

# CULTURAL RESOURCES

## Asset Profile: Cultural Resources

Marin County is rich with history. Miwok Native Americans inhabited the area for thousands of years and around 600 identified village sites remain throughout the county.<sup>81</sup> In the early 1800's, Mexican governors of Alta California issued 21 land grants and founded the Mission San Rafael Arcángel as a hospital to treat Native Americans dying of introduced diseases.<sup>82</sup> The Gold Rush increased demand for beef and dairy, leading migrants to settle in Marin, establishing ranches and businesses.<sup>83</sup> New ferries, trains, and bridges enabled more access allowing bayside communities to become commercial fishing, water based recreation and vacation hubs, as well as homes for commuters working in San Francisco<sup>84</sup>.

Many of Marin's Bayside towns have maintained their historic characters and downtowns with architectural styles including Shingle Style, Arts and Crafts, Mission Revival, Italianate, and Modern. Julia Morgan, Bernard Maybeck, Willis Polk, Frank Lloyd Wright and Joseph Eichler are amongst the renowned architects who built in Marin County.<sup>85</sup> Sea level rise could impact valued cultural sites in the study area. The following are key vulnerabilities related to cultural resources:

- Tidal and storm surge flooding can destroy bayside archaeological sites and/or compromise data acquisition.
- Historic buildings along Marin's shoreline could be vulnerable to tidal and storm surge flooding, including homes and businesses in Larkspur, Sausalito, Belvedere, Tiburon, San Rafael, and Novato.
- Several publicly accessible sites within state or federal parkland could be vulnerable. Failure to protect these sites could lead to economic and intrinsic losses.
- Additional vulnerabilities lie in lack of comprehensive data on Marin's archaeological resources. Because the shoreline is only partially surveyed, potential losses in unmapped areas cannot be fully assessed.

### IMPACTS AT-A-GLANCE: SCENARIO 6

More than 90 historic buildings in private ownership	Archaeological Resources
6 National Register of Historic Places Sites	Public Sites in State and Federal Parkland
Lack of comprehensive surveys	State Parks National Park Service Local jurisdictions Marin County Property Owners Graton Rancheria Federated Indians



Downtown Sausalito's Historic District is a social and economic hub. Credit: Marin CDA

<sup>81</sup> Wikipedia, Marin County California. Last updated July 3, 2016. [en.wikipedia.org/wiki/Marin\\_County,\\_California#History](https://en.wikipedia.org/wiki/Marin_County,_California#History)

<sup>82</sup> Futcher, Jane. 1981. Marin, The Place, The People.

<sup>83</sup> Futcher, Jane. 1981. Marin, The Place, The People.

<sup>84</sup> Marin County Community Development Agency. 2007. Marin Countywide Plan.

<sup>85</sup> Ibid.

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## Vulnerable Assets

Cultural resources can be defined as “physical evidence or place of past human activity: site, object, landscape, structure; or a site, structure, landscape, object or natural feature of significance to a group of people traditionally associated with it.”<sup>86</sup> Cultural resources analyzed in this assessment are archaeological sites and locally, state, and federally recognized historical structures.

Key resources include historic districts in Sausalito, Belvedere, Tiburon, San Rafael, Hamilton in Novato, and China Camp State Park. Often hubs for local businesses and heritage tourism, historic districts can play an important role in community economic development and sustainability. Historic sites may contribute to local sense of place, community character, and cultural identity. Historical sites can serve as museums or interpretive centers for educational purposes. Environmentally, the continued use of older buildings is generally much more energy efficient than new construction, thus helping to reduce greenhouse gas emissions.<sup>87</sup> Archaeological sites can provide scientific data such as plant and animal species that thrived under past climactic conditions which could be useful in informing future natural resource management plans.

When assessing historical building vulnerabilities, many of the same physical factors can be considered which apply to all buildings, historic or none (see Table 23, physical vulnerabilities of buildings). However, unique considerations for historic buildings include:

- Direct/Tangible:
  - Increased sensitivity due to age/condition leading to more severe physical damage to building fabric.<sup>88</sup>
  - Damage or destruction to character defining features
  - Damage or destruction of historic artifacts within the building

- Direct/Intangible: Irreplaceable loss of cultural heritage from deterioration/destruction of building or artifacts contained within building<sup>89</sup>
- Indirect/Tangible: Loss of tourism revenue<sup>90</sup>
- Indirect/Intangible: Loss of sense of place.<sup>91</sup>

Due to available information, this Profile focuses on direct/tangible losses, primarily structural damage to historic buildings. Tourism revenue is not available for all of the sites therefore; indirect/tangible losses cannot be fully assessed. Additionally, while loss of any of the sites will likely have negative cultural identity and sense of place impacts, quantifying these intangible losses is a challenge with no known U.S. precedents, and is beyond the scope of this report.

A handful of the vulnerable historic sites including China Camp State Park’s Shrimp Shed, Marinship’s Bay Model Visitor Center and Hamilton Army Air Field Fire House house museum collections open to the public with artifacts of historical interest. National Park Service’s 2016 *Cultural Resources Climate Change Strategy* compiles possible types of impacts to museum collections from increased flooding, inundation, increased storm surge, shoreline erosion and more.<sup>92</sup> Amongst these impacts collections could face increased rusting, corrosion, rot, mold, mildew, insect attacks, swelling, direct damage/destruction, and damage/destruction from humidity and moisture.<sup>93</sup>

A historic resource inventory for unincorporated Marin does not exist. To date, Marin County’s Architectural Commission has identified only one historic structure,<sup>94</sup> though it is outside the study area for this assessment.

## Archaeological Sites

The State of California recognizes 630 archaeological sites in Marin County including permanent settlements, seasonal camps, hunting camps/special use sites, and petroglyphs covering thousands of years of Miwok Indian history. The

<sup>86</sup> National Park Service website. Last updated July 22, 2016. [www.nps.gov/acad/learn/management/rm\\_culturalresources.htm](http://www.nps.gov/acad/learn/management/rm_culturalresources.htm)

<sup>87</sup> National Trust for Historic Preservation. 2011. *The Greenest Building: Quantifying the Environmental Value of Building Reuse*.

