

MILL VALLEY

Community Profile: Mill Valley

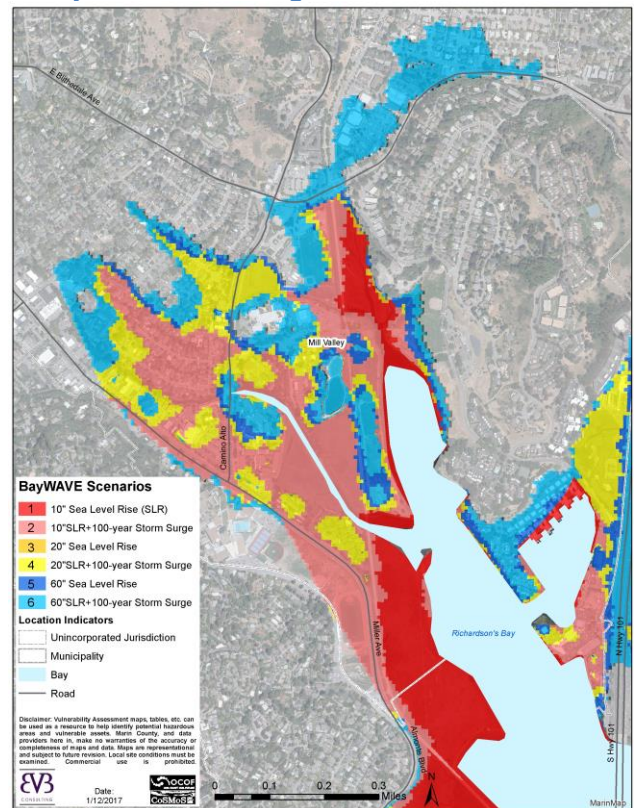
Just north east of Sausalito is Mill Valley. Mill Valley borders Richardson’s Bay and extends into the narrow valley. While only a small area of the community could flood tidally, several key access routes and public facilities used by entire communities are in the exposed low lying areas surrounding the Bay. Key issues in Mill Valley are:

- Miller Avenue could be flooded in the near-term. This area already experiences seasonal flooding that extends to Tamalpais High School fields.
- Homes and businesses along and near Shelter Cove, Hamilton Drive, and the Frontage Road could expect near-term flooding impacts.
- The Redwoods, a retirement community, is exposed and completely surrounded, and therefore vulnerable in the medium-term.
- Sanitary Association of Southern Marin (SASM) treatment plant, serving six sanitary districts and 30,000 people, including Mill Valley residents, could expect flooding impacts between the medium and long-term scenarios.
- The Mill Valley-Sausalito Path could flood a majority of the year during average high tides in the medium-term.
- Mill Valley Middle School could expect sea level rise impacts to the grounds, and could expect flood waters reach the buildings with the 100-year storm coincidence.
- Bothin Marsh habitat could transition to mudflats without adequate sediment supply because the marsh does not have options for inland migration.
- Mill Valley Recreation Center fields could be vulnerable to sea level rise in the long-term. A 100-year storm surge could impact nearly the whole site.
- Camino Alto, between Miller and Blithedale Avenues, and the neighborhood north of it, could expect flooding in the long-term.

IMPACTS AT-A-GLANCE: SCENARIO 6

1,000+ living units	13,500+ people
273 acres exposed	25 commercial parcels
5.6 miles of roads	
Storm and tidal impacts already occur	Property Owners SASM City of Mill Valley Mill Valley School District
Nearly \$550 million of assessed property value and \$830 million in single-family market value vulnerable ¹⁷²	

Map 54. Mill Valley Sea Level Rise and 100-year Storm Surge Scenarios



¹⁷² 2016 dollars

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Vulnerable Assets

Mill Valley's most vulnerable assets are Miller Avenue, Shelter Bay area, the Sanitary Association of Southern Marin (SASM) treatment plant, and Bothin Marsh. However, by the long-term both the western and northern access routes in to the community could be vulnerable to flooding during a 100-year storm surge. Combined with existing storm water issues, storm impacts from rain and from the bay, or even a king tide, could have devastating impacts on natural and built assets in low-lying areas closest to the shoreline.

Land

Much like other communities in the region, Mill Valley has extensive development upland in the valley and along the valley hillsides. Thus, developable Bayfront land is minimal and intensely utilized. In addition, Mill Valley is fronted with Bothin and Sutton Marshes that serve valuable ecological and physical buffering functions. The areas contribute greatly to the acreage counted.

Acre

In near-term scenario 1, 44 acres of mostly marsh and water's edge land could be vulnerable to monthly tidal flooding at MHHW. In near-term scenario 2, a 100-year storm could flood these and sixty more acres, amounting to 3 percent of Mill Valley's land area. In medium-term scenario 3, roughly 20 more acres could anticipate tidal flooding, and nearly triple this could anticipate storm surge flooding in scenario 4. By the long-term, tidal flooding could extend beyond the marshes and their borders into developed areas. In scenario 5, 190 acres, or 6 percent of acres in the community may be exposed to tidal flooding. In scenario 6, with the additional 100-year storm surge, these 190 acres, plus nearly 100 more could experience storm surge exposure. This indicates that ten percent of the Mill Valley's land area could be exposed to five feet of sea level rise and a 100-year storm surge.

Parcels

Land is divided into parcels for ownership and development purposes. Parcels are assigned land uses and tend to stay true to that designation, though many sites could feature multiple uses, such as commercial with housing included. Examining parcels can provides estimate of how many land uses and human activities may be vulnerable.

Table 57. Mill Valley Exposed Acres by Scenario

Scenarios	Acres		
	#	%	
Near-term	1	44	1
	2	103	3
Medium-term	3	62	2
	4	183	6
Long-term	5	190	6
	6	273	9

Source: MarinMap, CoSMoS

Table 58. Mill Valley Vulnerable Parcels by Scenario

Scenarios	Parcels		
	#	%	
Near-term	1	80	1
	2	195	3
Medium-term	3	80	1
	4	338	6
Long-term	5	361	6
	6	741	13

Source: MarinMap, CoSMoS



Sutton Marsh habitat and Mill Valley Recreation Center.
Credit: Marin County DPW

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Table 59. Mill Valley Vulnerable Residential and Commercial Parcels

Land Use	Scenarios					
	1		3		5	
	Near-term		Medium-term		Long-term	
	#	%	#	%	#	%
Residential	74	1	169	1	308	6
Commercial	3	1	3	1	25	10

Source: MarinMap, CoSMoS

Table 60. Mill Valley Vulnerable Parcels by Land Use

Land Use	Scenarios					
	1		3		5	
	Near-term		Medium-term		Long-term	
	#	Ac.	#	Ac.	#	Ac.
Commercial Improved	3	14	3	14	19	27
Commercial Unimproved					6	9
Exemption Improved					4	14
Multi-Family Residential Improved					1	0.13
Single Family Attached	73	1	71	1	184	3
Single Family Residential Improved					122	17
Single Family Residential Unimproved	1	3	1	3	1	3
Tax Exempt	1	6	3	8	21	63

Source: MarinMap, CoSMoS

In scenario 1, exposed acreage is divided into 80 vulnerable parcels. These parcels are essentially all parcels that directly border the water's edge. These consist of several large publically owned parcels and smaller residential parcel. A small number of commercial parcels are impacted. With a 100-year storm surge, scenario 2, 195 parcels, or three percent of all parcels in Mill Valley could be vulnerable to storm surge flooding. In medium-term scenario 4, up to six percent of parcels could be vulnerable to storm surge flooding. These parcels are also likely to experience tidal flooding impacts by long-term scenario 5. Over twice this amount may experience 100-year storm surge flooding by scenario 6.

As shown in [Table 59](#) and [Table 60](#), by land use, less than 1 percent of residential and commercial parcels could experience flooding in the near- and medium-terms. The primary vulnerable land use is tax exempt, or publicly owned. These include parkland, two schools, and a waste water treatment facility. In the long-term, however; several hundred residential parcels, accounting for six percent of all residential parcels in Mill Valley, could be vulnerable to tidal impacts. Residential parcels include the Redwoods retirement community, homes on the Shelter Bay inlet, and homes north of Camino Alto at roughly Sycamore Avenue. By this time 25 commercial parcels, 10 percent of commercial parcels in Mill Valley, along Camino Alto and Redwood Highway Frontage Road could also experience tidal flooding.

In long-term scenario 6, even more homes north of Camino Alto could flood, as could the shopping centers east of Blithedale Avenue. With a 100-year storm surge in scenario 6, nearly fifteen percent of residential parcels, and one-third of the commercial parcels could be vulnerable to temporary flooding. Commercial properties that could experience flooding are the Mill Valley Shopping Center in the long-term and the Alto Shopping Center in the long-term with a 100-year storm surge, scenario 6.

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Buildings

Many of the vulnerable parcels contain one or more buildings. Flooding to buildings and their contents could result in significant amounts of building and material damage, or worse loss. Relative to other East Marin communities, Mill Valley has a low number of buildings vulnerable to sea level rise and a 100-year storm surge. However, several areas already vulnerable to stormwater backups could expect these conditions to worsen with added saltwater.

