for LADPW for the seismic retrofit of a 1932 Warren truss Bridge and the Union Pacific Railroad. Prepared HPSR and DPR 523 series forms for project per Caltrans guidelines. Developed historic context and performed determination of eligibility, analysis of integrity, and identification of effect. (2008)

**Willow Street Bridge Section 106 Compliance, LADPW, Los Angeles County, CA.:**
*Architectural Historian (URS Corporation)*
Performed Section 106 Compliance Study for LADPW for the seismic retrofit of a 1932 Warren truss Bridge and the Union Pacific Railroad. Prepared HPSR and DPR 523 series forms for project per Caltrans guidelines. Developed historic context and performed determination of eligibility, analysis of integrity, and identification of effect. (2007)
Palomar Road Widening Cultural Resource Survey, County of Riverside, Riverside County, CA.:
Architectural Historian (URS Corporation)
Performed historic research and CRHR and NRHP determination of eligibility for a 19th century rural (garden) cemetery (historic designed landscape) in Wildomar. NRHP evaluation required application of Criterion Consideration D: Cemeteries. Information was incorporated into DPR 523 series forms and final technical report. (2007)

California High-Speed Train Project EIR/EIS Methodology and Detailed Work Plan, Federal Rail Authority and High-Speed Train Authority, Statewide, CA.:
Architectural Historian (URS Corporation)
Prepared Architectural History Methodologies for the completion of the state-wide Section 106, NEPA, and CEQA compliance of the High Speed Train Project EIR/EIS. Developed research, survey, identification, evaluation, and consultation methodologies for completion of the project, as well as identified possible constraints. Also prepared the Detailed Work Plan for the LA-Palmdale Segment Project EIR/EIS. (2007)

US-101/McCoy Lane Interchange Project ASR and HPSR, Caltrans Santa Barbara County, CA.:
Architectural Historian (URS Corporation)
Prepared the Historic Context for a Section 106, NEPA, and CEQA compliance study for improvements to the US-101/McCoy Lane interchange. Performed primary and secondary sections. The historic context examined the development of oil prospecting in the Santa Maria Valley and the development and operation of the Battles Plant Facility, which was adjacent to the APE. (2007)

US 101/SR 46W Interchange Improvement, City of Paso Robles, Paso Robles, CA.:
Architectural Historian (URS Corporation)
Performed Section 106 Study for proposed undertaking. Survey discovered 5 previously unrecorded historic properties and evaluated the resources within 2 historic contexts. Performed determination of eligibility, identification of effect, analysis of integrity, and recommended mitigation measures for project. Completed DPR 523 series forms, HRER, and HPSR for Caltrans. (2006)

2701 North Harbor Drive Demolition Project EIR, San Diego Unified Port District and San Diego County Regional Airport Authority, City of San Diego, CA.:
Cultural Resources Task Manager/Architectural Historian (URS Corporation)
Served as Task Manager for CEQA-level cultural resources assessment. Performed fieldwork and authored Cultural Resources EIR section and technical report for the demolition of 50 structures at San Diego International Airport. Project considered potential effects to a National Register-eligible historic district (comprised of 17 properties). Duties included coordination of field survey, CHRIS records search, Native
American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, and development of mitigation measures. (2008-2009)

Phase I Archaeological Assessment of Nuevo Business Park II, Private Client, Riverside, CA.:  
Architectural Historian (URS Corporation) 
Performed CEQA-level cultural resource assessment of 5 rural historic-period landscapes associated with agricultural/subsistence activities in Riverside County. Developed historic context on Riverside County’s commercial agriculture industry, performed built environment survey, recorded and evaluated resources through DPR 523 series forms, and produced a technical report per County of Riverside Planning Department regulations. (2008)

Anaheim Historic Resource Evaluation, City of Anaheim, Orange County, CA.:  
Architectural Historian (URS Corporation) 
Performed CEQA-level cultural resource assessment for three historic-period residences (Tudor Revival, modern ranch, contemporary style) within the City of Anaheim. Performed background research, wrote historic context on northeast Anaheim’s transformation from agricultural to industry in the mid-20th century, performed built environment survey, recorded and evaluated resources through DPR 523 series forms, and produced a technical report. (2007)

Space Shuttle Program NEPA, Section 106, and 110 Compliance, NASA, Third Party Peer Review of Technical Reports:  
Architectural Historian (URS Corporation) 
Performed third party NEPA, Section 106 and Section 110 review of technical reports for NASA for the decommissioning of its Space Shuttle Program properties. Reviewed properties per Criterion Considerations B (Moved Properties) and G (Properties less than 50 years), federal government definition of personal properties, and as geographic historic districts. Space Shuttle Program properties were located at Dryden Flight Research Center (Edwards, CA), White Sands Space Harbor, and White Sands Test Facility (Las Cruces, NM). (2007)

Pacific Gateway Cargo Center, Ontario International Airport Construction Monitoring and Treatment Plan, Ontario International Airport, Ontario, CA.:  
Architectural Historian (URS Corporation) 
Authored construction monitoring and treatment plan for subsurface features and built environment. Plan was for the redevelopment of 96 acre site, and included monitoring guidelines for construction/grading, and a visual inspection program for surrounding historic resources. Plan encompassed entire building process from pre-construction meetings to post-construction reports. (2006)
West Moreland Clean Harbors Landfill Expansion Cultural Resource Assessment, Private Client, West Moreland, CA.:  
Architectural Historian (URS Corporation)  
Performed CHRIS Center Records Search for Study Area for proposed landfill site. Results of Record Search were tabulated and used for cultural resource assessment of Study Area. (2006)

La Posada Hotel Engineering Contingency Plan, Private Client, Winslow, AZ.:  
Architectural Historian (URS Corporation)  
Planned and wrote an Engineering Contingency Plan for the La Posada Hotel (within the La Posada National Register District) for the removal of oil seepage from a raised concrete foundation. Plan provided scope, costs, and recommended Rehabilitation and Restoration treatments (per Secretary of Interior Standards for the Treatment of Historic Properties). Project required informal consultation with AZ SHPO and Materials Contractors. (2006)

IERF Building Historic and Architectural Documentation (HABS), University of California, Irvine, Irvine, CA.:  
Architectural Historian (URS Corporation)  
Performed equivalent of HABS Level 2 survey of a 1986 Frank Gehry-designed academic complex at the University of California – Irvine. Responsible for architectural investigation, physical history, historic context, and coordination with HABS photographer. (2006)

