

Exhibit 1: Drainage Study and Sea Level Rise, pages 1-8

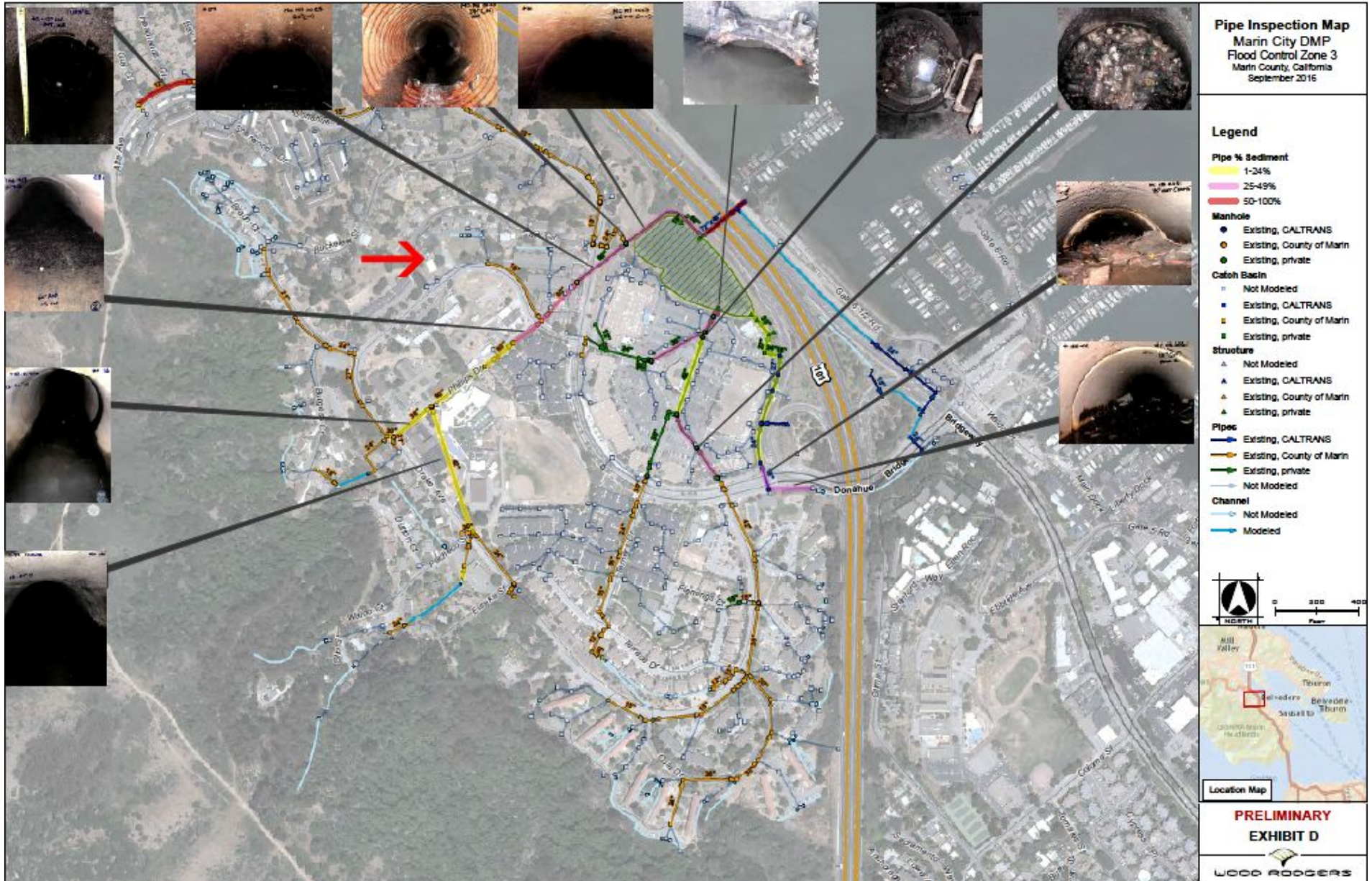
Exhibit 2: Fire Hazard Severity Zones, page 9

Attachments to:
Sierra Club Marin Group Letter
September 17, 2020
Village Baptist Church
Zoning Compliance Report (P2813)
825 Drake Avenue



Figure 3: February 2017 Flooding – looking southeast over detention basin to US 101 offramp

On Dec. 13, 2017, 1.7 inches of rain, coincident with a 7.8 ft high tide stopped southbound traffic at the Marin City interchange. Traffic backed up to Sonoma County and all ingress or egress to Marin City and all Sausalito access via Bridgeway to Sausalito. This incident led to the Marin City Drainage Study, 2017, [Draft, Combined_MarinCityDMP_Report_000.pdf](#)