Table 61 summarizes the vulnerable buildings in the study area. As shown, in the near-term, a few buildings could expect tidal flooding. In scenario 2, ten inches of sea level rise with a 100-year storm surge; more than 200 buildings could be vulnerable. With respect to sea level rise, the medium-term is similar to the near-term; however, the 100-year storm surge could impact more than a 100 more buildings. In the long-term, the same buildings impacted in scenario 4, could now experience tidal flooding at MHHW. These buildings account for roughly five percent of Mill Valley's building stock. In the long-term with a 100-year storm surge, these figures nearly double over scenario 5 figures to over 500 buildings. Most of these buildings are on residential parcels, though Mill Valley Middle School, the SASM treatment plant, the Mill Valley Recreation Center, and Tamalpais High School are also vulnerable. Vulnerable residential parcels now include homes in the southern end of the Sycamore neighborhood. In addition, buildings in the commercial center buildings along Camino Alto and East Blithedale could face storm flooding.

Most of Mill Valley's buildings are wood-framed. While it is unclear how many buildings are older than 30 years, many in the low-lying areas are. Newer buildings typically have drilled piles 20-30 feet deep with reinforced steel cages and concrete to connect the homes to the foundation. This feature can help buildings withstand lateral forces from wind and water. However, even if buildings remain structurally intact, utility-related equipment could be vulnerable. Moreover, material and content damage from water and salt could occur.

Table 62 divides the vulnerable buildings into flood depth intervals, showing how many buildings could be flooded with one, two or ten feet of tidal flooding during MHHW. This analysis reveals that flood depths are shallow through medium-term. However, by the long-term, nearly 250 buildings could flood

with three feet of water, and seventy could be impacted by more than three to five feet of water.

Table 63 estimates costs using FEMA tagging designations for damage to buildings and their contents. This analysis focuses on scenario 6 sea level rise and storm surge conditions, the worst case storm scenario analyzed. If every vulnerable building experienced minor levels of damage, up to \$9 million¹⁷³ in damages could occur. If all of the buildings impacted under scenario 6 were to become unusable, over \$300 million in assessed structural value could be lost.¹⁷⁴ Reality would likely reflect a mix of damage levels. The deterioration and destruction of Mill Valley's commercial and public buildings would have significant impacts on the local economy and sense of place. Having to rebuild or repair buildings after flooding can be traumatic and costly for tax paying residents and business owners.

Table 61. Mill Valley Vulnerable Buildings

Scenarios		Buildings	
		#	%
Near-term	1	5	0
	2	207	3
Medium-term	3	7	0
	4	325	5
Long-term	5	329	5
	6	536	8

Source: MarinMap, CoSMoS

Table 62. Mill Valley Vulnerable Buildings' Average Flood Depth MHHW Estimates

Flood Depth (feet)		Scenarios		
		1	3	5
0.1-1	#		1	32
1.1-2	#		1	96
2.1-3	#			127
3.1-4	#			59
4.1-5	#			12

Source: MarinMap, CoSMoS

* Flood depth data is not available for all exposed assets.

¹⁷³ 2016 dollars

¹⁷⁴ 2016 dollars

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Table 63. Mill Valley Vulnerable Building's FEMA Hazus Damage Cost* Estimates for Long-term Scenario 6

Buildings Scenario 6	536
Yellow Tag: Minor Damage \$5,000 minimum	\$2,680,000
Orange Tag: Moderate Damage \$17,001 minimum	\$9,112,536
Red Tag: Destroyed Assessed structural value	\$300,215,511

Source: *MarinMap, CoSMoS. *2016 dollars*

The maps on the following pages illustrate vulnerable buildings by scenario. The areas in the call out circles enable the reader to see areas that are difficult to see on the large scale map. The circles do not indicate that these areas are more vulnerable than others along the shoreline.







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Map 55. Mill Valley Vulnerable Buildings




Vulnerable Assets

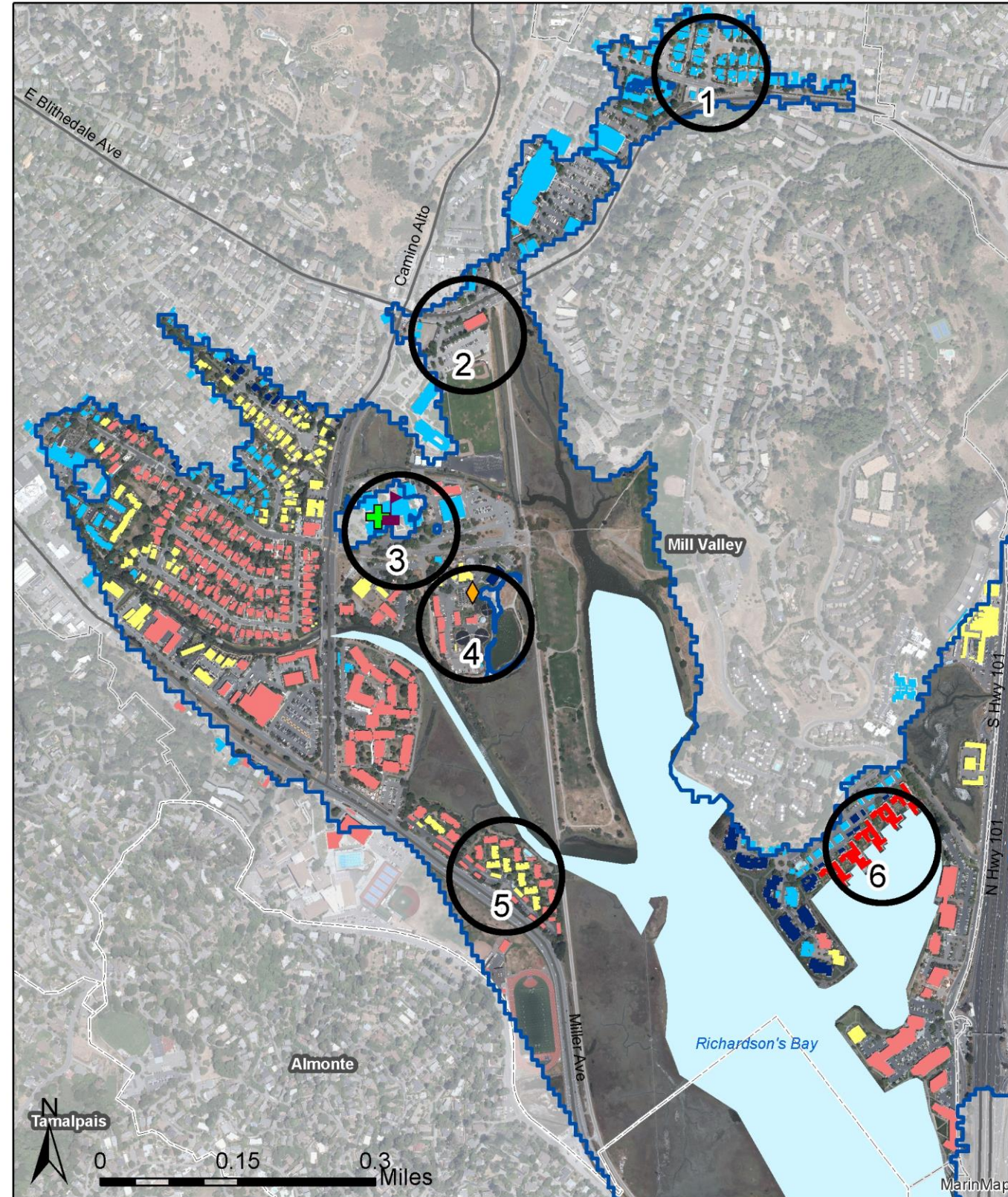
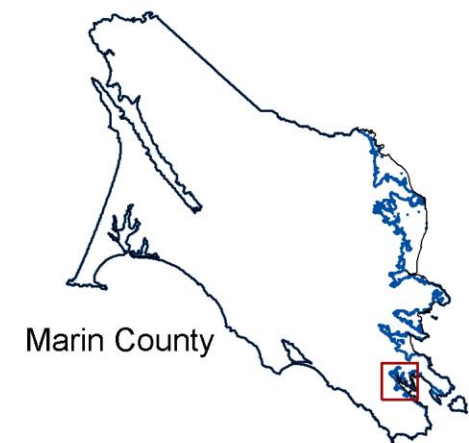
-  Emergency Shelter
-  District Office
-  School

Vulnerable Buildings

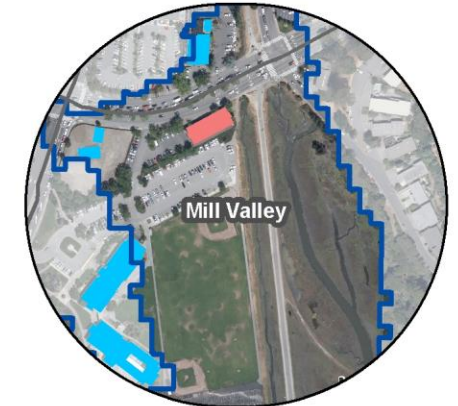
-  Scen. 1: 10" Sea Level Rise (SLR)
-  Scen. 2: 10" SLR+Storm Surge
-  Scen. 3: 20" Sea Level Rise
-  Scen. 4: 20"SLR+Storm Surge
-  Scen 5: 60" Sea Level Rise
-  Scen. 6: 60"SLR+Storm Surge