<sup>88</sup> Stephenson, V. and D’Ayala, D. *A New Approach to Flood Vulnerability Assessment for Historic Buildings in England* (2014), 1036.

<sup>89</sup> *ibid*

<sup>90</sup> *ibid*

<sup>91</sup> *ibid*

<sup>92</sup> Rockman, Marcy, Marissa Morgan, Sonya Ziaja, George Hambrecht, Alison Meadow. 2016. *Cultural Resources Climate Change Strategy*. Cultural Resources, Partnerships, and Science and Climate Change Response Program, National Park Service.

<sup>93</sup> *ibid*, 22-23

<sup>94</sup> Bill Kelley and Marty Zwick (Marin County Architectural Commission), personal communications July 2016.

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Anthropological Studies Center at Sonoma State University is currently inventorying additional sites in anticipation of sea level rise and erosion. The blue lines depicted in [Map 43](#) represent sixty-nine miles of surveyed public lands, and eight miles are partially surveyed. The complete surveys are limited to the public lands generally in West Marin. Much of the southern Marin shoreline is not applicable for the survey, as depicted in red. The marshlands in Corte Madera and Larkspur, China Camp State Parks, and St. Vincent's to Bel Marin Keys could feature archeological sites.

Specific locations of archaeological sites must remain confidential and Marin County CDA does not have a staff archaeologist to maintain and protect this sensitive information. Furthermore without allocated staff or financial resources, CDA's capability to conduct a comprehensive vulnerability assessment of archaeological sites is limited. However, Marin County has limited geographic and descriptive data that can be used to develop generalities on potential impacts. Based on the County's limited available spatial data, 19 sites could be vulnerable spanning all of the scenarios. Most of the sites are at or near the edge of the Bay.

Sites are considered vulnerable if they lie within the exposure zone, as tidal and storm surge flooding could impact the resources. Sites include permanent settlements represented by shell mounds or middens associated with marshes and other locations at or near the edge of the bay where shellfish/marine resources were available. Most of the sites are subject to tidal flooding at MHHW, with an additional handful subject to temporary flooding from seasonal storm surges.

Research on inundated archaeological sites, referred to as "wet site archaeology," can be used for clues on impacts from permanent sea level rise.<sup>95</sup> Sites located along sheltered bays where sea level rise is gradual may be less subject to destructive high-energy wave action during storms and therefore may fare better.<sup>96</sup> However, once sites are submerged data recovery becomes quite difficult and dangerous.<sup>97</sup> Underwater archaeology can be quite costly with numerous physical and safety challenges, and few organizations have

sufficiently trained staff.<sup>98</sup> Therefore, it is important to conduct cultural resource surveys prior to inundation to document what will be lost.<sup>99</sup>

National Park Service's 2016 *Cultural Resources Climate Change Strategy* also compiles possible types of impacts to archaeological sites from increased flooding, inundation, increased storm surge, shoreline erosion and more. In addition to total submersion, sites could be vulnerable from direct physical flood damage, destruction/loss of artifacts, post-flood subsidence, changes in pH, disturbance during flood clean-up, and more.<sup>100</sup>

A full assessment was conducted for Point Reyes National Seashore in 2013, factoring in topography and elevation, proximity to the ocean, underlying substrate, potential climate change impacts (e.g. inundation, wave erosion, sedimentation, etc.) and other factors. This assessment gave every site a rating of either high (should be mitigated within next 10 years) or low (should be mitigated within next 50 years). A more comprehensive survey such as this would need to be conducted for East Marin to fully assess the vulnerability of archaeological resources.

**Table 46. Number of Known Vulnerable Archeological Sites**

Near-term	3
Medium-term	5
Long-term	19

Source: Marin County CDA (confidential dataset)

<sup>95</sup> Newland, M. 2015. The Potential Effects of Climate Change on Cultural Resources Within Point Reyes National Seashore (Public Final Release, 2015). Prepared for the National Park Service. p. 30.

<sup>96</sup> *ibid*, 68.

<sup>97</sup> *ibid*, p. 69.

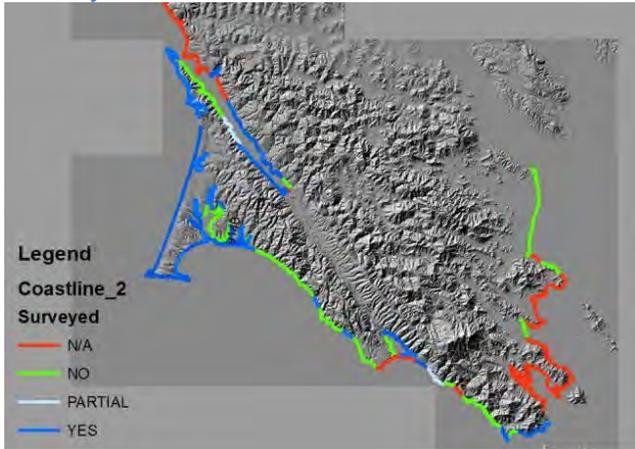
<sup>98</sup> *ibid*, 69-70

<sup>99</sup> *ibid*, 70

<sup>100</sup> Rockman, Marcy, Marissa Morgan, Sonya Ziaja, George Hambrecht, Alison Meadow. 2016. *Cultural Resources Climate Change Strategy*. Cultural Resources, Partnerships, and Science and Climate Change Response Program, National Park Service, 22-23

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Map 43. Archaeological surveying in Marin County



Source: Anthropological Studies Center, 2015



Horseshoe Cove and Fort Baker (circa 1950s) Credit: Golden Gate National Recreation Area Park and Archives Record Center

## Fort Baker

*National Register of Historic Places*

**Vulnerable Resources:** Seawall, Marine Hoist and Dock, Refueling Dock and Marine Railway

**Scenarios:** All

**Flood Depths:** 0-7'10"+100-year storm surge

**Primary Building Materials:** Concrete, Wood, Steel

At the southeastern foot of Marin County, Fort Baker was acquired by the Federal Government in 1866 and served as an Army Post until the mid-1990s. Now part of the Golden Gate National Recreation Area; its historic structures have remained intact including the numerous military buildings.