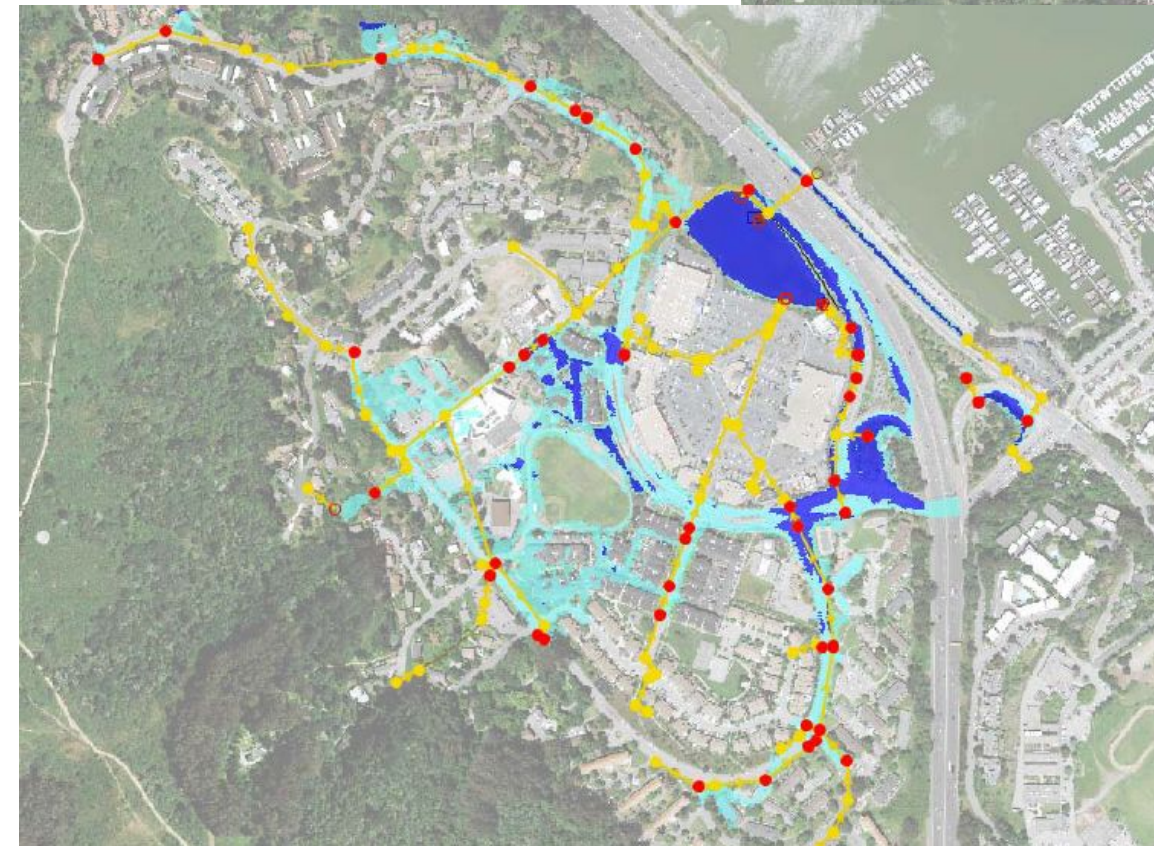
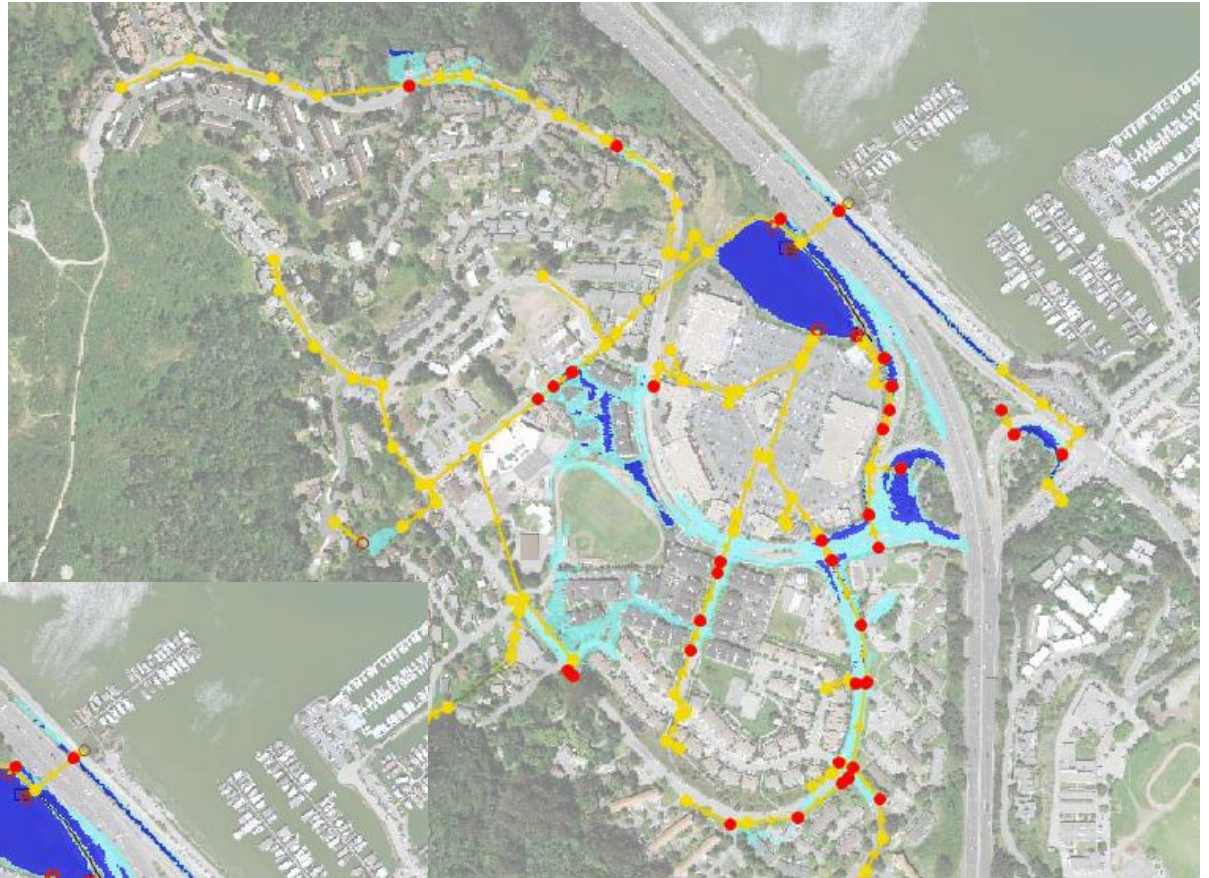
Storm Drain Blockage: Yellow = 1-24%, Light Pink = 25-49%, Dark Pink = 50 – 100%, Dark Red at Pond = leaky slide tide gate, Blue = open above ground V-Ditches carry rocks and silt into pipes. Lighter Blue = localized rainwater flowing into smaller pipes.