Location Indicators

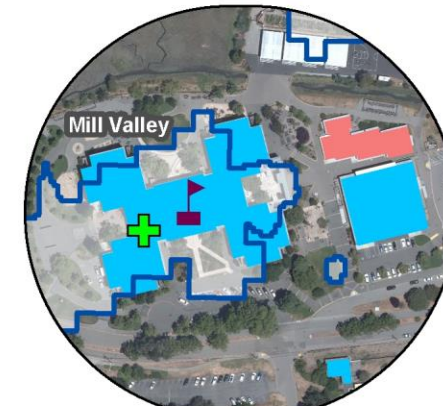
-  Unincorporated
-  Municipality
-  Road
-  Bay
-  Inland Extent: Sea Level @ 60"+100-year Storm



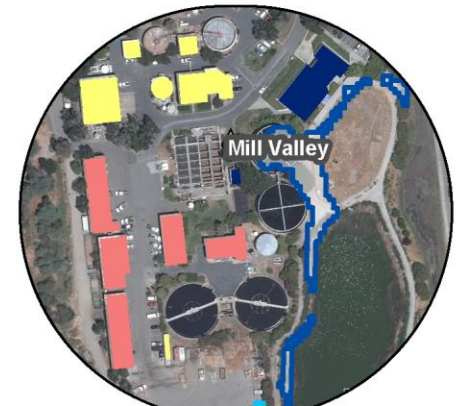
1: E. Blithedale Avenue



2: E. Blithedale Ave. @ Bike Path



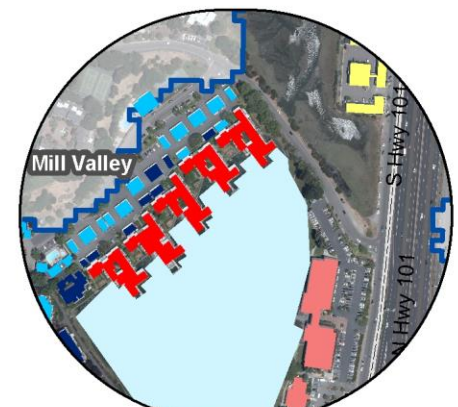
3: Mill Valley Middle School



4: SASM Wastewater Treatment Plant



5: Mill Creek Meadows

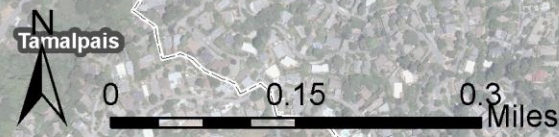


6: Shelter Bay

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.



Date: 1/15/2017



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Mill Valley-Sausalito Path. Credit: J. Poskazner

Transportation

Miller Avenue is the only southwestern access road to Mill Valley, and is vulnerable in the near-term. In fact, this area already experiences seasonal flooding that extends into Tamalpais High School athletic fields, especially combined with rain events. Portions of the road are on a narrow strip of land between businesses, the hillside, and Richardson’s Bay, offering little room for inland relocation. Moreover, Miller Avenue is connected to the freeway system through Shoreline Highway in the frequently flooded Manzanita area in Almonte. Miller Avenue serves high school students, commuters, service providers, and suppliers that would face difficulties making it through the narrow corridor when flooded.

The Mill Valley/Sausalito Path for non-vehicular traffic faces a similar fate, though likely sooner due to its marshland location. In addition, the Redwood Highway Frontage Road along U.S Highway 101 southbound is vulnerable in the near-term. In the long-term, Camino Alto, between Miller and Blithedale Avenues, could be vulnerable to tidal flooding, as could several smaller neighborhood streets to the north, though with the 100-year storm surge, this area could be impacted temporarily in the medium-term. Blithedale Avenue could expect minor high tide flooding by scenario 5, with more severe flooding with a 100-year storm surge.

Transit routes 4, 8, 17, and 22 could expect tidal and/or temporary storm surge flooding and result in a reduction in service during average high tides at the following Golden Gate Transit bus stops:

- Miller Ave. and Reed St.,
- E Blithedale Ave. and Lomita Dr.,
- E Blithedale Ave. and Roque Moraes Dr.,
- Miller Ave. and Camino Alto, and
- Miller Ave. and Almonte Blvd.

The maps on the following pages illustrate vulnerable transportation features. The areas in the call out circles enable the reader to see areas that are difficult to see on the large scale map. The circles do not indicate that these areas are more vulnerable than others along the shoreline.

Table 64. Mill Valley Vulnerable Transportation Routes

Near-term		Medium-term		Long-term	
Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
None	1.5 miles	None	2 miles	3 miles	6 miles
	Redwood Hwy ^L Camino Alto ^L Amicita Ave ^L Gomez Way ^P Miller Ave ^L Nelson Ave ^L Oxford Ave ^L Park Ter ^P Plymouth Ave ^L Frontage Rd ^L Surrey Ave ^L Sycamore Ave ^L Tamalpais Commons Ln ^P Valley Cir ^L		Roads in scenario 2 Hamilton Dr ^L Ryan Ave ^L	Roads in scenarios 2 and 4 E Blithedale Ave ^L Plymouth Cir ^L Roque Moraes Dr ^L	Roads in scenarios 2, 4, and 5 Ashford Ave ^L La Goma St ^L Leyton Ct ^L Lomita Dr ^L Matilda Ave ^L Meadow Rd ^L Nelson Ave ^L Shelter Bay Ave ^L Somerset Ln ^L

M = Marin County; C = State of California; L = Local Municipality; P = Private. Source: MarinMap, CoSMoS

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Map 56. Mill Valley Vulnerable Transportation Assets

Vulnerable Assets

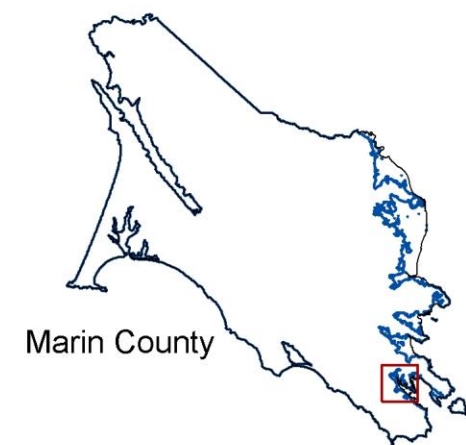
- Bike path
- Bay Trail
- Trail
- GGT Bus Stop

Vulnerable Roads

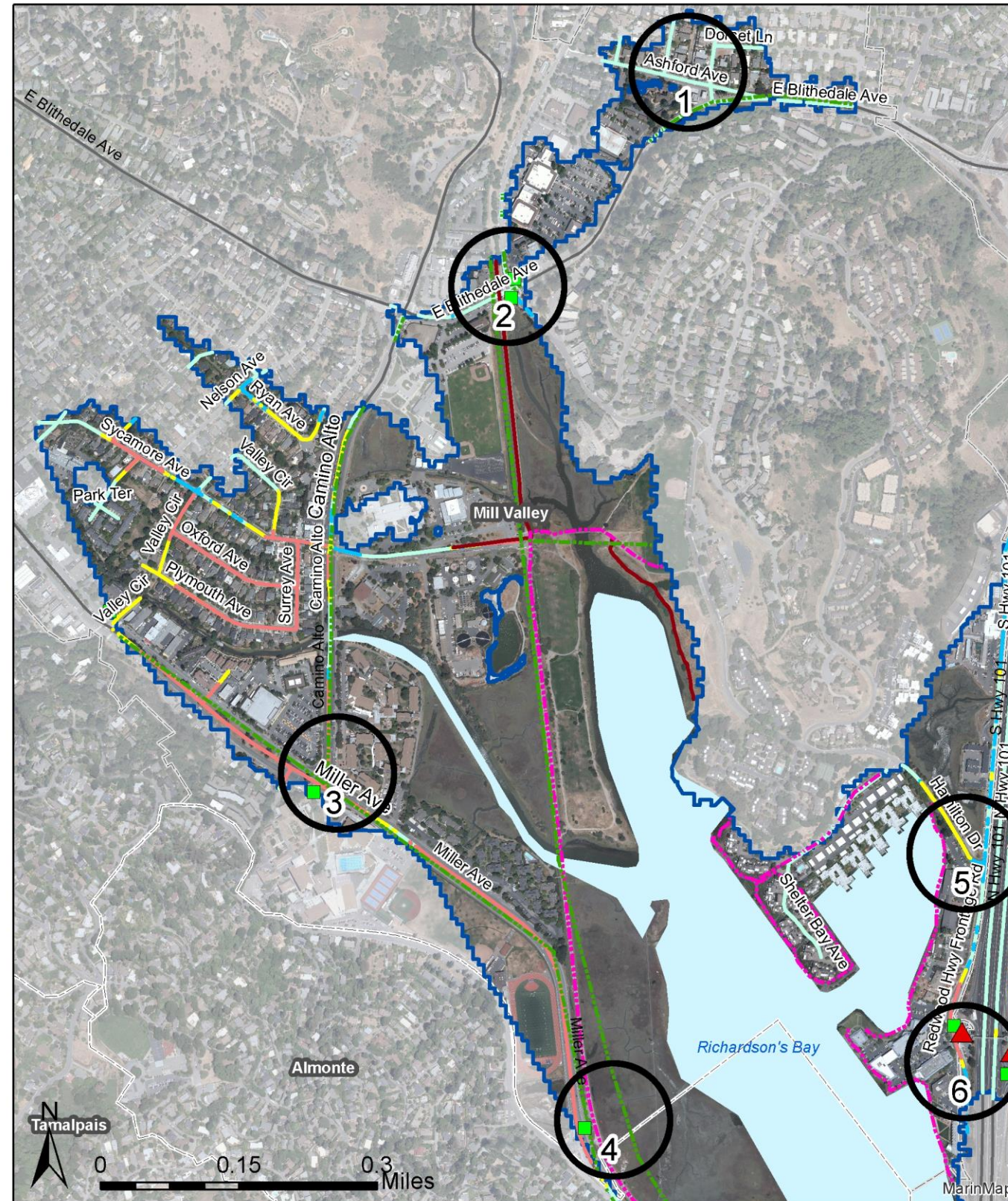
- @10" Sea Level Rise
- @10"+ Storm Surge
- @20" Sea Level Rise
- @20"+ Storm Surge
- @60" Sea Level Rise
- @60"+ Storm Surge