Uptown San Diego Historic Reconnaissance Survey, City of San Diego, San Diego, CA.:  
Architectural Historian (URS Corporation)  
Historian for the identification and evaluation of 20,000 resources in San Diego. Responsible for jointly preparing survey’s first volume, which included “Data Analysis, Phase Implementation, Methodology, Styles Guide/Context, and Proposed Districts/Conservation Overlays.” Evaluated and grouped resources based on association to historic context, and drafted district and overlay records, contributing elements, boundaries, and integrity. (2005-2006)

100MW Solar/Bio-Waste Power Plant, Spinnaker Energy, Inc., Fresno County, CA.:  
Cultural Resources Task Manager (URS Corporation)  
Served as Task Manager for cultural resources assessment. Performed fieldwork and co-authored Cultural Resources AFC section and technical report for a proposed hybrid solar and bio-fuel power plant in Fresno County. Deliverables were submitted to the CEC in support of a CEQA-level assessment. Duties included coordination of field survey, CHRIS records search, Native American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, analysis of effects, and development of mitigation measures. (2008)
Carrizo Energy Solar Farm AFC Data Requests, Ausra, Inc., San Luis Obispo County, CA.:
Architectural Historian (URS Corporation)
Performed additional historic research and field surveys for CEC AFC Data Requests to determine the presence of a potential cultural landscape within the northern Carrizo Plains near the vicinity of the Project Area. Research efforts included a review of primary and secondary sources, development of an evaluative context, and recordation and evaluation of 8 potential contributing resources through DPR 523 series forms. Recordation and evaluation followed National Register Bulletin 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes. (2008)

Carrizo Energy Solar Farm AFC Supplemental Filing, Ausra, Inc., San Luis Obispo County, CA.:
Cultural Resources Task Manager (URS Corporation)
Served as Task Manager for cultural resources assessment. Performed CHRIS records search and authored Cultural Resources AFC section for a 150-mile transmission line corridor intended for use as part of the 177 MW solar power project located in San Luis Obispo County, California. (2008)

Confidential Solar Energy Project, Confidential Private Client, Imperial County, CA.:
Architectural Historian (URS Corporation)
Performed primary and secondary source research to develop a historic context for the project area in support of a CEQA-level assessment for submission to the CEC. Context focused on Imperial County transportation/circulation networks (Highway 80), local military activities, irrigation agriculture, and the San Diego-Arizona Railroad. (2008)

Carrizo Energy Solar Farm 177 MW Solar Plant, CEC, Ausra, Inc., San Luis Obispo County, CA.:
Cultural Resources Task Manager (URS Corporation)
Served as Task Manager for cultural resources assessment. Performed fieldwork and authored Cultural Resources AFC section and technical report for a 177 MW solar power project located in San Luis Obispo County, California (640 acre solar farm; 380 acre construction laydown). Deliverables were submitted to the CEC in support of a CEQA-level assessment. Duties included coordination of field survey, CHRIS records search, Native American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties, analysis of effects, and development of mitigation measures. (2007-2008)

Stirling Energy Systems – Solar 2 Project and Data Request 125, CEC, Imperial County, CA.:
Architectural Historian (URS Corporation)
Performed primary and secondary source research to develop a historic and evaluative context for the project area. Context focused on Imperial

Solar Hybrid Power Plant Cultural Resources Assessment, Bethel Energy, Imperial County, CA.:
Architectural Historian (URS Corporation)
Performed CEQA-level cultural resource assessment of two early 20th century earthen and concrete-lined canals in Imperial Valley area. Performed CHRIS Center Record Search, developed historic context on Imperial Valley’s irrigated commercial agriculture industry, performed built environment survey, recorded and evaluated resources through DPR 523 series forms, and produced a technical report. (2007)

Calnev Expansion Project, Kinder Morgan, San Bernardino County, CA.:
Architectural Historian (URS Corporation)
Served as Architectural Historian for cultural resources assessment for NEPA and CEQA project. Performed fieldwork and authored technical report for a 190-mile portion of a proposed 245-mile pipeline expansion project from Colton, CA to Primm, NV. Deliverables were submitted to the BLM as the lead agency for NEPA and the County of San Bernardino as the lead agency for CEQA. Duties included coordination of field survey, CHRIS records search, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, analysis of effects, and development of mitigation measures. In total, recorded and evaluated 39 unrecorded historic-period properties and 17 previously recorded historic-period properties. Prepared for Kinder Morgan, Inc. (2008)

Carson Cogeneration Plan Expansion, BP, Inc., Los Angeles, CA.:
Cultural Resources Task Manager (URS Corporation)
Served as Task Manager for cultural resources assessment for a cogeneration plant expansion. Performed fieldwork and co-authored Cultural Resources AFC section and technical reports. Deliverables were submitted to the CEC in support of a CEQA-level assessment. Duties included coordination of field survey, CHRIS records search, Native American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, analysis of effects, and development of mitigation measures. (2008)

1507 Mt. Vernon Avenue Historic Property Assessment, Patch Services Engineering, City of Pomona, Los Angeles County, CA.:
Project Manager/Architectural Historian (URS Corporation)
Project Manager/ Architectural historian for the evaluation of a 1927 paper mill located within a cogeneration power facility. Developed
Starwood-Midway Power Plant AFC Data Requests, Starwood Energy, Fresno County, CA:
*Architectural Historian (URS Corporation)*
Performed additional historic research and field surveys for CEC AFC Data Requests to determine the location of a historic farm in relation to the Project Area. Research efforts included a review of historic maps, aerial photographs, real estate and county records, and newspaper articles. The Data Requests, and associated figures and maps, were submitted to CEC via a Letter Report. (2007)

Revised Niland Cultural Treatment Plan and Research Design, Niland Gas Turbine Plant Project, CEC, Niland, CA.:
*Architectural Historian (URS Corporation)*
Authored the Historic Period Research Questions used in the Treatment Plan. Research questions focused on emigration, irrigation, flooding episodes, and power generation in Imperial Valley. (2007)

Confidential Pipeline Expansion Project Feasibility Study and Constraints Analysis, Private Client, CA and NV.:
*Architectural Historian (URS Corporation)*
Performed CHRIS Center Records Search for 223-mile pipeline expansion. Results of Record Search were tabulated and included in Feasibility Study. Also coordinated all cultural resource mapping with GIS personnel. (2006)