6.2 Assessment of Existing (2017) Conditions – Rainfall Only, Peak Tide Level at 6.03 ft., page 51 (photo at right).

Fig 24, 100-YR Rainfall with MHHW Tide (red nodes indicate surcharging), p.51, Draft, Combined_MarinCityDMP_Report_000.pdf

Surcharging means that sewage laden water may spout out of manhole covers.

Buses, delivery and emergency vehicles, cars, bicycles and pedestrians would have to go through standing water.



6.2 Assessment of Existing (2017) Conditions – Rainfall Only, Peak Tide Level at 6.03 ft., page 52 (photo at left).

Figure 25, 25-YR Rainfall with MHHW Tide (red nodes indicate surcharging), p.52, Draft, Combined_MarinCityDMP_Report_000.pdf

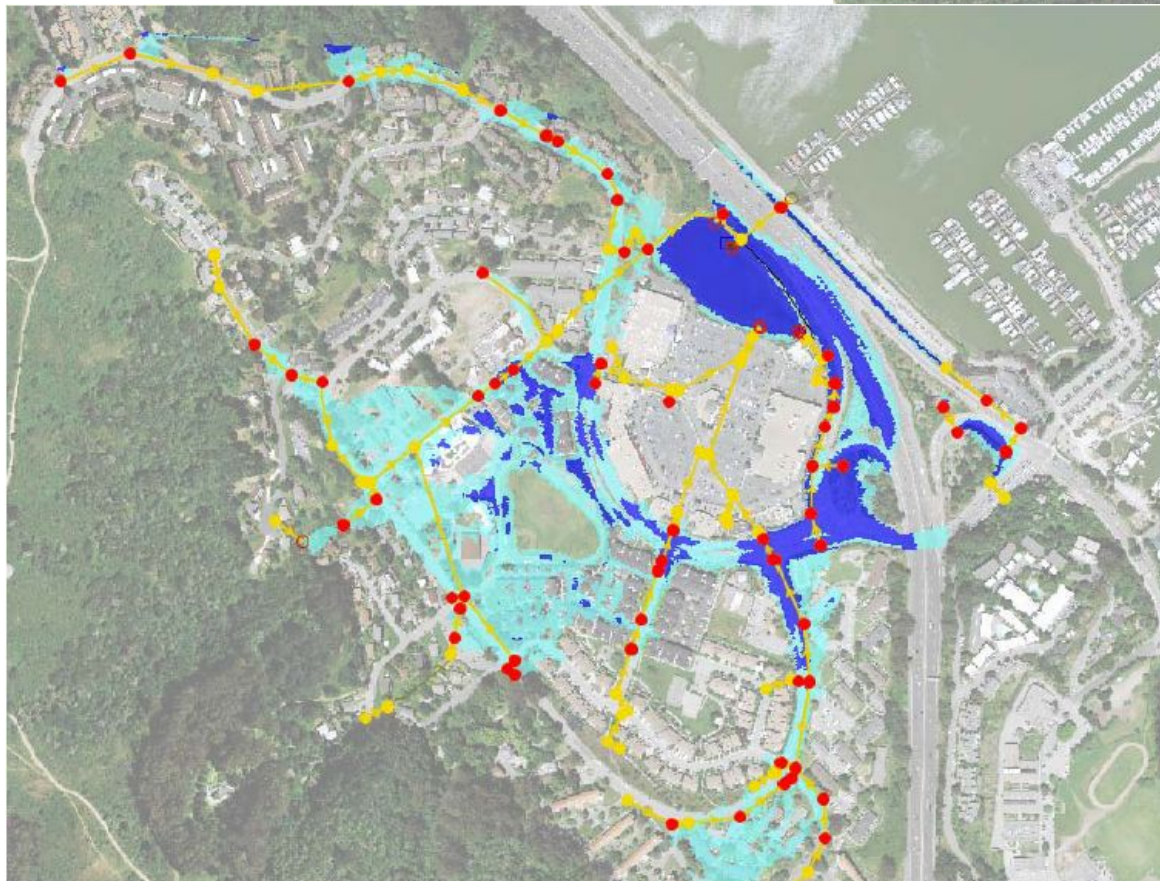
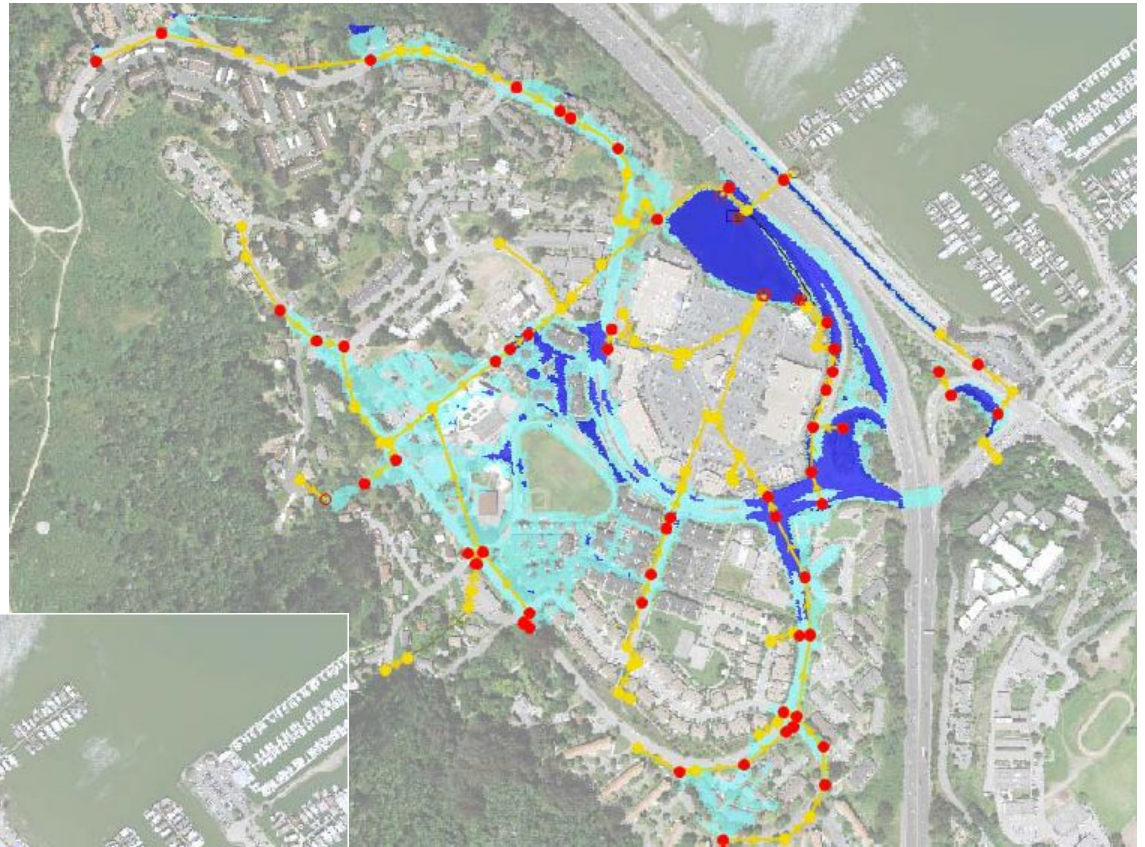
While 825 Drake property is not immediately affected, getting to BMLK, Gateway Shopping Center, Alta Trail to the GGNRA, or out of Marin City impacting traffic dealing with flooded streets that could create a health hazard, especially to walkers.

6.2 Assessment of Existing (2017) Conditions – Rainfall Only, Peak Tide Level at 6.03 ft., page 52 (photo at right)

Fig 26, 50-YR Rainfall with MHHW Tide (red nodes indicate surcharging), p.52, Draft, [Combined_MarinCityDMP_Report_000.pdf](#)

Both these photographs show an increasing progression of Light Blue areas of less than 0.5 ft and Dark Blue areas of more than 0.5 ft. during rain events with a MWWH tide.

As Sea Level rises, these effects will increase.