Location Indicators

- Unincorporated
- Municipality
- Road
- Bay
- Inland Extent: Sea Level @ 60"+100-year Storm



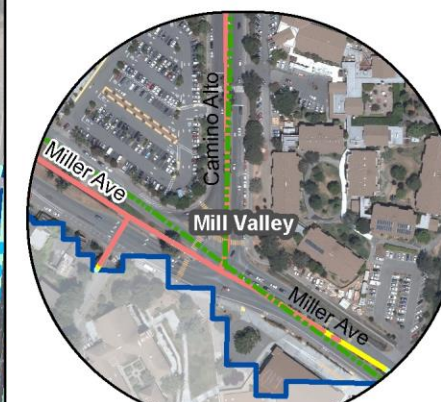
Date: 1/15/2017



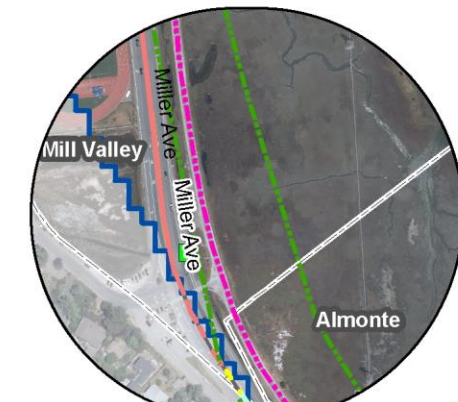
1: E. Blithedale Avenue



2: E. Blithedale at Bike Path



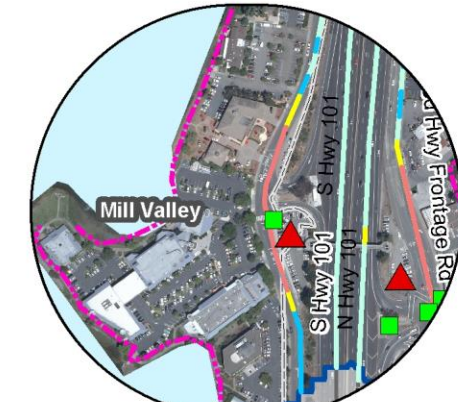
3: Camino Alto @ Miller Avenue



4: Miller Avenue



5: Hamilton Drive/Hwy 101



6: Redwood Highway Frontage Road @ Hwy 101

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.

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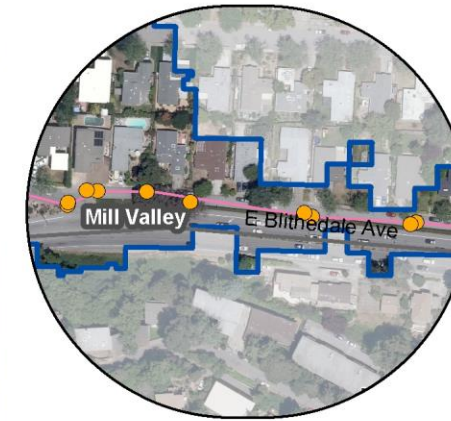
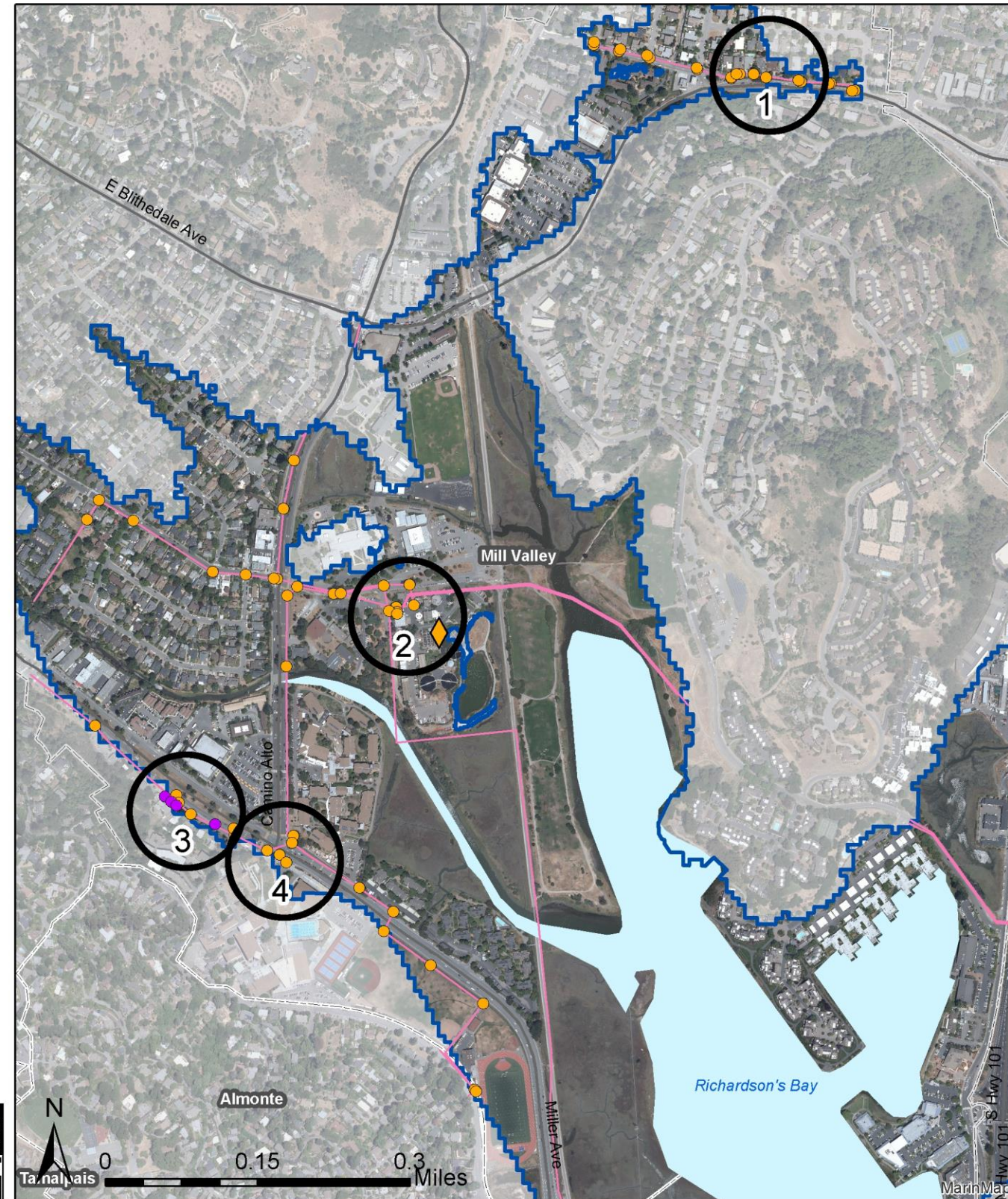
Map 57. Mill Valley Vulnerable Sanitary Sewer Assets

Vulnerable Assets

- Residential Lateral
- Manhole
- Pump Station
- Pipe
- ◆ Treatment Plant

Location Indicators

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



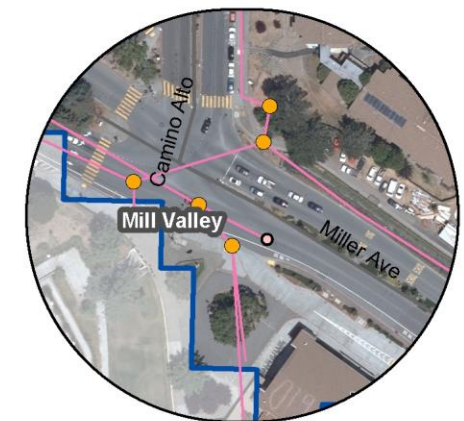
1: E. Blithedale Ave.