Three structures in the low lying area looking out to Horseshoe Bay could be vulnerable to flood depths of more than 4 feet in the near-term and nearly 8 feet plus storm surges in the long-term:

1. Seawall
2. Marine Hoist
3. Refueling Dock and Marine Railway  
(Replacement Value= \$2,142,003 Asset Priority Index= 69, Facilities Condition Index= 0)



In the long-term flooding could impact Bridgeway and Downtown Historic District buildings lining its west side. Credit: Marin CDA

## Sausalito

*National Register of Historic Places (Downtown Historic District)*

*National Park Service Certified Historic District*

*City of Sausalito Historic Resources Inventory Listing*

**Vulnerable Resources:** 26 National register district contributing sites, 17 noteworthy structures, 2 landmark buildings

**Scenarios:** All

**Flood Depths:** 09'04"+100-year storm surge

**Primary Building Materials:** Wood, concrete, brick, stucco, concrete

Prior to development of the Golden Gate Bridge, Sausalito was an important hub for rail, car and ferry traffic. During World War II, the city developed

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rapidly as a shipbuilding center. The Downtown Historic District centers on a ferry terminal with service to/from San Francisco, and remains an important area for commerce, and as a popular visitor destination. The district is a National Park Service Certified Historic District.<sup>101</sup>

Sea level rise is projected to inundate parts of Sausalito's Downtown Historic District in the near-term, with storms expanding the vulnerable area and exacerbating impacts. At the long-term scenario with a 100-year storm surge, 26 contributing sites could be vulnerable. Further analysis could determine specific vulnerability of each building based on location, flood depth, height above grade, materials, etc.

Sausalito's Historic Preservation Regulations include preservation and treatment guidelines and standards for historic buildings and properties. Current regulations do not address flooding, through future updates could consider the need for adaptation strategies necessary for flood protection and identify design approaches to minimize integrity impacts.

Both water and land access routes to Sausalito's Downtown Historic District could be vulnerable in the near term. GGF's Sausalito Ferry could face inundation in the near-term; however, because the facility is bayside of mean sea level delineation, flood depth values are not provided. In the long-term, parts of Bridgeway could be tidally flooded, and impacts will worsen with storms.

In other parts of Sausalito, a handful of private properties on the city's Historic Resources Inventory could also be vulnerable at varying scenarios. Sausalito's Ark Row District includes seven noteworthy properties, vulnerable to more than 6 feet MHHW in the near-term and more than 9 feet in the long-term. An additional ten other properties could be vulnerable in the long-term, including the original firehouse (8 of the 10 only subject to storms). Lastly, two of Sausalito's landmark buildings, Castle by the Sea and Ice House, could be vulnerable to storms by the long-term scenarios.

## Marinship, Sausalito

*Potential National/State Register Sites*

**Vulnerable Resources:** 10 potential historic resources

**Scenarios:** All

**Flood Depths:** 2'1" - 2'8"+100-year storm surge; flood depth data limited

**Primary Building Materials:** Concrete, wood, stucco, steel

The former Marinship yard, an approximately 210-acre site, was one of six Emergency Shipyards in the San Francisco Bay Area established during World War II. Marinship was built on bay fill, and some areas, such as Heath Way, have experienced approximately five feet of subsidence since 1943 based on photographic records.<sup>102</sup> In 2010, the Marinship Historic Context Statement inventoried and recorded every major World War II era building and structure. The effort concluded:

- Marinship retains a higher degree of architectural integrity than any of the other Bay Area World War II emergency shipyards,
- Eight surviving buildings could form a California Register eligible district in the southernmost portion of the district,
- Two sites are individually eligible for the National Register of Historic Place, and
- Four sites are individually eligible for the California Register of Historic Places.

These sites were never nominated for national or state historic registers, and therefore have no formal historic status. However, these resources can be considered potential historic resources.

In the near term, shipways that are part of Building 23, the Marinship Shipways and Offices, could be vulnerable to the increased 10 inches of sea level rise. More detailed analysis would be necessary to fully evaluate integrity impacts that may occur.

In the long-term, two buildings, the Marinship Maintenance Garage and the Marinship Mold Loft and Yard Office, could be vulnerable to tidal flooding at depths deeper than two feet. Both buildings were erected in 1942 with cinderblock construction and could be vulnerable to standing water. The Mold Loft could be eligible for the California Register, and the Maintenance garage could support a California register-eligible district.

<sup>101</sup> Office of Historic Places, accessed July 14, 2016. [http://ohp.parks.ca.gov/?page\\_id=27283](http://ohp.parks.ca.gov/?page_id=27283)

<sup>102</sup> Robin Petravic (Heath Ceramics), personal communications. July 2016.

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Seven other properties could be vulnerable to the 100-year storm surge by the long-term scenario including Building 29, the Marinship Warehouse. This building now serves as the Bay Model Visitors Center which houses the U.S. Army Corps of Engineers Bay Model, a working hydraulic scale model of the SF Bay-Delta, completed in 1957.<sup>103</sup> The model is no longer used for research, but open to the public for educational purposes.