Cultural Resource Survey and Assessment, Imperial Irrigation District, Niland and El Centro, CA.:
*Architectural Historian (URS Corporation)*
Staff architectural historian for the evaluation of built environment resources and effect caused by alterations to power plant facilities. Evaluated resources per California Register criteria and developed recommended mitigation measures for project. Co-authored the Technical Reports, DPR 523 series forms, and Application for Certification. Identified an historic bank, eligible for the California Register of Historic Resources, related to the early development of Niland and a historic powerplant building, associated with the early development of the Imperial Irrigation District and eligible for the California Register. (2006)

Cook & Miller Court Complex Seismic Retrofit, FEMA, Santa Barbara County, CA.:
*Architectural Historian (URS Corporation)*
As part of HMGP-funding, evaluated the NRHP and CRHR eligibility of the Cook & Miller Court Complex, a Monterey style complex constructed in 1954, in compliance with Section 106 and the PA Completed architectural history survey, background research, DPR 523 series forms and findings memorandum. (2010)
Franklin Reservoir Improvement Section 106 Compliance Project, FEMA, Los Angeles County, CA.:  
Architectural Historian (URS Corporation)  
Performed Section 106 Compliance Study for LADWP for the replacement of five catch basins for a 1940s dam within the City of Beverly Hills. Prepared DPR 523 series forms and technical report for SHPO. Developed historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, analysis of effects, and development of mitigation measures. (2008-2009)

Santa Monica City Hall MOA Seismic Retrofit, Jail-Area Adaptive Use, and ADA Improvements, FEMA, Los Angeles County, CA.:  
Architectural Historian (URS Corporation)  
Performed Section 106 Review on behalf of FEMA for the seismic retrofit, jail-area adaptive use, and ADA improvements of the National Register-eligible City Hall. Reviewed consultant and City prepared studies and drawings, performed integrity analysis and identification of character defining features, analyzed effects, and developed a resolution of effects plan. Coordinated with ACHP, SHPO, OES, FEMA, and City, and authored Notification Letter and Draft MOA to resolve effects. Prepared for FEMA (2008-2009)

Harada House Section 106 Review, FEMA, Riverside County, CA.:  
Architectural Historian (URS Corporation)  
Performed Section 106 Compliance Review on behalf of FEMA for emergency repairs to a National Historic Landmark (Harada House) within the City of Riverside. Reviewed project through NEMIS database, and responsible for SHPO consultation, applying Section 106 Programmatic Agreement Allowances, integrity analysis, and identification of effects. Drafted Notification Letter for ACHP, SHPO, OES, FEMA, and City. (2008)

Ross School Flood Mitigation Assistance, FEMA, Sonoma County, CA.:  
Architectural Historian (URS Corporation)  
Performed Section 106 Compliance Review for FEMA for a flood elevation assistance project. Performed CHRIS Center Record Search and determination of eligibility, analysis of integrity, and identification of effect. Compliance study submitted via letter report to FEMA. (2008)

Sonoma County Flood Mitigation Assistance, FEMA. Sonoma County, CA.:  
Architectural Historian (URS Corporation)  
Napa County Flood Mitigation Assistance, FEMA, Napa County, CA.:  
Architectural Historian (URS Corporation)  
Performed Section 106 Compliance Study for FEMA for flood mitigation assistance project. Performed CHRIS Center Record Search and performed determination of eligibility, analysis of integrity, and identification of effect. Compliance study data transmitted via letter report to SHPO. Prepared for Sonoma County. (2008)

Municipal Water District - Upper Feeder Line, FEMA, Riverside County, CA.:  
Architectural Historian (URS Corporation)  
Staff architectural historian for the evaluation of built environment resources for FEMA disaster recovery project. Evaluated resources (“Pratt” truss bridge and gaging station) per National Register criteria and requirements of Section 106 of the NHPA. Performed determination of eligibility, identification of effect, analysis of integrity, and recommended mitigation measures for project. Prepared for Riverside County. (2006)

San Diego Vegetative Management, FEMA, San Diego County, CA.:  
Architectural Historian (URS Corporation)  
Assisted FEMA’s Section 106 compliance for vegetative management for the San Diego County communities of Bay Terrace, Del Cerro, Encanto, Lake Murray, Marion Bear Park, Serra Mesa, Black Mountain, Carmel Valley, Los Penasquitos, Tecolote Canyon, Scripps Ranch, and Tierrasanta. Performed CHRIS Center Records Search and wrote historic contexts for communities of Bay Terrace, Del Cerro, Encanto, Lake Murray, Marion Bear Park, Serra Mesa, Black Mountain, Carmel Valley, Los Penasquitos, Tecolote Canyon, Scripps Ranch, and Tierrasanta. Part of technical reports submitted to FEMA for Section 106 Compliance. Prepared for City of San Diego. (2006)

Hurricane Katrina Public Assistance, DR-1604-MS, FEMA, Biloxi, MS.:  
Architectural Historian (URS Corporation)  
Historic Preservation Specialist for NEPA review of over 100 public assistance projects. Reviewed projects through NEMIS database. Responsible for SHPO consultation, applying Section 106 Programmatic Allowances, determinations of eligibility, integrity analysis, and identification of effects. Drafted MOAs, developed mitigation measures, ensured projects met Secretary of Interior Standards for the Treatment of Historic Properties, and coordinated and led meetings between applicants, FEMA, and Mississippi SHPO. Projects included over 10 National Register Properties, 1 National Historic Landmark, and 15 Mississippi Landmarks. (2006)
Nevada City Fuel Reduction Project, FEMA, Deer Creek Environs, Nevada County, CA.:
Architectural Historian (URS Corporation)
Assisted FEMA’s Section 106 compliance for wildfire mitigation of 600 acres. Mr. Hollins participated in kick-off meetings; performed extensive background research; developed an evaluative historic context; completed architectural history surveys for the Undertaking; and, prepared DPR 523 series forms and a findings memorandum. Four previously recorded cultural resources, one previously unidentified historic-period residential camp site, and five historic-period isolates were recorded in the Area of Potential Effect (APE) - all associated with the early history of 19th and 20th century northern California gold mining. (2006)

Water

Calaveras Dam Staff Housing Replacement Project, San Francisco Public Utilities Commission, Sunol, Alameda County, CA.:
Architectural History Task Manager (URS Corporation)
Architectural History Task Manager for the CEQA evaluation of a historic-period rural property that would be demolished to accommodate new staff housing for the SFPUC, as part of Calaveras Dam replacement project. CEQA evaluation included preparation of a technical archaeology and architectural history memorandum, recordation of the property through DPR 523 series forms, and preparation of project area maps. Developed evaluative historic context for the Spring Valley Water Company, Sunol, and Alameda County historic-period rural properties. (2010)