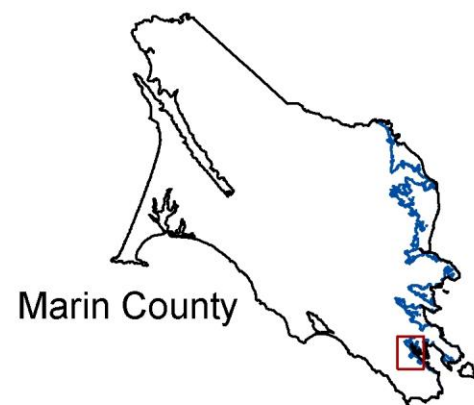
2: SASM



3: Miller Ave.



4: Miller Ave. @ Camino Alto



Date: 2/9/2017



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Map 58. Mill Valley Vulnerable Gas & Electric Assets

Vulnerable Assets

⊕ Solar Array

PG&E Assets

— Electric Transmission Line

— Natural Gas Pipeline

◆ Substation

▲ Transmission Tower

▭ PG&E Property

▭ PG&E Buildings

Location Indicators

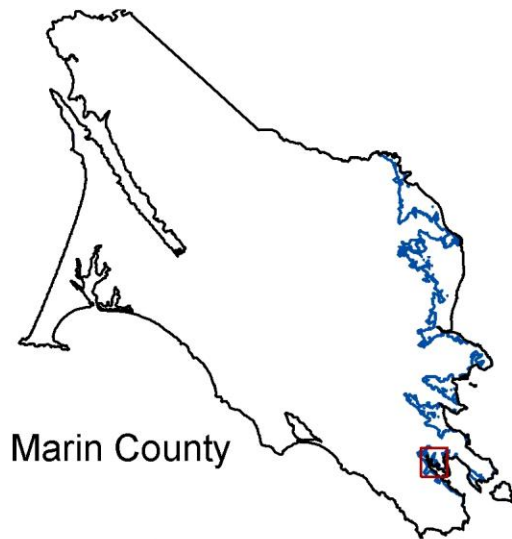
▭ Unincorporated

▭ Municipality

— Road

▭ Bay

⋈ Inland Extent: Sea Level @ 60"+100-year Storm



Date: 1/29/2017



MILL VALLEY

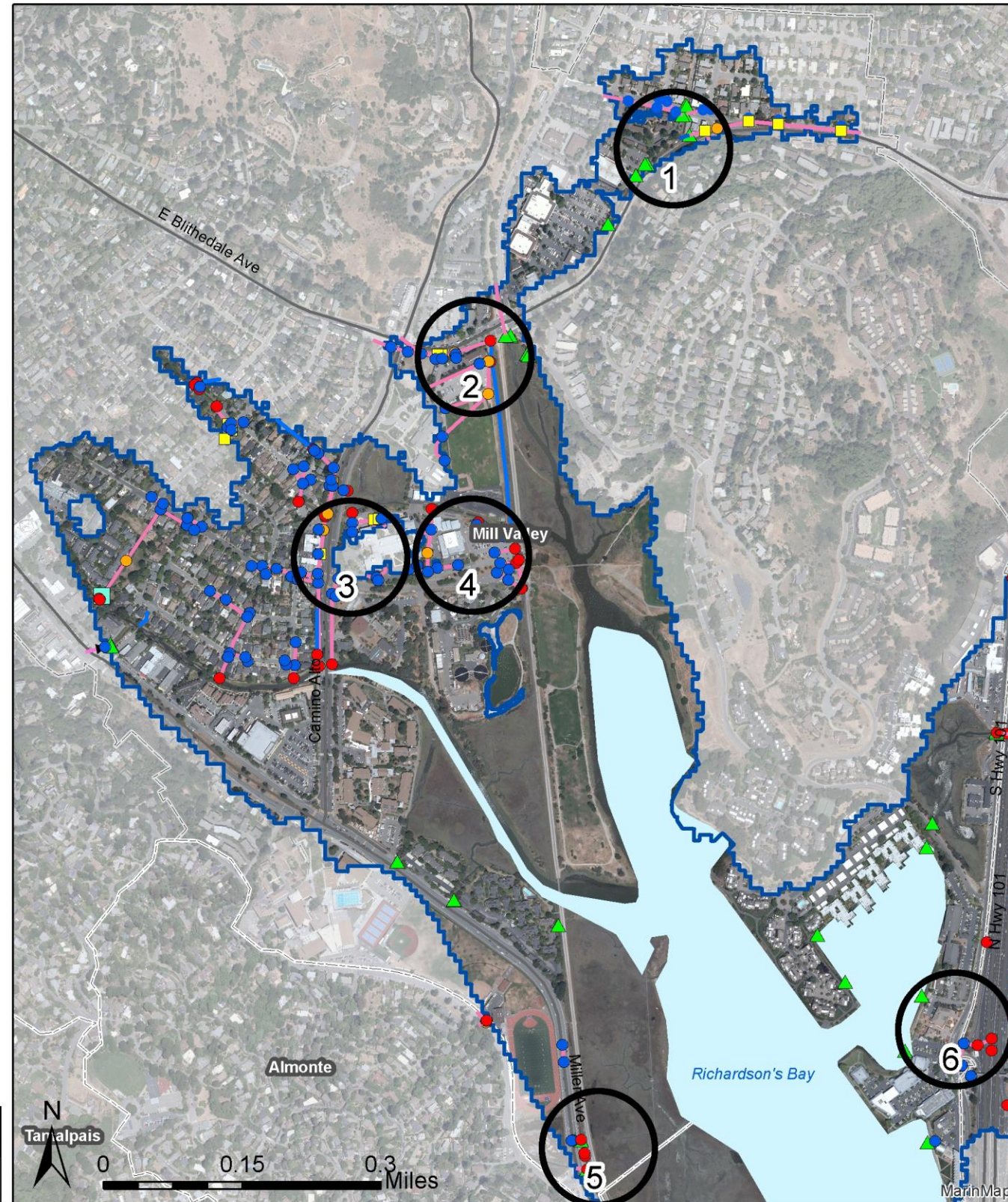
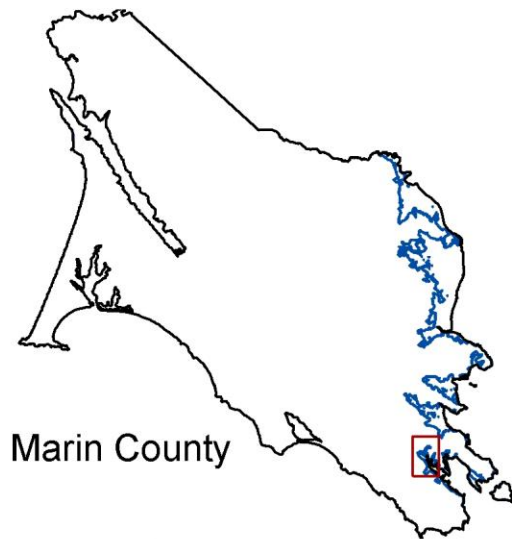
Map 59. Mill Valley Vulnerable Stormwater Assets

Vulnerable Assets

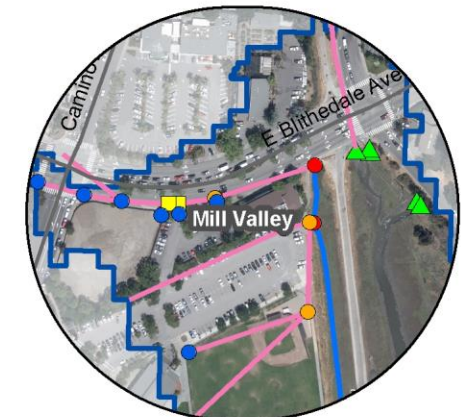
- Catch Basin
- Manhole
- Structures
- Pipe Inlet/Outlet
- ▲ Culvert
- Channel
- Stormwater Pipe

Location Indicators

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



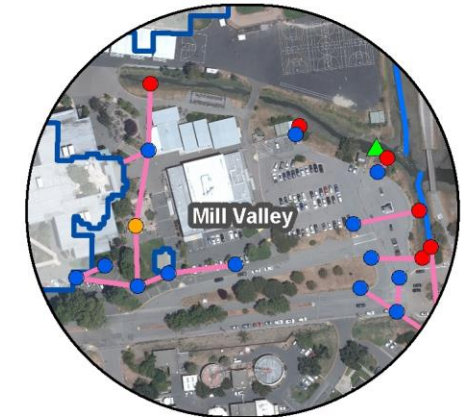
1: E. Blithedale Avenue



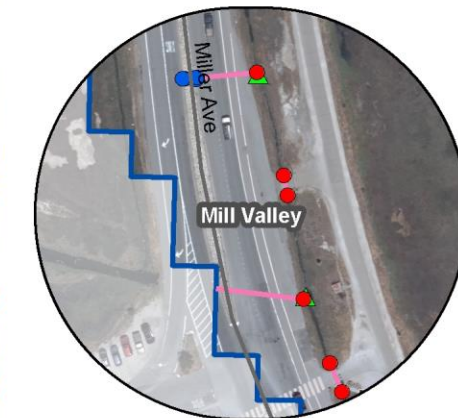
2: E. Blithedale Avenue @ Camino Alto



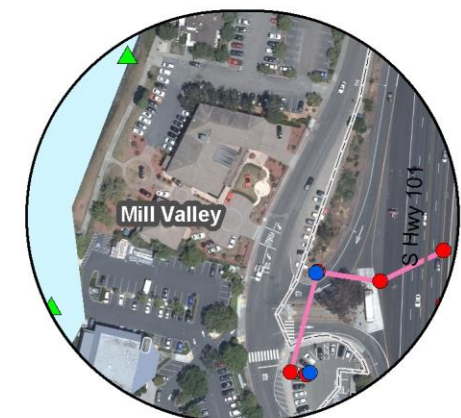
3: Camino Alto @ Sycamore Ave.