Gate 5 Road in Marinship. Jan. 2004. Credit: R. Petrav

## Belvedere

*Historic Resource Inventory database and local register*

**Vulnerable resources:** 1 California Register of Historic Places site, 4 additional locally registered historic sites

**Scenarios:** All

**Flood Depths:** 6" - 3'2" + 100-year storm surge

**Primary Building Materials:** Wood

Originally a fishing community adjacent to the Tiburon railroad, Belvedere was settled in the late 19<sup>th</sup> century and incorporated in 1896.<sup>104</sup>

Vulnerable historic resources in Belvedere include:

- Properties on Beach Road, along the northwest edge of Belvedere Cove are exposed, including several in the near term. A handful of these properties were designed by well-known architect Albert Farr including the Farr cottages/Farr apartments and the Belvedere Land Company. Additionally, the China Cabin

is along this vulnerable waterfront. This saloon was once housed by the S.S. China, built in 1866 to carry passengers from San Francisco to Asia.<sup>105</sup>

- The Belvedere Presbyterian Church/City Hall/Community Center.



The 1905 Belvedere Land Company building, designed by Albert Farr.<sup>106</sup>

## Tiburon

*Local Historic Inventory for Downtown Tiburon/List of Buildings Included and Eligible for California State Historic Building Code*

*National Register of Historic Places (Peter Donahue Building)*

**Vulnerable Resources:** 21 buildings

**Scenarios:** All

**Flood Depths:** 1'4" - 8'6" + 100-year storm surge

**Primary Building Materials:** Wood

<sup>103</sup> U.S. Army Corps of Engineers Bay Model. Last updated August 18, 2016. [en.wikipedia.org/wiki/U.S.\\_Army\\_Corps\\_of\\_Engineers\\_Bay\\_Model](http://en.wikipedia.org/wiki/U.S._Army_Corps_of_Engineers_Bay_Model)

<sup>104</sup> Belvedere, CA. Last updated January 9, 2017. [en.wikipedia.org/wiki/Belvedere,\\_California](http://en.wikipedia.org/wiki/Belvedere,_California)

<sup>105</sup> Belvedere-Tiburon Landmarks Society, China Cabin. Accessed January 18, 2017.

<sup>106</sup> Albert L. Farr. Last updated October 10, 2016. [landmarkssociety.com/landmarks/china-cabin/](http://landmarkssociety.com/landmarks/china-cabin/)  
[en.wikipedia.org/wiki/Albert\\_L.\\_Farr](http://en.wikipedia.org/wiki/Albert_L._Farr)

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Vulnerable historic sites include more than 20 buildings along upper and lower Main Street. Built in the 1920s, original uses included saloons, apartments, a bank, hotel, grocery store, and butcher. Then and now, commercial uses provide commuters and visitors using the Tiburon Ferry Terminal with shops and restaurants. Several lower Main Street sites could be subject to tidal inundation in the near-term. Upper Main Street sites are subject to storm surge flooding in the long-term. Existing flood proofing and site improvements may help reduce building sensitivities and increase flood resiliency.

Just beyond the downtown area, the wood framed San Francisco and North Pacific Railroad Station House-Depot, or the Peter Donahue Building could be vulnerable to the 100-year storm surge. The building is listed on the National Register of Historic Places as the old station house at the ferry railroad terminus of the railroad<sup>107</sup> and is the only surviving dual use terminal west of the Hudson River. The building now houses the Tiburon Railroad and Ferry Depot Museums. On the bottom floor is scale model of Tiburon circa 1900-1910.

Road access would be drastically compromised including permanent flooding of Main Street and Tiburon Blvd., the main thoroughfare connecting Tiburon with Highway 101. Water access would also be compromised, as the Tiburon Ferry buildings, land, and docks could be flooded in the near-term.



*Tiburon once served as the southern terminus of the Northwestern Pacific Railroad. Credit: Photographer on San*

*Francisco and North Pacific Railroad Station House-Depot  
National Register of Historic Places Nomination Form*



*Tiburon's Main Street commercial buildings date back to the early 1900s, and are adjacent to the ferry terminal. Credit: Marin CDA*

## Angel Island

*California State Landmark*

*National Register of Historic Places (Immigration Station)*

**Vulnerable Resources:** Ferry terminal (access, non-historic)

**Scenarios:** All

**Flood Depths:** 0- 6'9"+100-year storm surge

Historically, Angel Island is best known for its immigration station, sometimes referred to as the "Ellis Island of the West." From 1910-1940, hundreds of thousands of immigrants often from China and Japan were detained on the island, sometimes for months as part of immigration control. The island is a popular destination for visitors with a variety of outdoor recreational activities and interpretation throughout its historical buildings.

Angel Island's historic structures are generally at higher elevations and not adjacent to water and therefore not vulnerable to sea level rise and increased storms. However, the Angel Island ferry is vulnerable in the near-term with flood depths increasing in the medium- and long-term scenarios. If the ferry terminal floods it could cause a reduction or loss in important tourism revenue needed to sustain the historic buildings.

<sup>107</sup> Arnett, Victoria Mason. 1994. National Register of Historic Places Form - San Francisco and North Pacific Railroad Station House/Depot.

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## Larkspur

*Larkspur Historic Resources Inventory*

**Vulnerable Resources:** 6 homes

**Scenarios:** All

**Flood Depths:** 1'1" - 6'8"+100-year storm surge

**Primary Building Materials:** Wood

Six vulnerable historic homes lie along Boardwalk one, the only remaining of the four original communities of arks, or small canal homes accessed with boardwalks above the marshland. Many of the homes have had alterations and additions compromising the original defining features, though still retain historical character through features including size, materials, scale, color, etc.<sup>108</sup>



Larkspur's Boardwalk #1 has generally retained its cultural style of canal homes accessed via boardwalks. Credit: Marin CDA

## San Rafael

*San Rafael Historical/Architectural Survey & Historic Properties List*

**Vulnerable Resources:** 1 Landmark, 1 District, at minimum 2 additional potentially historic areas, at minimum 4 additional potentially historic buildings

**Scenarios:** 2, 3, 4, 5, 6

**Flood Depths:** 0 to 6'+100-year storm surge

**Primary Building Materials:** Wood, Brick

Much like other communities in Marin, San Rafael was once home to Miwok Indians prior to European settlement. The Mission San Rafael Arcángel, the

last Spanish mission Spanish established in California was erected in 1817. In 1879, the San Francisco and North Pacific Railroad reached San Rafael. The national rail network linked with San Rafael in 1888 leading to increased settlement and economic growth.<sup>109</sup>

San Rafael's exposed historic resources could be vulnerable to both tidal flooding and 100 year storm flooding from San Rafael Creek, generally in close proximity to US Highway 101. Resources include the Litchfield Sign (local landmark), the French Quarter, two potentially historic areas (Ritter Street and Gerstle Park (partial), and four potentially historic structures.