City of Los Angeles Lower Franklin Reservoir No. 2 - Debris Basins Replacement, Los Angeles, CA.:
Architectural Historian (URS Corporation)
Assisted FEMA’s Section 106 compliance for LADWP’s replacement of five catch basins for a 1940s dam within the City of Beverly Hills. Mr. Hollins performed extensive background research; developed an evaluative historic context; completed architectural history surveys for the Undertaking; and, prepared DPR 523 series forms and a findings memorandum. (2009)

MCB Camp Pendleton Bachelor Enlisted Quarters Siting Study, San Diego County, CA.
Architectural Historian (URS Corporation)
Reviewed MCB Camp Pendleton GIS layers and cultural resources records and data to identify potential direct impacts to previously recorded cultural resources located within a 500-foot radius of proposed Bachelor Enlisted Quarters at MCB Camp Pendleton. Provided cultural resources analysis as part of a preliminary NEPA constraints and siting study to support the preparation of the Project’s design-build RFP for FY2008, FY2009, and FY2010. In total, 25 potential BEQ sites were analyzed for potential direct impacts to cultural resources. Prepared for MCB Camp Pendleton. (2008)
Desert Installation Appearance Plan and Airfield Security Study for NAF El Centro, NAS Fallon, NWS Seal Beach, NAS Lemoore, and NAWS China Lake:
Architectural Historian (URS Corporation)
Architectural Historian responsible for developing cultural resources considerations, base-wide historic contexts, design guidelines for historic structures and districts, and base-wide visual themes. Project was completed at five installations throughout California and Nevada. Within the historic district analysis, the character-defining features, visual quality and context, and historic contexts were identified to classify built environment styles and a harmonizing theme. In addition, all built environment properties within the installations were identified and categorized, in order to provide clear visual design guidance and functional and aesthetic guidance. Lastly, based on the preceding data, design guidelines (including material and construction elements) were then established for each installation. Prepared for NAVFAC. (2008)

Telecommunications
Verizon Wireless Communications Tower Section 106 Compliance, CA and NV.:
Lead Architectural Historian (URS Corporation)
Performed or supervised the completion of over a hundred Section 106 Compliance Studies for FCC on behalf of Verizon Wireless for new tower support structures and collocated towers throughout California and Nevada. Performed determination of eligibility, analysis of integrity, and identification of effect. Projects completed within various counties of California. Prepared FCC Form 620 or 621, DPR 523 series forms, and letter report. (On-Going)

Verizon Wireless Communications Tower Viewshed Analysis, Wendover, NV.:
Architectural Historian (URS Corporation)
Performed specialized historic viewshed analysis for FCC on behalf of Verizon Wireless for a new tower support structure in Wendover, NV. Viewshed analysis considered the project’s effect within a half-mile radius. Results of the viewshed analysis were submitted via letter report to SHPO. (2008)

Historic-Period Property Evaluation Report – Twin Peaks, San Francisco Planning Department, San Francisco, CA.:
Architectural History Task Manager (URS Corporation)
Architectural History Task Manager for the Section 106 of the NHPA and CEQA evaluation of a historic-period religious building (church) located within the City of San Francisco, which would be substantially altered. CEQA evaluation was completed in compliance with San Francisco Planning Department regulations, as well as the guidelines established by the Major Environmental Analysis (MEA) staff and the Planning’s Department’s Preservation Coordinator. Section 106 of the NHPA and CEQA evaluation included preparation of a letter report, DPR 523 series
forms, APE maps, historic maps and images, records search information, and a San Francisco Planning Department Supplemental Information Form for Historic Resource Evaluation form. Historic-period property was evaluated using the Criterion Consideration A: Religious Properties, in addition to NRHP/CRHR criterion. (2010)

Scripps Park Historical Structures and Cultural Landscape Report, La Jolla, CA:
Project Manager (Independent Contractor)
Project Manager and lead investigator for historic context and treatment plan of site. Work entailed identifying landscape features, flora/botanical species, existing conditions, review of original drawings and plans, historic sequence of events, construction chronology, and archaeological discoveries. Responsible for assigning tasks, overseeing sub-consultants work, coordination of report, budget, and application of Secretary of Interior standards, CEQA, and Coastal Commission regulations. Project submitted to City of San Diego and Coastal Commission for Restoration and Reconstruction of site and future planning. (2005)

Guy Fleming House at Torrey Pines Park Historic Structures Report, San Diego, CA:
Lead Historian (IS Architecture)
Created historic context, performed site assessment, documented present conditions, and developed treatment plan for National Register site for California State Parks. Coordinated and oversaw sub-consultants’ work (i.e., engineers, architect, spectrographers, archaeologist, paint-chip analyst). Organized meetings and was lead contact between State Parks and project staff. Building is a 1925 vernacular Pueblo Revival Building, formerly the headquarters for California State Parks southern office. (2005)

Half Round Building HABS Report, Escondido, CA:
Lead Historian (IS Architecture)
HABS Level 1 documentation and research for City of Escondido on a Quonset hut type building which predated World War II. Responsible for historic context, current conditions analysis, oral interviews, and overseeing project architect, engineer, and photographers work. Organized meetings and lead contact between city and project staff. Left firm before completion of the project. (2005)

Historic Reconnaissance and Intensive Survey, La Jolla, CA:
Historian (La Jolla Historical Society)
Responsible for review, quality control, and redrafting of Context Statement and Historic Districts for City of San Diego. Reviewed survey data, performed archival research, and drafted new historic districts. Led workshop between city staff, public, client, and project team. (2005)

New School of Architecture and Design, San Diego, CA:
Adjunct Instructor for “World Architectural History”
Professor for class of 55 students (graduate and undergraduate) - curriculum examined Prehistoric through Romanesque architectural history. (2005)

**Warners Ranch Adobe Farmhouse and Barn Historical Structures Report and HABS Report, Warner Springs, CA.:**  
*Lead Historian (IS Architecture)*  
Coordinated the production of the Historic Structures Report of National Register site. Responsible for drafting historic context, current conditions analysis, and co-authored treatment plan with preservation architect.  
Oversaw sub-consultants’ work (i.e., contractor, engineers, architect, spectrographers, archaeologist, paint-chip analyst). Lead contact between client (Vista Irrigation District) and staff. (2004)

**Casa de Bandini and Casa de Pico Historic Structures Report, San Diego, CA.:**  
*Project Historian (IS Architecture)*  
Responsible for deliverables to client, and the coordination of sub-consultants’ work (i.e., engineers, architect, spectrographers, archaeologist, paint-chip analyst). (2004)