4: Sycamore Ave. @ Mill Valley/Sausalito Bike Path



5: Miller Avenue



6: Redwood Highway Frontage Rd.

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Date: 1/28/2017



Utilities

The key vulnerable utility asset is the SASM treatment plant. This plant serves tens of thousands of people at their homes, business, and places of study, work, and worship. If the treatment plant is compromised, even dry hillside homes could suffer breakdowns in the system if no action is taken to protect or relocate the plant. For more information on SASM vulnerabilities see the Utilities Profile.

Other concerns include those common to other communities, such as:

- Underground pipes face compounding pressure forces from water and the road,
- Road erosion and collapse with underlain pipes,
- Saltwater inflow and infiltration causing inefficiencies in wastewater treatment,
- Continuously subsiding soils or fill, and
- Escalating activity, capacity demands, energy consumption, and wear and tear on pump stations in stormwater and wastewater systems,
- Aging individual site connections for water, sewer, and electrical, and
- Flood waters interrupting access for employees to reach work sites.

The maps on the previous pages illustrate vulnerable utility features. The areas in the call out circles enable the reader to see areas that are difficult to see on the large scale map. The circles do not indicate that these areas are more vulnerable than others along the shoreline.

Natural Resources

Bothin Marsh and its smaller connected marshes, such as Sutton Marsh, and Shelter Bay habitats could be vulnerable to sea level rise in the near-term. The habitat serves for bird, rodent, insect, and water loving species. Factors that could impact the habitat are increased salinity, higher water levels, increased erosion, and road and building barriers to inland migration.

The longfin smelt and Ridgway's Rail are the listed species recorded in Bothin Marsh. The smelt is listed as threatened on the California list and a candidate on the federal list. The largest longfin smelt population occurs in the San Francisco Estuary and Sacramento-San Joaquin Delta. This species occupies bay waters throughout summer

and moves into lower reaches of rivers in fall to spawn. Other important fish species sensitive to changes in environmental conditions that could occur in Richardson's Bay are:

- Chinook salmon
- Delta smelt:
- Green sturgeon
- Pacific herring, and
- Steelhead.

The Ridgway's rail is one of the largest rails in North America. The Ridgway's rail is very secretive and occurs primarily in salt and brackish marshes with pickleweed and cordgrass. Rails were detected in Bothin Marsh Preserve, Mill Valley.¹⁷⁵ The Western snowy plover is a small shorebird that nests on and near the shores of the San Francisco Bay and may forage in Richardson's Bay. Other unique and valuable bird species common in the area are:

- California brown pelican,
- California least tern,
- Double-crested cormorant,
- San Francisco common yellowthroat, and
- San Pablo (Samuels) song sparrow.

Insects, such as the Monarch butterfly, could also be vulnerable to impacts to their habitat. Finally, numerous special status plants with habitats that are expected to be vulnerable to sea level rise are:

- Franciscan thistle,
- Hairless popcornflower,
- Marin western flax,
- Oregon polemonium,
- Point Reyes salty bird's-beak,
- Tiburon buckwheat,
- Tiburon paintbrush, and
- White-rayed pentachaeta.¹⁷⁶

To learn more about these species, see the Natural Resources Profile.

¹⁷⁵ Wood, J., L. Salas, N. Nur, M. Elrod, J. McBroom. 2013. Distribution and population trends for the Endangered California Clapper Rail. State of the Estuary Conference, 26 October 2013, Oakland, CA.

¹⁷⁶ Prunuske Chatham, Inc. March 2016. Draft Biological Resources Assessment: Dunphy Park Improvement Project Sausalito, Marin County.

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Recreation

The vulnerable Mill Valley marshes are a popular recreational destination for locals and visitors alike. This loss could have negative effects on the sense of place and local economy. The Mill Valley-Sausalito pathway through the marshes could be flooded out more often and degraded more quickly. Strong enough storm waters could even damage the wooden pathways structural integrity. Capacity reductions would impact bikers, skaters, runners, and walkers of all ages.

The Mill Valley Recreation Center could expect impacts to the ball fields and some ancillary buildings from long-term sea level rise. A 100-year storm could flood out the majority of the property and access could be compromised. The primary buildings are elevated beyond MHHW; however, by the end of the century, they could be impacted by the highest high tides, especially during and immediately following a rain event.

In addition, the guest serving Acqua Hotel on Shelter Bay and the Travel Lodge may be vulnerable in the long-term, and nearby restaurants may be vulnerable in the medium-term.

Emergency Services

The primary concern for Mill Valley emergency services is vehicular access to and through flooded areas in emergencies. Delayed service could lead to worse injury or worse, loss of life.

Cultural Resources

Mill Valley's inventoried historic assets are located outside of the exposure zones.

Example assets are presented [Table 65](#) and described in the subsequent sections. A 100-year storm surge would add an additional 1 to 3 feet of water to these properties. Note also, above average high tides could impact more properties than accounted for in this analysis. The maps on the following pages illustrate vulnerable natural resource, recreation, emergency and historic features. The areas in the call out circles enable the reader the see areas that are difficult to see on the large scale map. The circles do not indicate that these areas are more vulnerable than others along the shoreline.

Table 65. Example Mill Valley Assets Vulnerable to Sea Level Rise by Onset and Flood Depth at MHHW





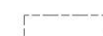




Asset	Scenarios		
	Near-term	Medium-term	Long-term
	1	3	5
Hwy 101 commercial	0-4"	9"-1'3"	2'-3'2"
Mill Valley/Sausalito Pathway		0-8'5"	1"-11'8"
Bay Trail		0-8'	3"-12'5"
Mill Valley Shopping Center		1'2"-7'	6"-2'6"
Sycamore neighborhood		2"-2'2"	4"-4'7"
Miller Avenue		0-1'7"	2'-4'8"
SASM treatment plant		6"-11"	1'2"-2'5"
Shelter Bay neighborhood		2"-9"	6"-1'10"
The Redwoods		7"	1'7"
Sycamore Ave			0-4'7"
Camino Alto (between Miller and Blithedale Avenues)			2"-3'6"
Mill Valley Middle School temp buildings			1'2"
E. Blithedale Avenue			1"
Tamalpais High fields	No data		
Bothin Marsh	Floods at existing high tides		
Arroyo Corte Madera Del Presidio	Water resource		