6.2 Assessment of Existing (2017) Conditions – Rainfall Only, Peak Tide Level at 6.03 ft., page 53 (photo at left).

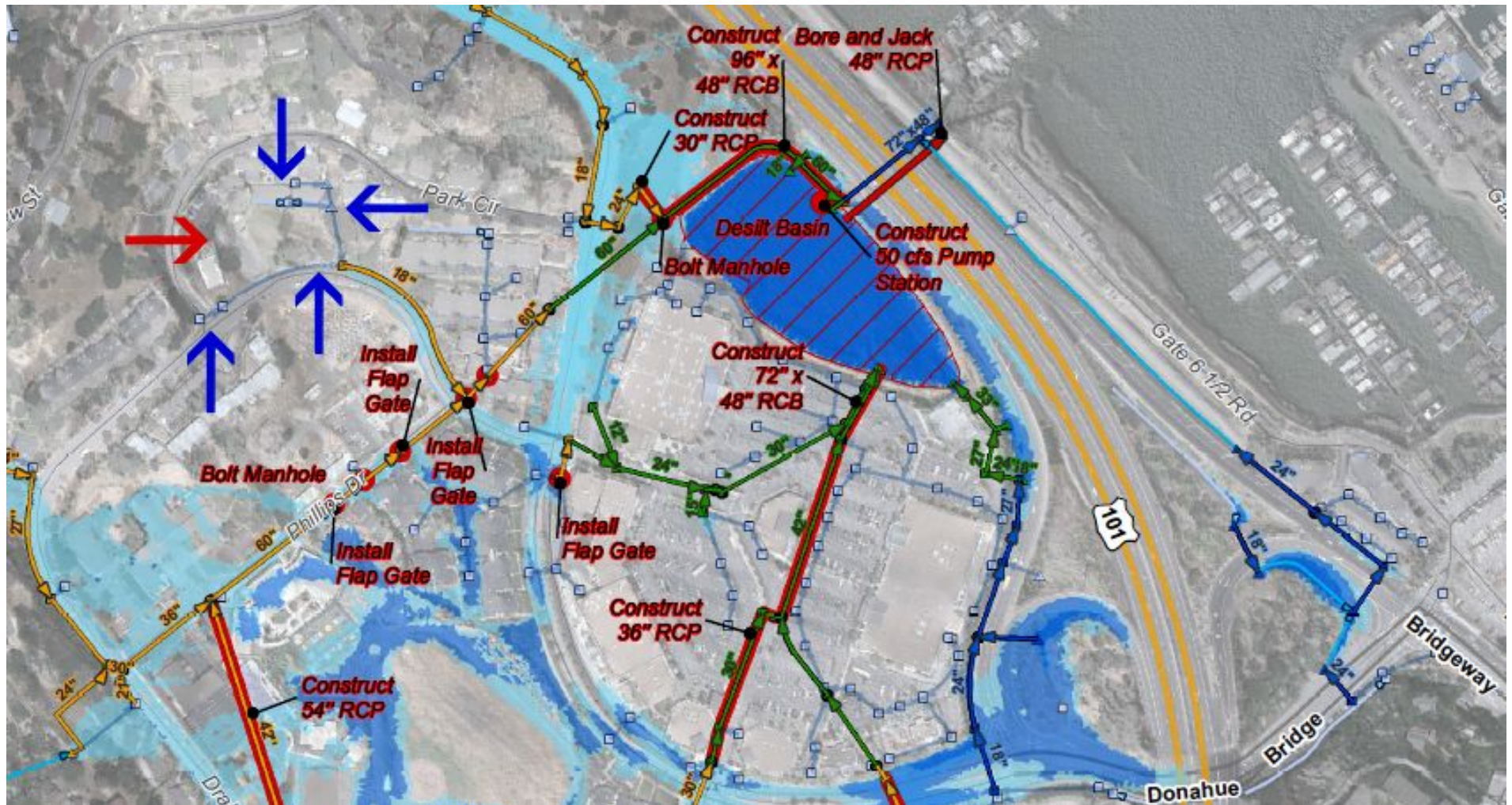
Fig 27, 100-YR Rainfall with MHHW Tide (red nodes indicate surcharging), p.51, Draft, [Combined_MarinCityDMP_Report_000.pdf](#)

A 100 year heavy rainfall, MHHW (6.03-ft) tide will lead to enough flooding to make entering or exiting Marin City difficult or impossible for residents using cars, trucks, buses and even emergency vehicles. Walkers, to or from Sausalito, may have to wade through flood waters possibly laden with sewage.

Marin City Drainage Study, Exhibit H, NH1 “Alternative 100-YR Floodplain” page 102, enlarged and cropped.

Location of the 825 Drake Project (Red Arrow) in relation to its local drainage system serving this portion of Drake Avenue and Park Circle (Blue Arrows) in relationship to how the system is projected to work *if these repairs are completed*.

This enlarged exhibit shows that *even with suggested improvements* by this alternative plan, **major flooding will occur** with a 100-YR rain and a MHHW tide of 6:03 ft. This does not take into account current 7+ feet tides or future Sea Level Rise predictions.



Rising Sea Levels will make rainfall/high tide events like this occur more often during winter months. Higher tides will put more pressure on the Basin (detention pond) and lead to increased flooding of the interchange during both wet and dry months.

Figure 36, page 61 shows how the 825 Drake Avenue (Red Arrow) Development and surrounding community would be affected if no repairs are undertaken at MHHW tide (**6.03 feet**). Again, it does not indicate flooding conditions at **7+ feet** tides.