**City of Cape May General Plan Update, Cape May, NJ.:**  
*Field Associate (Vital Computer Resources)*  
Responsible for 400-resource historic reconnaissance survey for City of Cape May Tax Assessor Office and Planning Department. Created measured field sketches, collected lot information, interior/exterior elements, construction details, alterations, integrity, and identified if contributor to potential district. Information was used to update existing Residential-Building Records, PDO information, future EIR content, future Land Use and Zoning Ordinance amendments. Cape May is a National Historic Landmark City and has high concentrations of Queen Anne and Stick Style buildings. (2003)

**Community Involvement**

**Traffic and Parking Commission, City of Del Mar, Del Mar, CA.:**  
Appointed by the Del Mar City Council to serve four-year term as member of five person committee. Meet monthly and make recommendations to City Council based on public input and participation. Responsible for resolving traffic and parking issues; such as speeding, reoccurring regulatory violations, traffic congestion, parking problems, and application of new technologies. Work and meet regularly with the public, City Council, Parking Enforcement, the Fire Department, the San Diego Sheriff’s officers, City Manager’s office, Public Works and Planning Departments, and the City’s Traffic Engineer. (July 2005-July 2009)
Publications


Chronology

2006-Present: URS Corporation, Senior Architectural Historian, San Diego, CA

2005-2006: New School of Architecture, Adjunct Instructor, San Diego, CA

2004-2005: IS Architecture, Architectural Historian, La Jolla, CA

2003-2004: La Jolla Historical Society, Archivist and Preservation Specialist, La Jolla, CA

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Jeremy.hollins@urs.com
Joel Levanetz, M.A.
Architectural Historian

Overview

Joel Levanetz is a Secretary of Interior Professional Qualified Architectural Historian and Historian for the URS San Diego office. Since 2008, Mr. Levanetz has been active in the field of architectural history. In this discipline, Mr. Levanetz has applied his knowledge and ability to a range of projects, including historic structures reports, historic resources assessments, Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) documentation, and DPR 523 series form preparation.

Mr. Levanetz possesses a detailed understanding of relevant regulations and ordinances that affect historic properties, such as Sections 106 and 110 of National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), the California Environmental Quality Act (CEQA), and the Secretary of Interior Standards for the Treatment of Historic Properties. He has applied this understanding to a breadth of historic assessments and determinations of eligibility across a range of administration levels including local, state, and National Register of Historic Places (NRHP). Among the agencies served by Mr. Levanetz are the Federal Emergency Management Agency (FEMA), Bureau of Land Management (BLM), California Energy Commission (CEC), Federal Communications Commission (FCC), Federal Aviation Administration (FAA), Department of Housing and Urban Development (HUD), California Department of Transportation (Caltrans), as well as countless local agencies and private clients.

Project Experience

Transportation
California High Speed Rail Authority, High Speed Train, Palmdale to Los Angeles Union Station Segment EIR/EIS and Technical Report – Los Angeles County, CA., Architectural Historian:
Survey lead and co-author of the Historic Architecture Survey Report, Historic Properties Survey Report, and the historic architecture section of the EIR/EIS for the Palmdale to Los Angeles Union Station segment of the California High Speed Train project pursuant to CEQA and NHPA. Delineated area of potential effect (APE), conducted archival research, oversaw task management and led execution of survey spanning from Palmdale to downtown Los Angeles. (Ongoing)

BNSF Mojave Subdivision, Tehachapi Pass, Second Main Track-Bena to Marcel – Kern County, CA., Architectural Historian:
Conducted a desktop evaluation of properties in the Project Area Limits (PAL) associated with events in local and state history such as the National Register of Historic Places-listed Nuestra Señora Reina de La Paz, associated with labor rights leader Cesar Chavez. Following Caltrans Division of Rail standards and comments, drafted the Historical

Areas of Expertise
Secretary of Interior Professional Qualification Architectural History and History (36 CFR Part 61)
19th – 20th Century Architecture
Archival Research
Historic Preservation Treatments and Law
Urban History

Years of Experience
With URS: 2 Years
With Other Firms: 2 Years

Education
MA, Public History, University of San Diego, 2008
BA, Anthropology, University of Wisconsin-Madison, 2006

Caltrans and Alameda Corridor Transportation Authority, HAER, Level II, for the Commodore Schuyler F. Heim Bridge, Schuyler Heim Bridge Replacement and SR-47 Expansion Project – Long Beach, CA., Architectural Historian:
Peer-reviewed HAER Level II photo and written documentation of Heim Bridge within the Port of Los-Angeles-Long Beach to fulfill NHRA Section 106 mitigation requirements. Ensured project met all Standards and Guidelines of HAER Level II for submission to the Library of Congress. Project was nominated for a URS Pyramid Award for Technical Excellence. (2011)

Caltrans and City of Santa Ana, Bristol Street, Phase 3 and Phase 4 – Santa Ana, CA., Architectural Historian:
Performed Section 106 Compliance Study for the City of Santa Ana Public Works Agency for the roadway widening at Bristol Street from Civic Center Drive and Seventeenth Street and from Warner Avenue to Saint Andrew Place. Assisted in the preparation of HPSR, HRER, and DPR 523 series forms for project per Caltrans/FHWA guidelines. Tasks included APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, and impact analysis. (2011)

Caltrans and SANDAG, Lenwood Road – Barstow, CA., Architectural Historian:
Performed Section 106 Compliance Study for the San Bernardino Associated Governments for the roadway and railroad track grade separation at the Lenwood Road rail crossing. Updated HPSR, ASR, HRER, and DPR 523 series forms for project per Caltrans/FHWA guidelines. Performed determination of eligibility, analysis of integrity, and identification of effect on residential and commercial properties associated with Historic Route 66 in San Bernardino County. (2011)

Caltrans and Riverside County Transportation Department, Clay Street Grade Separation Project – County of Riverside, CA., Architectural Historian:
Conducted Section 106 Compliance Study for the Riverside County Transportation Department for the roadway and railroad track grade separation at the Clay Street rail crossing. Prepared HPSR and ASR for project per Caltrans/FHWA guidelines, requested records search information, tabulated and evaluated the records search results, conducted historic research, evaluated potential impacts to previously-recorded properties and completed DPR 523 forms. (2011)
Caltrans and Los Angeles County Metropolitan Transportation Authority, Interstate 710 Corridor Project between Ocean Boulevard and the State Route 60 Interchange – Los Angeles County, CA.,
Architectural Historian:
Provided secondary critical review of the Historic Property Survey Report (HPSR) and Historical Resources Evaluation Report (HRER) prepared by Galvin Preservation Associates in compliance with Section 106 of the NHPA and Caltrans's Section 106 PA. The review focused on the content of the work product including compliance with applicable codes and standards and consistency with requirements in the proposal and Project Execution Plan (PXP). A total of 172 historic-period (45 years of age or older) resources were documented and evaluated in the project APE. (2011)