San Rafael's French Quarter Historic District includes Victorian Homes now used for local businesses. Credit: Marin CDA

## China Camp State Park

*National Register of Historic Places*

**Vulnerable Resources:** Shrimp Shed and 305' Pier

**Scenarios:** All

**Flood Depths:** 0-10'0"+100-year storm surge

**Primary Building Materials:** Wood

**Historic American Landscape Survey:** Underway

China Camp was once home to Miwok Indians who settled there due to its pristine salt marshes and Point San Pedro's ideally positioned vantage point. This site is also the only remaining historic

<sup>108</sup> City of Larkspur. 2005. Historic Resources Survey Re-evaluation

<sup>109</sup> Wikipedia, San Rafael, California. Last updated December 15, 2016. [en.wikipedia.org/wiki/San\\_Rafael,\\_California](https://en.wikipedia.org/wiki/San_Rafael,_California)

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Chinese-American shrimp village in the Bay Area. In the late 1800's China Camp housed around 500 residents, many from Canton, who made a living in shrimp harvesting. The shrimp were typically dried on the banks and shipped back to China for medicinal purposes. Both racially motivated legislation and environmental changes led to the decline of shrimping practices. However, several of the historic structures have remained structurally intact and a seventy-five acre district encompassing them was added to the National Register of Historic Places in 1979. Also included in the district is a Native American shellmound. Finally, a Historic American Landscape Survey (HALS) is currently underway to document the site's historic resources.<sup>110</sup>

Vulnerable structures at China Camp include the wood-framed shrimp shed and 305 foot pier along its waterfront. Flood depths could reach up to 10 feet of tidal water potentially drowning the pier and damaging both resources. The Shrimp Shed currently serves a visitor center with interpretive panels and artifacts educating the public on the early immigrant history, traditional fishing practices and more. These historic artifacts could also be damaged as the building is flooded. Erosion could further exacerbate impacts to the site, damaging cultural landscape features such as the beach itself. Furthermore, North San Pedro Road through China Camp currently gets flooded at king tides, compromising public and maintenance access. This may worsen with higher sea levels.



China Camp drying grounds. 1889. Credit: Wikipedia.



King Tide floods N. San Pedro Road in China Camp. Nov. 2015. Credit: Marin CDA

## Hamilton Army Air Field

National Register of Historic Places

**Vulnerable Resources:** 8 buildings, 1 structure, 1 object

**Scenarios:** 5, 6

**Flood Depths:** 2'5"-10'4"+100-year storm surge

**Primary Building Materials:** Concrete, Stucco

**Historic American Building Survey:** CA-2398

In the 1930's, the 1,779 acre Hamilton Army Air Field was constructed as headquarters for the 1<sup>st</sup> Wing of the Air Force, one of only three such bases

<sup>110</sup> Patillo, C. *China Camp HALS*. Last updated July 1, 2012. <http://halsca.blogspot.com/2012/07/china-camp-hals.html>

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in the nation.<sup>111</sup> The site was transferred to the US Navy, Army and Coast Guard in 1974, and is now part of Novato. Currently buildings house a variety of residential and commercial uses.

The National Register of Historic Places Registration Form identifies 3 discontinuous areas of the historic district.<sup>112</sup> Of the three areas, Area C could be subject to average high tide flood depths of 2'5" to 10'4" by the long term scenario. All ten of its contributing resources could flood, including:

- Double hangars- 3 identical H-shaped buildings with a central shop and hangars on either end,
- Air Corps shops and hangar #9: Identical exterior to other hangar buildings, with half of its interior designed as a shop,
- Flagpole- 75 foot metal flagpole with historic plaque,
- Headquarters building- T-shaped with central two-story section and one-story wings,
- Non-Commissioned Officers' Barracks- 3 H-shaped 3-story buildings, and
- Electrical transformer vault.

Additionally, the Hamilton Field History Museum is housed in the historic 1934 firehouse directly adjacent to Area C and also exposed in the long term scenario. The museum opened in 2010 to collect, preserve, exhibit, and interpret Hamilton field and Hamilton air force base history.

Table 47 highlights the vulnerable cultural resource assets and ranks them by onset and flooding at MHHW. In addition to these sites, a few others could be vulnerable under long-term scenario 6 sea level rise conditions with a 100-year storm surge. These are:

- Sausalito, two landmark buildings,
- Belvedere Presbyterian Church/Belvedere City Hall/Community Center, and
- Tiburon Railroad Station House-Depot.



*Hamilton Field's Headquarters now serves as the Novato Arts Center. Credit: Marin CDA*

<sup>111</sup> Maniery, M.L., and C.L. Baker. 1998. National Register of Historic Places Registration Form – Hamilton army Air Field Discontiguous Historic District.

<sup>112</sup> Ibid.