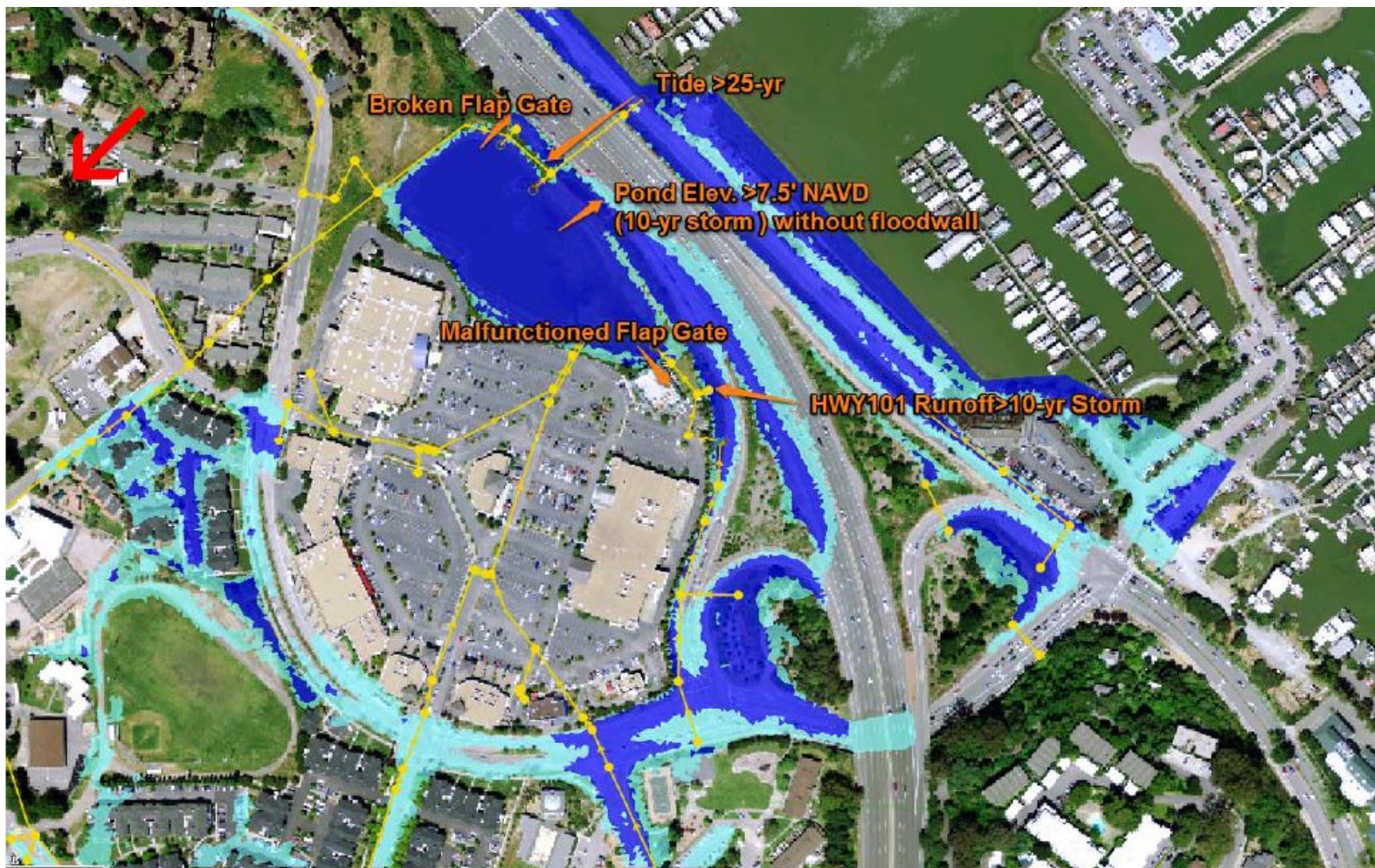


Figure 36 – Detention basin Flood Conditions

This clearly shows that residents at 825 Drake, along with other residents attempting to avoid flooded Donahue will drive along the higher Drake Avenue hoping to access the underpass to exit onto Donahue by private vehicle in the current 10-yr scenario. Unfortunately they would be likely to find themselves blocked by flooding before the Drake/Donahue junction near St. Andrew's Presbyterian Church. It understates flooding conditions at **7+ feet** tides with heavy rain events, which causes greater flooding. There have been no significant repairs completed to either the basin or drainage infrastructure other than building and wrapping the muscle wall near HW 101 with black plastic. Therefore, reading the chart below requires thinking beyond a MHHW (**6.03 feet**) tide.

6.2 Assessment of Existing (2017) Conditions - Rainfall Only

Table 3- Detention Basin Results with Rainfall

Coincident (Combined) Frequency (yrs)	Rainfall (yrs)	Peak Tide (yrs)	Rainfall Depth (in)	Peak Tide Level (ft)	Peak Basin Level (ft)
10	10	MHHW	5.1	6.03	7.73
25	25	MHHW	6.3	6.03	8.08
50	50	MHHW	7.2	6.03	8.31
100	100	MHHW	8.2	6.03	8.59

6.2 Assessment of Existing (2017) Conditions - Tide Only

Table 4 - Detention Basin Results with Tide

Coincident (Combined) Frequency (yrs)	Rainfall (yrs)	Peak Tide (yrs)	Rainfall Depth (in)	Peak Tide Level (ft)	Peak Basin Level (ft)
10	NA	10	0	8.29	8.08
25	NA	25	0	8.78	8.50
50	NA	50	0	9.19	8.83
100	NA	100	0	9.66	9.22

6.4 Existing Conditions Assessment Conclusions, pages 60-61 edited to simplify

Flood Condition 1: *With a significant rainfall event, less than 24 hours at MHHW, the basin will get above elevation 7.5 feet and overtop the berm bordering the northeast fringe of the basin and flood HWY 101 off ramp.*

Flood Condition 2; *In the same rainfall conditions, the basin rise to 7.5 feet will prevent low lying areas from draining to the basin. This rise in the basin will not allow the 13 acres of US 101 and street runoff to drain through the pipe system parallel to the US 101 off ramp, and consequently flood the off ramp and Donahue Street.*

Flood Condition 3: *In high tides, water from the bay will flow back into the detention basin and overtop the berm bordering the northeast fringe of the basin, and flood the US 101 off ram for tides larger than a 2-year tide and above the elevation of 7.5 feet. With an intact Muscle Wall system it will contain tides up to a 25-year event at an elevation of 8.8 feet before leaking out the broken 18' flap gate.*

Flood Condition 4: *High tides larger than the 2-year tide and above elevation 7.5 feet, will create a high detention basin and the flap gate to the east of the Outback Steakhouse will prevent tides from entering the storm drain system parallel to the US 101 off ramp. In the event of malfunction of the flap gate or gate removal for maintenance, the US off ramp and Donahue Street will be flooded.*

The Drainage Study did not take into account current tides exceeding 7 feet or more, Sea Level Rise, nor the cumulative impact of multiple storms during high tide that project sea level rise conditions.