Caltrans, I-405 Widening – Los Angeles and Orange Counties, CA.,
Architectural Historian:
Assisted the cultural resources task lead with preliminary project planning for the I-405 Widening project in Los Angeles and Orange Counties. Reviewed records search results and records search results maps, requested NAHC Sacred Lands File search, and assisted with contacting Native American tribal representatives. (2010)

Orange County Transit Authority and Cities of Santa Ana and Garden Grove, Santa Ana and Garden Grove Fixed Guideway EIS/EIR – Santa Ana and Garden Grove, California, USA.,
Architectural Historian:
Served as archival researcher as well as technical report and EIS/EIR section co-author for an approximately four mile proposed streetcar line in the City of Santa Ana. Completed determination of eligibility, analysis of integrity, and identification of effect for approximately 100 resources in accordance with the NHPA, NEPA, CEQA, and Federal Transit Administration guidelines. Project requirements included APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, field map and field form creation, and impact analysis. Architectural history resources recorded ranged from late nineteenth to late-1970s commercial, residential, institutional, and industrial properties, including an NRHP-eligible steel-truss bridge and two NRHP-listed historic districts as well as numerous locally landmarked and individually NRHP-eligible buildings. (2011)

Los Angeles County Metropolitan Transportation Authority (Metro), Westside Subway Extension, EIR and Historic Survey Report–Los Angeles, CA., Architectural Historian:
Assisted with architectural history tasks for the Los Angeles Metro Westside Extension project. Tasks included archival research, reviewing the historic context, evaluating the project APE for eligibility, identifying and evaluating NRHP-listed, -eligible, or contributing resources, considering project effects by alternative, proposing mitigation measures, and reviewing the technical report and EIR section. (2010)
Energy

**BrightSource Energy, Siberia and Sonoran West Projects**

**Application for Certification – San Bernardino and Riverside Counties, CA.**

**Architectural Historian:**

Serving as the cultural resources field data manager, archival researcher, and technical contributor for large solar projects. Co-authoring the architectural history portion of cultural resources section of the Application for Certification, which will evaluate the direct and indirect impacts of the project to cultural resources. Will complete determination of eligibility, analysis of integrity, and identification of effect for resources in accordance with the NHPA, NEPA, CEQA, and California Energy Commission guidelines. (Ongoing)

**BrightSource Energy, Rio Mesa Solar Energy Project Application for Certification – Riverside County, CA.**

**Architectural Historian:**

Served as the field surveyor and archival researcher for an approximately 8,000 acre solar project in the Colorado Desert of California. Co-authored the architectural history portion of cultural resources section of the Application for Certification, which evaluated the direct and indirect impacts of the project to cultural resources. Completed determination of eligibility, analysis of integrity, and identification of effect for 30 resources in accordance with the NHPA, NEPA, CEQA, and California Energy Commission guidelines. (2011-2012)

**Chevron Central Reliability Center and Central Tool Room/I&E Shops Project Cultural Resources Technical Memorandum – El Segundo, CA.**

**Architectural Historian:**

Prepared a preliminary CEQA Compliance Study using the criteria outlined in Section 5024.1 of the California Public Resources Code (CPRC) for the removal of seven historic-period structures and construction of modern facilities at the refinery. Drafted a technical memo for Chevron to identify historic properties and determine possible effects of the project on these properties. Work included APE delineation, analyzing records search results, historic context and site history development, identification and evaluation, and Native American consultation. (2012)

**Pio Pico Energy Center, L.L.C., Pio Pico Energy Center, Otay Mesa – San Diego County, CA.**

**Architectural Historian:**

Performed a historic architecture assessment for alterations to plans for a proposed gas plant in San Diego County in accordance with CEQA and CEC guidelines. Conducted archival research, evaluated the project APE for eligibility for listing in the CRHR or as a historical resource for purposes of CEQA, and updated the architectural history portion of the cultural resources technical report for submission to the CEC. (2011)

**Bethel Energy, L.L.C., Bethel 10 – Imperial County, CA.**

**Architectural Historian:**

Performed an intensive architectural history field survey of the project’s APE in accordance with CEQA and the CEC guidelines for a proposed gas plant in Chula Vista. Conducted archival research and evaluated the
project APE for eligibility for listing in the CRHR or as a historical resource for purposes of CEQA. Recorded several resources on the appropriate DPR 523 forms, including an international border marker and the All-American Canal. Drafted the architectural history portion of the cultural resources technical report for submission to the CEC. (2010)

**Infrastructure Development**

**Verizon Wireless Telecommunication Projects, Section 106 Compliance – CA and NV., Architectural Historian:**

Performed over 55 NRHP compliance studies for the Federal Communications Commission on behalf of Verizon Wireless for new tower support structures and collocated towers throughout California and Nevada. Completed determinations of eligibility, analyses of integrity, and identifications of effect. Resources identified and evaluated have dated from the late nineteenth century to the recent past, were located in various settings (dense urban, suburban, rural, and industrial), and have included numerous property types (residential and commercial buildings, churches, educational institutions, hospitals, water towers, windmills, farm and ranch landscapes, an oil refinery, and irrigation canals). (Ongoing)

**Centre City Development Corporation, Rehabilitation and Construction of New Urban Plaza at Horton Plaza – San Diego, CA., Architectural Historian:**

Served as field survey and research lead for a unique subsurface investigation in downtown San Diego. Authored the Historic Architecture Monitoring Technical Report and attachments for the San Diego Register of Historical Resources-listed Horton Plaza. Drafted content and format consistent with the Project Execution Plan (PXP), compliant with applicable codes and standards, and following technical project standards. (2012)

**San Francisco Public Utilities Commission, Peninsular Pipelines Seismic Upgrade – City and County of San Francisco, CA., Architectural Historian:**

Coordinated and led field survey for improvements to water utilities across northern San Mateo County. Led archival research and drafted the Historic Architecture Survey Report (HASR). Completed determination of eligibility, analysis of integrity, and identification of effect for approximately 30 resources in accordance with the NHPA, NEPA, and CEQA. Project requirements included APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, field map creation, and impact analysis. Architectural history resources recorded included a Dr. Alister Mackenzie-designed, NRHP-eligible 1929 golf course, portions of three pipelines dating to the early 1900s, and three mid-century residences. (2011-2012)