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Table 47. Vulnerable Cultural Resource Assets Ranked by Onset and Flooding at MHHW

Location	Asset	Near-term	Medium-term	Long-term
		Scenario 1	Scenario 3	Scenario 5
<b>Confidential locations</b>	Archaeological sites	3 sites	5 sites	14 sites @ 1'11"-10'8"
<b>Belvedere</b>	Four Waterfront Properties along Beach Road	6"	1'3"	3'0"-3'2"
<b>Sausalito</b>	Ark Row District	3'6"-6'2"	3'1"-6'10"	6'1"-9'5"
<b>Tiburon</b>	Main Street	2 buildings @ 7'3"-7'4'	6 buildings @ 6'8"-7'11"	11 buildings @ 1'4"-8'6"
<b>Pt. San Pedro</b>	China Camp Historic District*	0-7'3"	0-7'8"	0-10'0"
<b>Larkspur</b>	Boardwalk # 1	1'1"-3'1"	1'10"-3'10"	4'7"-6'8"
<b>Fort Baker*</b>	National Recreation Area	0-4'5"	0'-5'2"	0-7'10"
<b>Angel Island</b>	Angel Island* Ferry Terminal	0-3"	0-11"	0-6'9"
<b>Sausalito</b>	Downtown Historic District*	4 sites	4 sites	4 sites @ 0-9'4" (22 sites w/ storm surge)
<b>San Rafael</b>	The Litchfield Sign	w/ storm surge	3'3"	6'0"
<b>San Rafael</b>	The French Quarter District			2'2"-2'4"
<b>San Rafael</b>	2 potentially historic areas and at minimum 4 additional potentially historic structures			0-2'11"
<b>Sausalito</b>	Noteworthy structures outside the Downtown Historic District			2 sites @ 1'4"-6'1" (8 sites w/ storm surge)
<b>Sausalito</b>	Marinship potential resources	1 resource		2 resources @ 2'1"-2'8" (7 resources w/ storm surge)
<b>Novato</b>	Hamilton Army Air Field* Area C			2'5"-0'4"

\*indicates listing on National Register of Historic Places

Source: MarinMap; CoSMoS, Marin CDA; City of Sausalito, Historic Resource Inventory Listing, Marinship Historic Context Statement; Local Historic Inventory for Downtown Tiburon; China Camp National Register of Historic Places Inventory – Nomination Form; Update of the Historic Resources Inventory (Larkspur); Fort Baker, Barry and Cronkhite National Register of Historic Places Inventory – Nomination Form; Sausalito Historic District National Register of Historic Places Inventory – Nomination Form; City of Sausalito, Historic Resource Inventory Listing; Historic Properties List (San Rafael); San Rafael Historical/Architectural Survey; Marinship Historic Context Statement; National Register of Historic Places Registration Form – Hamilton Army Air Field Discontiguous Historic District; City of Belvedere General Plan Update – Cultural Resources.

## Other Considerations

### Economic

Historic preservation has proven to be an effective tool for small business sustainability, community development, renewal, and revitalization, heritage tourism development, and more.<sup>113</sup> Several of Marin's vulnerable historical areas house local businesses important to economic wellbeing. Loss or deterioration of these resources could have negative economic impacts. Additionally, Marin's historic sites contribute to the county's unique charm and character, adding to the appeal for tourism, thus assisting with economic development through increased visitor spending, sales tax, and transient occupancy tax. In some cases historic sites adjacent to the Bay may serve as shoreline armoring or buffer storm impacts helping to protect lands and properties inland thus helping to ensure their continued economic use.

### Environmental

In addition to providing valuable information on cultural history, archaeological resources can be important information sources on natural history, which may be of increased importance as global temperatures rise. Through analysis of elements such as pollen, seeds, shells, and bones, archaeological data can reveal which plants and animals thrived during past climactic periods (e.g., the mid Holocene) with land and water temperatures comparable to potential future conditions with climate changes, including secondary impacts such as increased ocean acidification.<sup>114</sup> Such data could be applied for future ecosystem restoration and management plans.

In addition to allowing communities to remain intact, continued use of older buildings has environmental benefits. Retrofitting existing homes through elevation and flood proofing can extend their lives in the face of SLR and increased storms, thus avoiding the immediate need for new construction. Building reuse is almost always less environmentally taxing than new construction, and it can take 10 to 80 years for a new building that is 30% more energy efficient than an average performing existing building to overcome negative climate impacts from

construction.<sup>115</sup> Materials production and transport, building construction, and demolition waste disposal all yield environmental impacts, which could be avoided through preserving/protecting existing buildings.

### Social Equity

In addition to losing valuable historic information about the region, the loss of archaeological sites can have significant sense of place impacts, particularly for Native American's who consider the sites sacred. While documenting the sites can help preserve some of the valuable historical information, the loss of these irreplaceable resources could represent an unprecedented loss to history and culture with no established processes to mitigate their disappearance.

Social equity is important in the field of historic preservation. Both China Camp and Angel Island hold stories of historically marginalized Asian immigrants. Preservation of these irreplaceable sites is important to ensure they remain in the collective memory and contribute to a more inclusive understanding of local and national history.

Several of the public historic sites offer educational experiences that can be enjoyed by many people regardless of socioeconomic circumstances and age. China Camp, the San Francisco Bay Model, and Fort Baker can all be accessed for relatively low costs adding to their appeal for families with children.

### Management

The loss of archaeological sites can present management challenges including the need for increased documentation and protection of sites, particularly those of high intrinsic value. Close coordination with Native American groups will be critical to ensure that adaptation strategies protect vulnerable archaeological sites.

Little guidance exists to inform the challenge of adapting historic sites in the face of sea level rise. Elevation may be structurally feasible, but could have negative integrity impacts. Levees and seawalls could have negative impacts to the cultural landscape. Relocation could remove sites from the historic districts or contexts. Such strategies may

<sup>113</sup> Rypkema, Donovan D., 2005. The Economics of Preservation: A Community Leader's Guide.

<sup>114</sup> Newland, Michael (Sonoma State Anthropological Studies Center). 2015. Personal Communications

<sup>115</sup> National Trust for Historic Preservation. 2011. The Greenest Building: Quantifying the Environmental Value of Building Reuse.

therefore not be allowed under current local design review guidelines.

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to take into account project impacts on historic properties. This includes projects located on federal properties or using federal funding. Under Section 106, any alterations would need to be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Adaptation strategies that have negative impacts on historic integrity, introduce incompatible elements, change the use or setting, or relocate landward are amongst the types of projects that would likely be deemed adverse effects.<sup>116</sup> Neglect and deterioration can also be adverse effects<sup>117</sup> that merit consideration as sea level rise and increased storms could exacerbate the deterioration of historic properties if not properly managed for.