During a 3-day period, January 7 to January 9, 2005, flooding disrupted electricity service along Gate 6 Road and all 3-lanes of the Marin City underpass including the interchange and the Donahue and Drake intersection during 6.9 to 7.2 high tides after several weeks of steady rains and snow melt. On December 3, 2014, traffic backed up to Sonoma County. Those delays triggered the Drainage Study. On February 7, 2017, where all but one lane was blocked because the Shopping Center owners created a Muscle Wall along US 101.

Floodwaters blocking the southbound Marin City exit ramp not only affect Marin City residents, but also everyone who is trying to exit to Sausalito and the Floating Homes Community. If US 101 is completely shut down, no one can drive to Sausalito or San Francisco.

Marin Independent Journal, February 13, 2019, *Marin flooding widespread with more rain coming*
<https://www.marinij.com/2019/02/13/marin-flooding-widespread-with-more-rain-coming/>



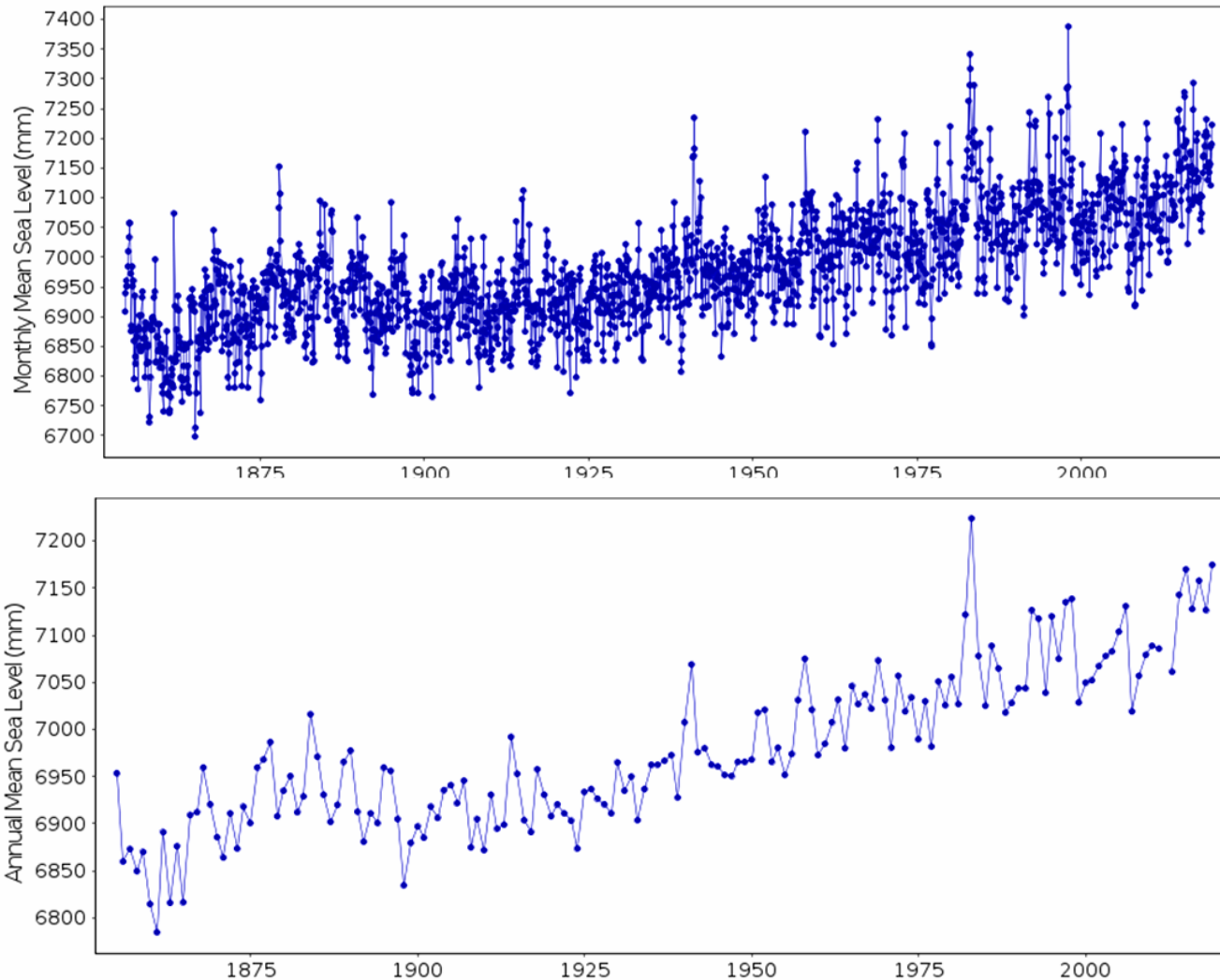
This is hazardous! Events like this will become more commonplace in the future. *Cumulative impacts* of all currently planned new housing projects need to be examined. These will add more vehicles and residents to an already environmentally impacted community. This photo was taken at Drake, Donahue intersection, across from Gateway Shopping Center.