**North Hollywood Park Field House Demolition Project Cultural Resources Investigations – Los Angeles County, CA.< Architectural Historian:**

Prepared a preliminary CEQA Compliance Study using the criteria outlined in Section 5024.1 of the California Public Resources Code
(CPRC) for the removal of a Spanish-Colonial Revival style field house constructed in the 1930s. Drafted a technical memo for the City of Los Angeles Department of Recreation and Parks to identify historic properties and determine possible effects of the project on these properties. Work included APE delineation, archival research, analyzing records search results, historic context and site history development, identification and evaluation, and Native American consultation. (2011)

**FAA, San Francisco International Airport Runway Safety Area Program – San Francisco, CA., Architectural Historian:**
Assisted an assessment of the historic-age runways, taxiways, canal, and approach-lighting trestles within the project APE for runway safety area improvements required by the FAA at the San Francisco International Airport. Airport facilities were evaluated pursuant to Section 106 of the NHPA, NEPA, and CEQA. Assessed effects and impacts from the proposed undertaking; completed DPR 523 series forms; and co-authored the Historic Architecture Survey Report. (2011)

**Government & Military**
**FEMA, Dant Wash Drain Diversion – Reno, NV., Architectural Historian:**
Performed Section 106 Compliance Study for FEMA for a flood damage mitigation assistance project involving the replacement of a culvert and historic-age retaining walls. Performed determination of eligibility, analysis of integrity, and identification of effect. Drafted findings memo. (2012)

**FEMA, East Bay Hills Hazardous Fire Risk Reduction Program – Alameda County, CA., Architectural Historian:**
Prepared a preliminary Section 106 Compliance Study for FEMA for a fire damage mitigation assistance project involving the removal of vegetation from potentially hazardous areas throughout the East Bay Region. Drafted an EIS section for FEMA to evaluate and record historic properties as well as determine possible effects of the project on potentially historic properties. Tasks included APE delineation, identification and evaluation, and Native American consultation. (2010)

**FEMA, Northwest Reno Fire Mitigation Program – Washoe County, NV., Architectural Historian:**
Performed a Section 106 Compliance Study for FEMA for a wildfire damage mitigation assistance project involving fuel removal from open spaces in disparate residential areas. Executed extensive field survey which included both surveying the built environment and assisting the survey of over 400 acres for archeological resources. Performed determination of eligibility, analysis of integrity for individual properties and potential cultural landscapes, and identification of effect. Drafted the finding of no historic properties. (2012)
FEMA, Caliente Flood Mitigation Assistance, Lincoln County, NV., Architectural Historian:
Performed a Section 106 Compliance Study for FEMA for a flood mitigation assistance project involving the elevations of early twentieth century residences in Lincoln County. Performed determination of eligibility, analysis of integrity, and identification of effect. (2012)

FEMA, Carson Senior High School Seismic Retrofit – Carson, CA., Architectural Historian:
Prepared a preliminary Section 106 Compliance Study for FEMA for a seismic retrofit project involving the seismic upgrade of a mid-century high school gymnasium design by a recognized, Los Angeles-based architectural firm. Authored a memo for FEMA recommending a project approach, including APE delineation, identification and evaluation methods, and specific application of the Secretary of the Interior Standards for Rehabilitation for the historic property. (2011)

FEMA, San Anselmo City Hall – San Anselmo, CA., Architectural Historian:
Performed a post-mortem Section 106 Compliance Study for FEMA for a flood damage mitigation assistance project involving the repair of the Town Hall Complex, an early 19th century building which houses the Public Library, Fire Station and Town Hall Offices. Executed determination of eligibility, analysis of integrity, and identification of effect. Drafted the finding of no historic properties. (2011)

FEMA, North Tahoe Roof Replacement – North Tahoe Fire Protection District, CA., Architectural Historian:
Co-authored a memo for FEMA recommending a project approach, including APE delineation, identification and evaluation methods, Native American consultation and involvement, and specific application of the Secretary of the Interior Standards for Rehabilitation for any identified historic properties. (2010)

FEMA, Fairfax Pavilion – Fairfax, CA., Architectural Historian:
Drafted a Section 106 Compliance Study for FEMA under an earthquake damage mitigation assistance project for a memorial pavilion in Fairfax. Performed determination of eligibility, analysis of integrity, and identification of effect. Drafted findings memo. (2012)

National Oceanic and Atmospheric Administration (NOAA), Integrated Water Resources Science and Services (IWRSS), University of Alabama Section 106 Compliance – Tuscaloosa, AL., Architectural Historian:
Created field methodology and photo guidance for survey conducted by qualified university staff. Completed evaluation of eligibility and effect pursuant to Section 106 of the NHPA for buildings associated with the mid-nineteenth century Bryce Hospital NRHP-eligible historic district. Through consultation with interested parties and Alabama SHPO, determined appropriate level of recordation and drafted modified HABS report approved by SHPO. (2011)
United States Postal Service (USPS), Historic Context Study 1940-1971 – Nationwide, Architectural Historian:
Conducted interviews with key individuals for historic context theme and research methods development. Distributed information to project team members identifying potential research repositories for various historic-period post offices throughout the Western Region. (2012)

US Navy, Marine Corps Air Station Chocolate Mountain Aerial Gunnery Range (MCAS CMAGR) Land Withdrawal Renewal – Riverside and Imperial Counties, CA., Architectural Historian:
Assisted with research to identify potential cultural resources in the project APE for the cultural resources section of the Legislative Environmental Impact Statement (LEIS). (2011)

United States Marine Corps, Marine Corps Base (MCB) Camp Pendleton, Area Development Plan, Museum District Plan – County of San Diego, California, Architectural Historian:
Contributed to the Museum District Plan by reviewing primary and secondary sources, developing a historic context, and reviewing data forms for the district’s historic-period buildings and structures. Assisted in the identification of potential future projects and addressed the specific needs of the Marine Corps Mechanized Museum, with recommendations for improvement and repair based on the Secretary of the Interior’s Standards for Rehabilitation. (2012)

Projects performed at another Firm

Quieter Home Program, San Diego, CA., Historian (Heritage Architecture and Planning):
Undertook an extensive architectural historic field survey for the San Diego Airport Authority. Determined the eligibility of hundreds of residences in the project’s extensive Area of Potential Effect. Conducted a large-scale historical investigation for each of the subject properties to ensure that exterior treatments applied to the homes beneath the flight path did not violate local, state or federal regulations. (2008-2010)