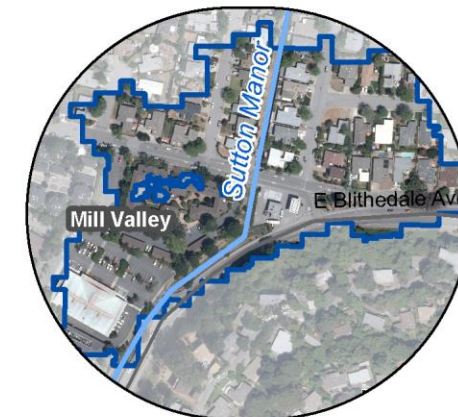
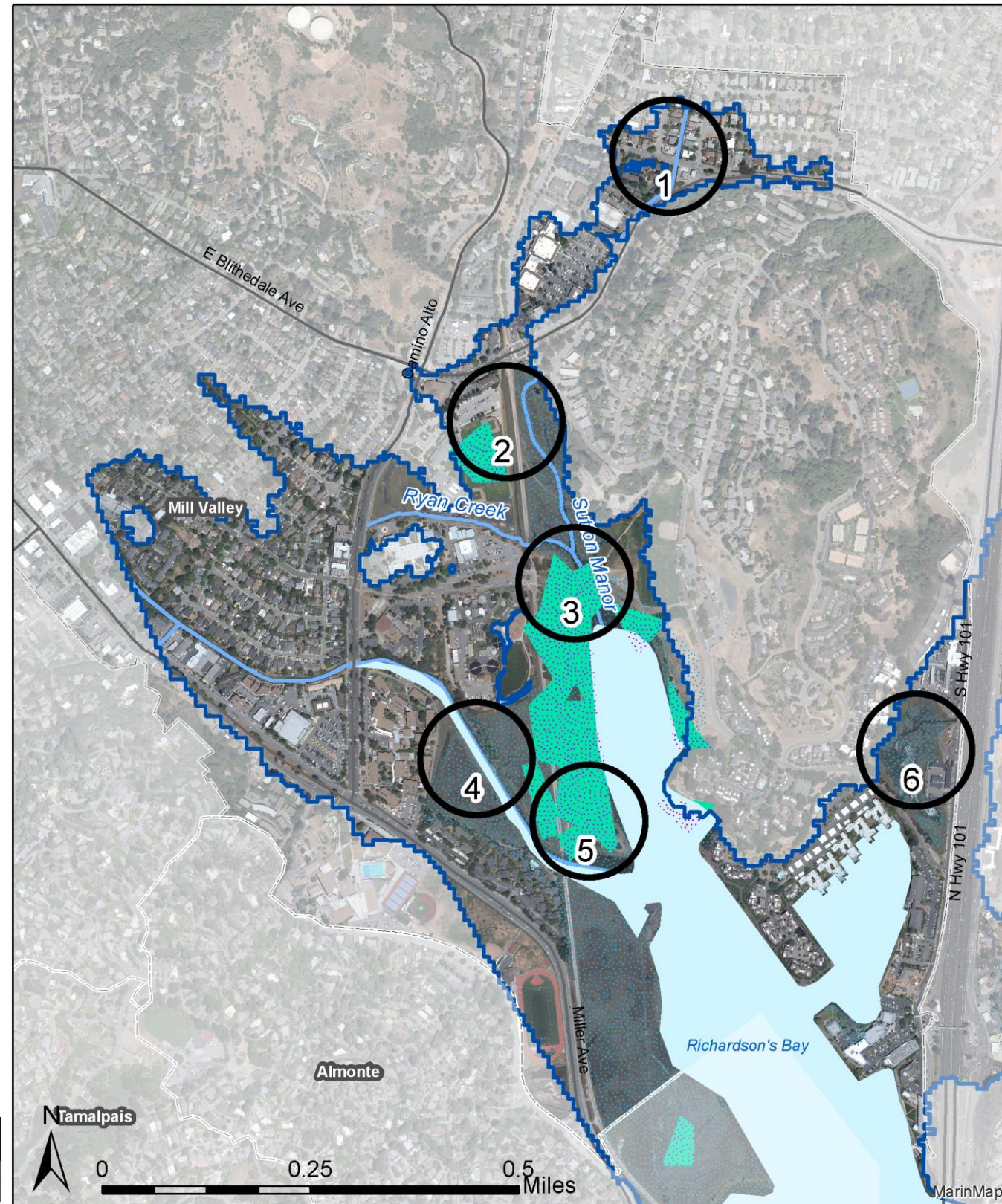
Source: MarinMap, CoSMoS

MILL VALLEY

Map 60. Mill Valley Vulnerable Natural Resource Assets

Vulnerable Assets

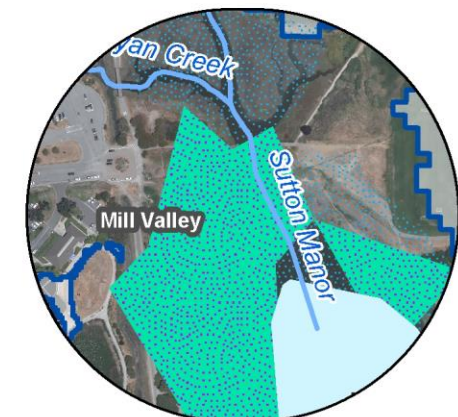
-  Streams
 -  Marsh
 -  Estuary
 -  Wetland
- ## Location Indicators
-  Unincorporated
 -  Municipality
 -  Road
 -  Bay
 -  Inland Extent: Sea Level @ 60"+100-year Storm



1: Sutton Manor Creek



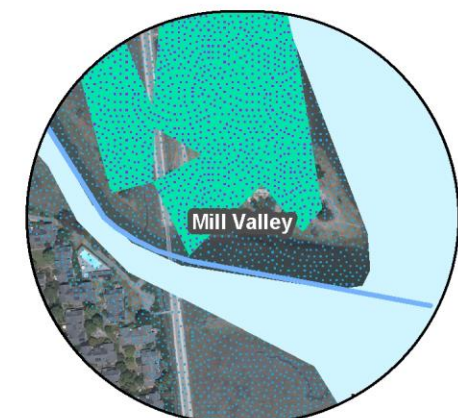
2: Sutton Marsh



3: Bayfront & Hauke Parks



4: Arroyo Corte Madera del Presidio

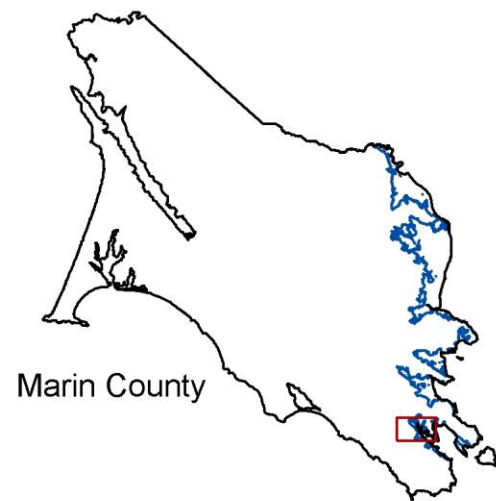


5: Bayfront Park



6: Hamilton Drive

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.



Date: 1/24/2017



MILL VALLEY

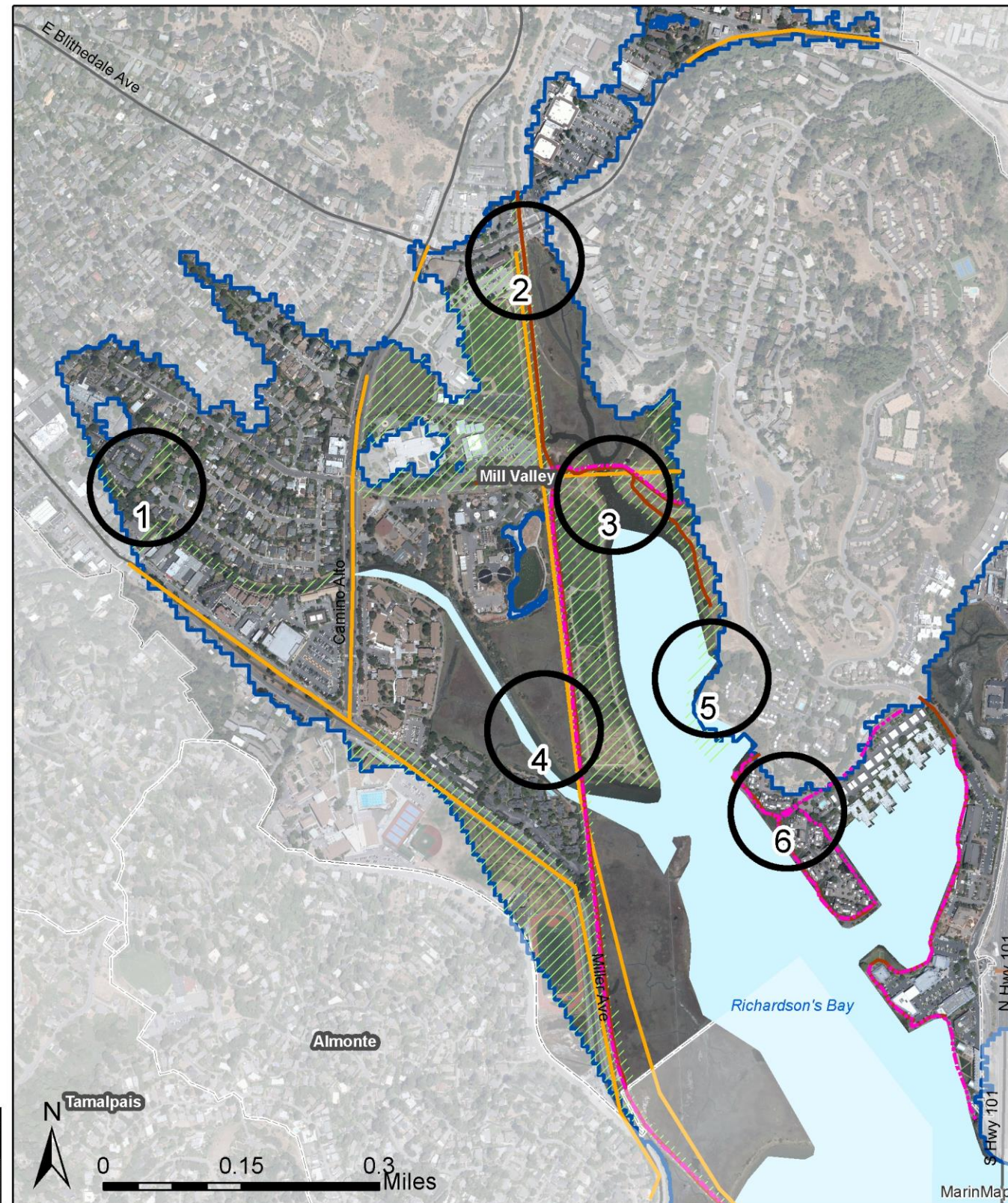
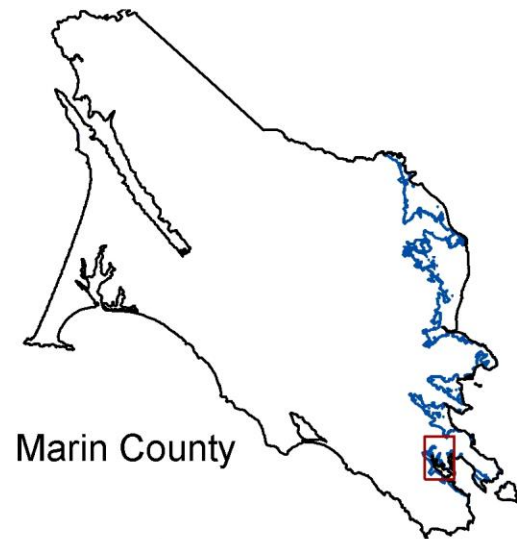
Map 61. Mill Valley Vulnerable Recreation Assets