Permanent Service for Mean Sea Level Rise from 1854 to 2019 for Station ID: 10

(Data point collection at Fort Point 1854-1877, Sausalito 1878-1897, Presidio Park 1898 onward)

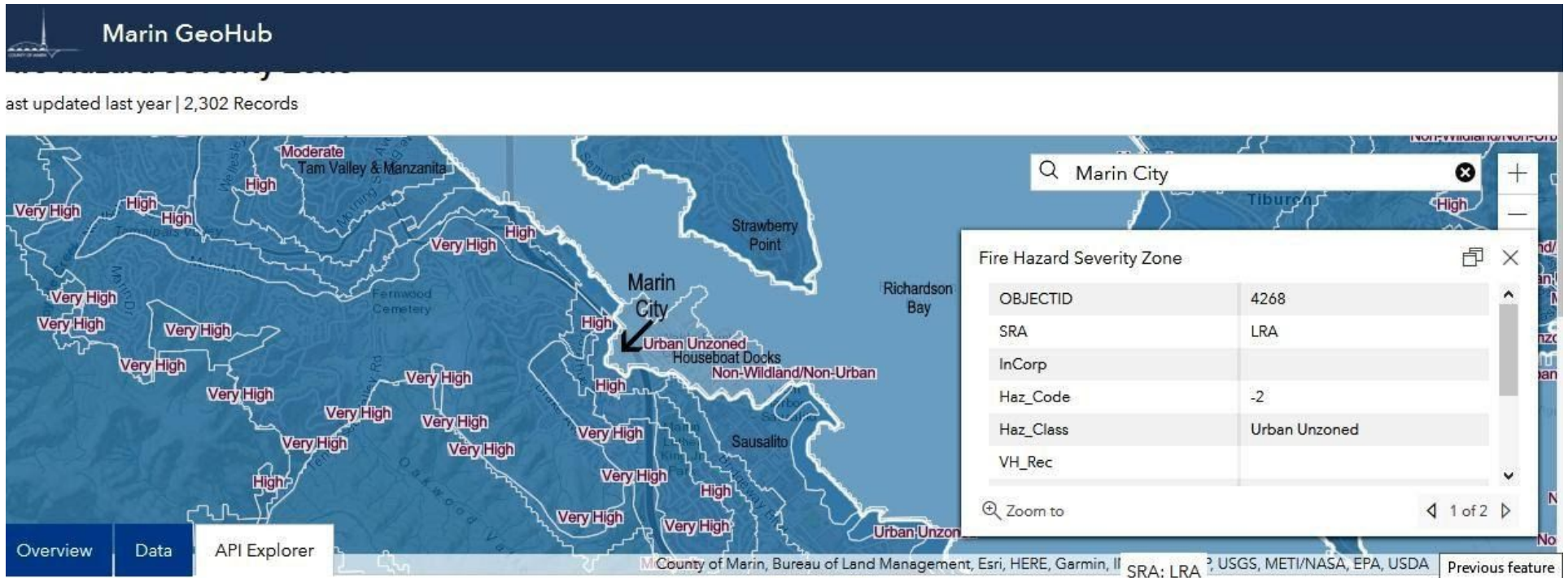
<https://www.psmsl.org/data/obtaining/stations/10.php>

Tide Gauge Data



Sea Level Rise is happening. Climate Change is happening. Climate Scientists are becoming increasingly concerned about the future. Increasing housing density in flood prone areas is nonsensical, especially in a community that has only one ingress/egress, and facing multiple housing projects that should be regarded as one project in order to assess cumulative environmental impacts.

Exhibit 2, Fire Hazard Severity: [Source](#)



The black arrow points to Marin City at what almost looks like an indentation in the coastline. The houseboat community is on the other side of US 101 within the white lines (docks) in Richardson Bay,

While the flats/bowl of Marin City is in a *Moderate* Fire Hazard Zone, the slopes that rise up to the ridgeline and Alta Fire Road immediately surrounding Marin City are within the *High* Fire Hazard Severity Zone or only separated by the Fire Road. GGNRA lands and part of the Donahue Highlands property lying below the ridgeline have extremely dense vegetation of native but also non-native species like highly flammable, invasive broom now covering a huge swath after an unpermitted clearing just below the Alta Fire Road.

As the Alta Fire Road continues further into the GGNRA, it becomes a *Very High* Fire Hazard Severity Zone. Shortly after the Donahue Terminus groups of young people and individual smokers take a break at the “Bench,” tree stumps and various vista points along the fire road, ignorant of the high fire hazard area they are in.

Southern Marin was extremely fortunate that none of the 7,000 plus lightning strikes of the August 2020 Lightning Storm didn't hit these hills and start a fire. With only a single entry/exit for Marin City, if a fire evacuation were necessary, people would panic, traffic backups could occur and residents would be severely at risk.