Carl G. Bray House, Indian Wells, CA., Historian (Heritage Architecture and Planning):
Compiled historical data from various repositories, drafted historical context and executed a historical evaluation for the home and gallery of artist Carl G. Bray for the Carl Bray House Historic American Buildings Survey (HABS). This was implemented by authorities in Indian Wells as a measure to mitigate the demolition of the structures. (2010)

Historic Structures Report, Bonsall Schoolhouse, County of San Diego, CA., Historian (Heritage Architecture and Planning):
Completed a historic structures report for the late 19th century one-room schoolhouse located on the current school grounds. This project required field work, archival research, historical context development, technical writing and integrity analysis. (2009)
Lanterman Developmental Center, Pomona, CA., Historian (Heritage Architecture and Planning):
Led a team of architects to record and analyze the 120 structures that constitute the Lanterman campus for the California Department of General Services. Drafted a comprehensive Historic Resources Assessment Report that included a historical overview, an evaluation of the integrity of each building and information regarding potential historic districts. Each structure was identified and evaluated for their significance based upon the criteria set forth by the local, state and national registers. (2009)

Professional Societies/Affiliates
National Trust for Historic Preservation
California Preservation Foundation
San Diego History Center
Phi Alpha Theta, History Honor Society
Phi Kappa Phi, Honor Society

Awards

Publications
Belle Baranceanu: The Artist at Work, Resource Library, Traditional Fine Arts Organization, 2007

Lectures and Public Presentations
Arts, Crafts and Architecture: The American Craftsman. Continually presented to a variety of interested parties at the George White Marston House, 2007-2008
Topics on Early San Diego History. Presentations given to participants of the Conference on Early San Diego Regional History, 2007-2008
Curator’s Talk. Presentations given to students of the “School in the Park” Program, 2007-2008
These Days. Live interview with KPBS host Tom Fudge regarding the history of enduring San Diego’s summer heat, 2007
Continuing Education
Published “James Wood Coffroth, (1872-1943): West Coast Promoter,” 2009

Chronology
URS Corporation, Architectural Historian, San Diego/La Jolla, California, 2010-Present
New School of Architecture & Design, San Diego, California, 2008-Present
Heritage Architecture and Planning, Historian, San Diego, California, 2008-2010
San Diego History Center (formerly San Diego Historical Society), Curator, San Diego, California, 2006-2008
Archeology Field Technician, ASM Affiliates, 2005-2006

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April 8, 2013

Christopher Cannon, Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
San Pedro, CA 90731

via email ceqacommerts@portla.org

Subject: Comments on Program EIR
Port Master Plan Update

Dear Director Cannon:

This office represents the Los Angeles Conservancy regarding the Port Master Plan Update and EIR. Our statewide practice focuses on citizen enforcement of the California Environmental Quality Act. The many CEQA cases handled by this office over the last thirty years include published appellate decisions in Friends of Sierra Madre v. City of Sierra Madre, Flinders Foundation v. City of Carmel, Lincoln Place Tenants Association v. City of Los Angeles, The Pocket Protectors v. City of Sacramento, Preservation Action Council v. City of San Jose, Friends of the Santa Clara River v. Castaic Lake Water Agency, Architectural Heritage Association v. County of Monterey, League for Protection v. City of Oakland, Galante Vineyards v. Monterey Peninsula Water Management District, Stanislaus Natural Heritage Project v. County of Stanislaus, and Sierra Club v. County of Sonoma.

Consistent with the comments presented by the Conservancy and National Trust for Historic Preservation, I note that CEQA requires both indirect and direct impacts of the Master Plan Update to be addressed to the extent that they are known or reasonably foreseeable at this programmatic level. The uses being described within the Master Plan parameters foretell significant adverse impacts on listed or potentially-eligible historic resources. These uses conflict with mandates of the Coastal Act and CEQA that require avoidance of such impacts when feasible. (E.g., Pub. Resources Code, §§ 21002, 21080, 21084.1, 30708.)
The Master Plan Update Program EIR should expand its analysis of a range of reasonable alternatives to include uses compatible with the feasible adaptive reuse of designated or historic resources. Impacts on such resources should be considered and mitigated. The EIR should be revised and recirculated.

Thank you for your attention to these comments.

Sincerely,

Susan Brandt-Hawley
## Comment Letter BH: Brandt-Hawley Law Group

### Response to Comment BH-1:

This comment references comments on the PEIR and PMPU provided by the Los Angeles Conservancy and National Trust for Historic Preservation and notes that CEQA requires the PEIR to address both direct and indirect impacts of the proposed Program on historical resources to the extent they are known and avoid impacts where feasible. The LAHD has no current plans to demolish any of the buildings in the Fish Harbor area of Terminal Island or specifically at the Southwest Marine facility, and would not contemplate such an action unless there was a proposed development project requiring their removal. In such a case, project-level cultural resource evaluations would be conducted in accordance with CEQA and the Built Environment Historic, Architectural, and Cultural Resource Policy, as described in Response to Comment LAC-3, to ensure that historic resources are adequately considered. The PMPU simply indicates permitted future land uses, and that the proposed land uses would not preclude adaptive reuse or other means of preserving historic resources on Terminal Island (note that adaptive reuse is only one means of avoiding significant impacts on historic resources). Accordingly, there are no other “reasonably foreseeable future activities” that should be considered in the PEIR, and the PEIR complies with CEQA.

### Response to Comment BH-2:

This comment states that the PEIR should expand the analysis of alternatives to include adaptive reuse of designated or historical resources. The alternatives considered in the PEIR, and land use changes described in the PMPU, do not preclude adaptive reuse of historical buildings. Instead, the range of land uses, along with the LAHD’s established policies and the mitigation measures imposed through the PEIR, afford adequate protection for historic resources in the Port. Specifically, the LAHD has adopted its Built Environment Historic, Architectural, and Cultural Resource Policy that specifies the mechanisms that will be used to ensure the preservation and adaptive use, where feasible, of cultural resources. Accordingly, the land use designations in the PMPU do not conflict with the goal of protecting historic resources, and the alternatives considered in the PEIR already incorporate the preservation and reuse of historical properties. As such, expanding the PEIR to include additional alternatives specifically focused on adaptive reuse of historical properties would be unnecessary because this concept is already addressed in the existing alternatives. Correspondingly, the LAHD disagrees with the suggestion that the PEIR should be recirculated.
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