DRAFT

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<sup>116</sup> Advisory Council on Historic Preservation. 2015. Protecting Historic Properties: A Citizen's Guide to Section 106 Review.

<sup>117</sup> Ibid.

# CULTURAL RESOURCES

Map 44: Northern Study Area Vulnerable Cultural Resource Assets

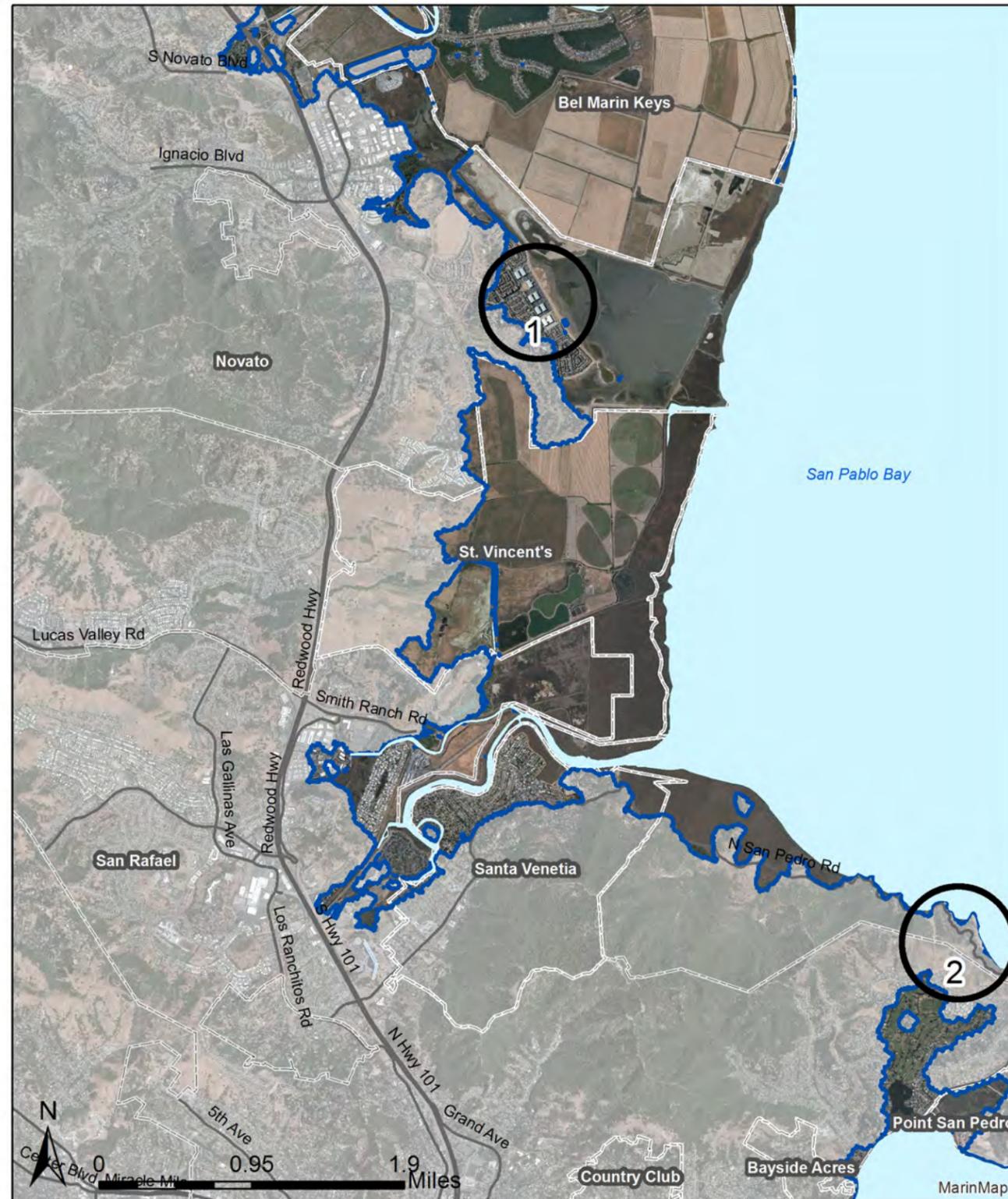
## Vulnerable Historic Buildings

- █ Scen. 1: 10" Sea Level Rise (SLR)
- █ Scen. 2: 10" SLR+Storm Surge
- █ Scen. 3: 20" Sea Level Rise
- █ Scen. 4: 20" SLR+Storm Surge
- █ Scen. 5: 60" Sea Level Rise
- █ Scen. 6: 60" SLR+Storm Surge

## Location Indicators

- Municipality
- Major Road
- ~ Inland Extent: Sea Level

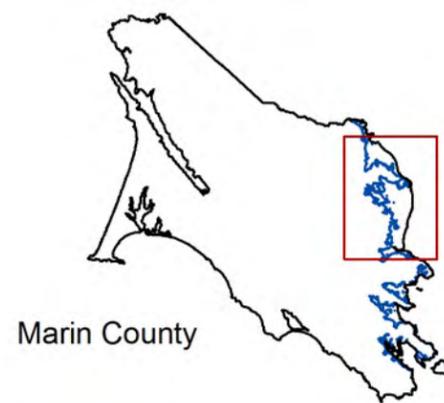
Archaeological resources may be present.  
 Source: MarinMap; CoSMoS, Marin CDA;  
 China Camp National Register of Historic Places Inventory – Nomination Form; National Register of Historic Places Registration Form – Hamilton Army Air Field Discontiguous Historic District;



1: Hamilton Army Air Field



2: China Camp State Park



Date:  
2/17/2017



Disclaimer: Vulnerability Assessment maps, tables, etc. can be used as a resource to help identify potential hazardous areas and vulnerable assets. Marin County, and data providers here in, make no warranties of the accuracy or completeness of maps and data. Maps are representational and subject to future revision. Local site conditions must be examined. Commercial use is prohibited.