Vulnerable Assets

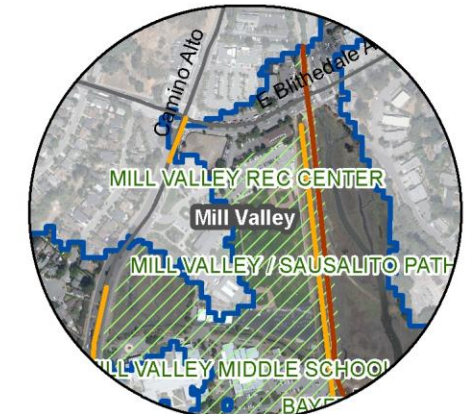
-  Bay Trail
-  Trail
-  Bikeway
-  Park

Location Indicators

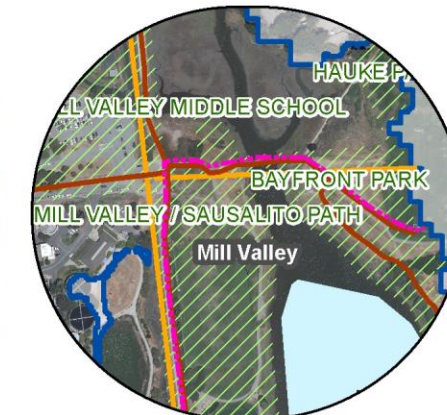
-  Unincorporated
-  Municipality
-  Road
-  Bay
-  Inland Extent: Sea Level @ 60"+100-year Storm



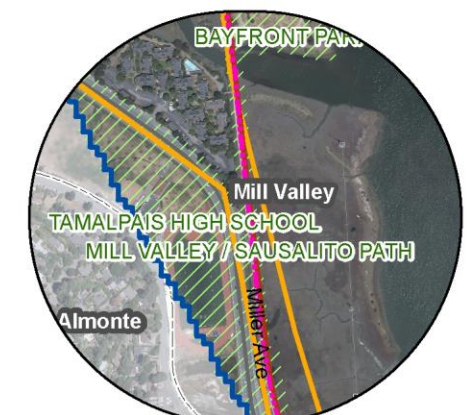
1: Sycamore Park



2: Mill Valley Recreation Center



3: Bayfront & Huke Parks



4: Tamalpais High School



5: Shelter Bay



6: Commercial on Redwood Hwy. Frontage Rd.

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Date: 1/26/2017




MILL VALLEY

Map 62. Mill Valley Vulnerable Emergency Services

Vulnerable Assets

 Emergency Shelter

Vulnerable Arterials & Highways

 @ Scen. 1: 10" Sea Level Rise (SLR)

 @ Scen. 2: 10"SLR+Storm Surge

 @ Scen. 3: 20"SLR

 @ Scen. 4: 20"SLR+Storm Surge

 @ Scen. 5: 60"SLR

 @ Scen. 6: 60"SLR+Storm Surge


Location Indicators

 Unincorporated

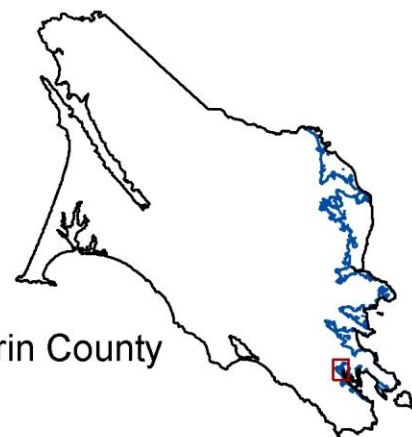
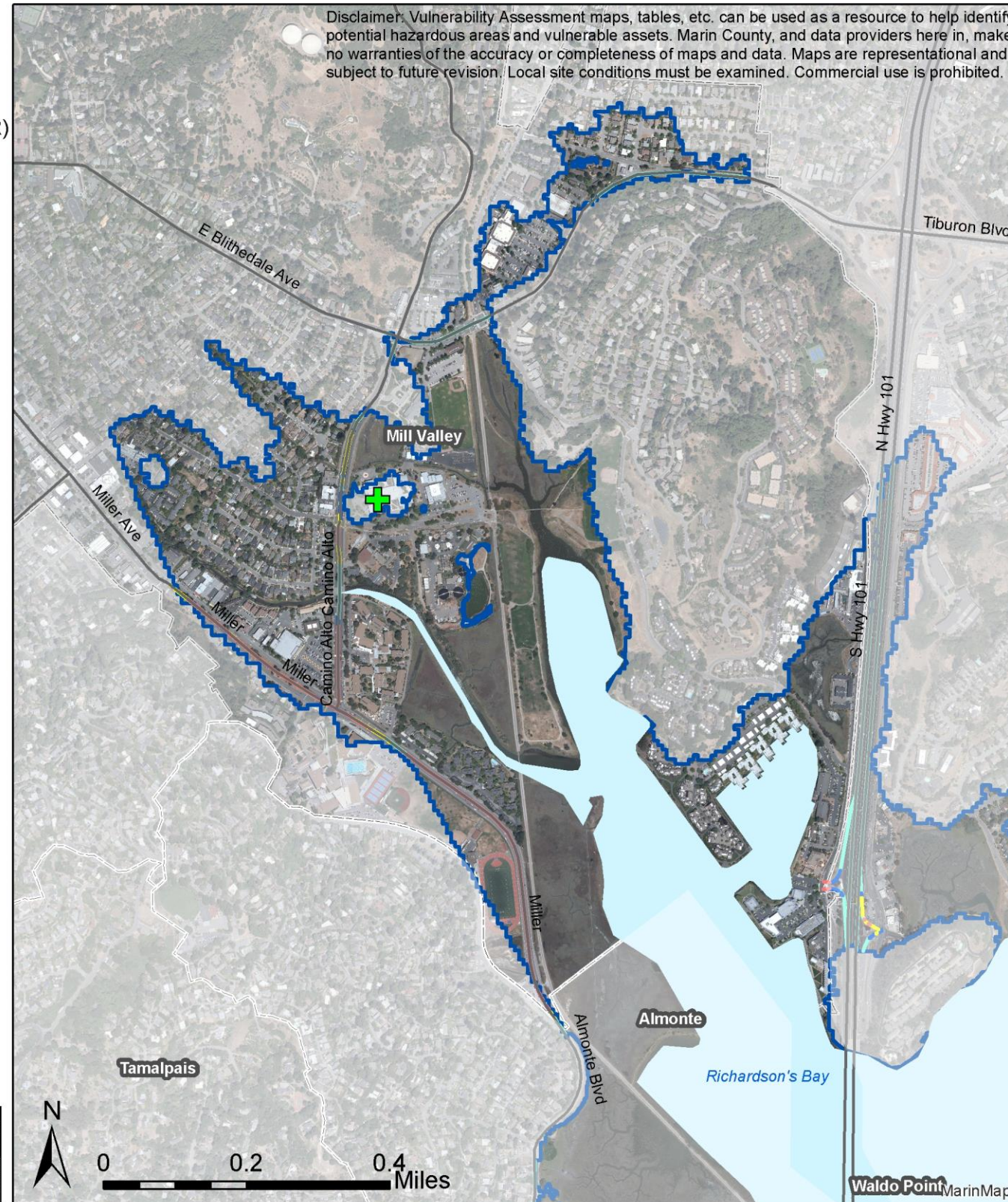
 Municipality

 Road

 Bay

 Inland Extent: Sea Level
@ 60"+100-year Storm

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.



Marin County



Date: 2/14/2017



0 0.2 0.4 Miles

Waldo Point MarinMap