# CULTURAL RESOURCES

Map 45: Southern Study Area Vulnerable Cultural Resource Asset

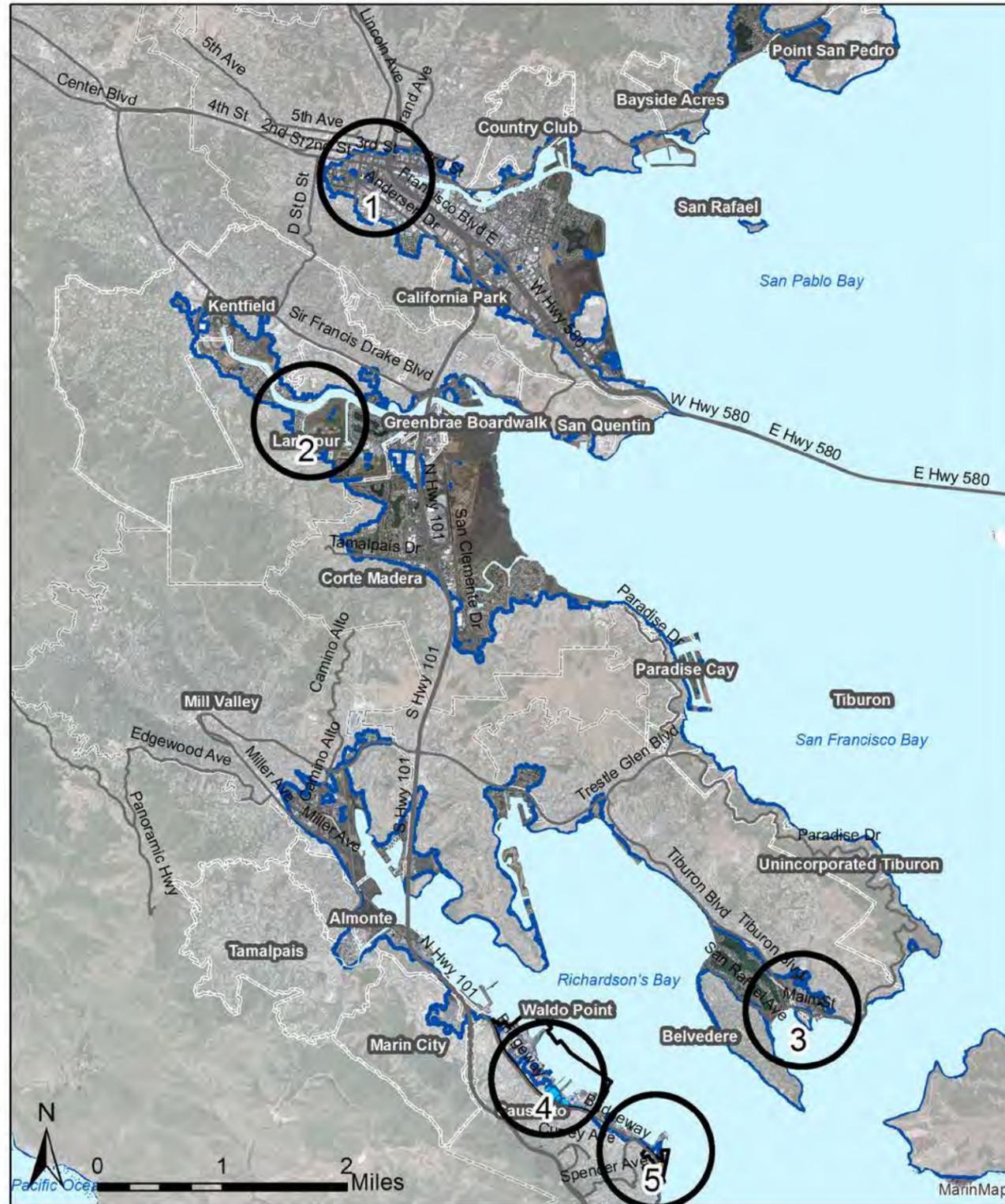
## Vulnerable Historic Buildings

- Scen. 1: 10" Sea Level Rise (SLR)
- Scen. 2: 10" SLR+Storm Surge
- Scen. 3: 20" Sea Level Rise
- Scen. 4: 20" SLR+Storm Surge
- Scen. 5: 60" Sea Level Rise
- Scen. 6: 60" SLR+Storm Surge

## Location Indicators

- Municipality
- Major Road
- ~ Inland Extent: Sea Level @ 60"+100-year Storm

Archaeological resources may be present.  
 Source: MarinMap; CoSMoS, Marin CDA; City of Sausalito, Historic Resource Inventory Listing, Marinship Historic Context Statement; Local Historic Inventory for Downtown Tiburon; Update of the Historic Resources Inventory (Larkspur); Sausalito Historic District National Register of Historic Places Inventory – Nomination Form; City of Sausalito, Historic Resource Inventory Listing; Historic Properties List (San Rafael); San Rafael Historical/Architectural Survey; Marinship Historic Context Statement; City of Belvedere General Plan Update – Cultural Resources



1: San Rafael



2: Larkspur



3: Tiburon-Belvedere

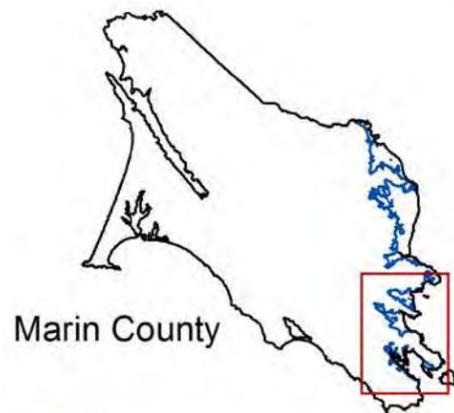


4: Marinship



5: Sausalito Downtown Historic District

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Marin County



Date:  
2/17/2017

