

**COOPERATIVE IMPLEMENTATION AGREEMENT
AMENDMENT No. 2**

This AMENDMENT No. 2 ENTERED INTO EFFECTIVE ON _____ 2021,
is between the State of California acting by and through its Department of Transportation,
referred to as CALTRANS and the CITY OF RICHMOND, referred to as “AGENCY” and
together referred to as PARTIES.

RECITALS

1. CALTRANS and AGENCY entered into Cooperative Implementation Agreement No. D43CIARI0002 (AGREEMENT) on January 22, 2019, defining the terms, covenants and conditions to implement the Water Capture Facility Project, within the regional area under the jurisdiction of AGENCY to comply with the TMDL referred to herein as PROJECT. Phase I of the PROJECT completed under budget with the total cost of \$676,707.40.
2. On June 24, 2020, CALTRANS and AGENCY amended the AGREEMENT to revise the scope of the PROJECT to implement an additional Water Capture Facility at another location, Bayview Ave, to provide supplemental stormwater runoff treatment benefits under Phase II of the PROJECT.
3. The AGENCY discovered geotechnical engineering constraints at the Bayview Ave project site precluding installation of the Amendment I Water Capture Facility Project location as described in Amendment No. 1 of the AGREEMENT.
4. The purpose of this AMENDMENT No. 2 is to revise the scope of the PROJECT to show a revised Phase II location and schedule as shown in revised ATTACHMENT II-FOR AMENDMENT No. 2.

IT IS MUTUALLY AGREED:

5. The PARTIES hereby replace ATTACHMENT II – Scope of Work, Description, Timeline, Location and Budget by revised attachment - ATTACHMENT II-FOR AMENDMENT No. 2 in its entirety.
6. Any reference to ATTACHMENT II in the AGREEMENT is deemed to be a reference to revised attachment -ATTACHMENT II-FOR AMENDMENT No. 2.
7. All other terms and conditions of said amended AGREEMENT shall remain in full force and effect.

8. AMENDMENT No. 2 with its attachment(s) is hereby deemed to a part of the AGREEMENT.

ATTACHMENTS

The following attachment is incorporated into and is made a part of this AMENDMENT No. 2 by this reference and attachment.

ATTACHMENT II-FOR AMENDMENT No. 2 - Amended Scope of Work, Description, Timeline, Location and Budget

SIGNATURES

Signatories may execute this AGREEMENT Amendment No. 2 through individual signature pages provided that each signature is an original. This AGREEMENT Amendment No. 2 is not fully executed until all original signatures are attached. PARTIES are empowered by California Streets and Highways Code (SHC) sections 114 and 130 to enter into this AGREEMENT Amendment No. 2 and have delegated to the undersigned the authority to execute this AGREEMENT Amendment No. 2 on behalf of the respective agencies and covenant to have followed all the necessary legal requirements to validly execute this AGREEMENT Amendment No. 2.

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

CITY OF RICHMOND

Signature: _____
Print Name: **KENNETH JOHANSSON**
Title: **Acting Stormwater
Coordinator**

Signature: _____
Print Name: **LAURA SNIDEMAN**
Title: **City Manager**

Date: _____

Date: _____

Signature: _____
Print Name: **SHAILA CHOWDHURY**
Title: **Assistant Chief, Division of
Environmental Analysis**

Signature: _____
Print Name: _____
Title: _____

Date: _____

Date: _____

Signature: _____
Print Name: **PHIL STOLARSKI**
Title: **Chief, Division of
Environmental Analysis**

Date: _____

ATTACHMENT II FOR AMENDMENT 2

SECOND AMENDED SCOPE SUMMARY

City of Richmond Water Capture Facility Project on Cutting Boulevard

Introduction

On January 22, 2019, the City of Richmond (the City) and CALTRANS entered a Cooperative Implementation Agreement (the Agreement) to implement a water capture facility project, which consists of the construction of two full-trash capture devices (FTCDs), Contech CDS units, with the cost not to exceed \$3 million. These devices were installed in the City on Regatta Boulevard (Meeker Ditch). The project completed under budget with the total cost of approximately \$700,000.

On June 24, 2020, the City and CALTRANS amended the CIA to revise the scope of work to add another water capture facility project, consisting of two FTCDs on Bayview Avenue; utilizing the remaining funds of approximately \$2.3 million to deliver additional trash load reduction from the City and CALTRANS right of ways. During the design phase of the project, based rocks were preliminary determined through the regional geologic map of the Richmond quadrangle published through the U.S. Geological Survey in 1980. The presence of base rock at the project location was later confirmed through boring activities. Field log noted base rocks was discovered at ten feet below ground surface (bgs), and refusal was encountered at 15 ft bgs at the Bayview project site (see Exhibit A). The removal of base rocks for the installation of the proposed FTCDs would have required added cost and time for the completion of the project. Furthermore, this activity could damage the foundation of the apartment complex located adjacent to the project site. Due to this geotechnical engineering constraints, it was deemed infeasible to complete this project within to the time frame and budget as prescribed in Amendment No. 1 of CIA No. D43CIARIC002. In order to avoid the scenario as described above in future partnership opportunities with CALTRANS, the City learns that it must perform an alternative analysis of multiple project sites to determine the most feasible project location for the installation of FTCD.

This amended Scope Summary is to relocate the proposed water capture project from Bayview Avenue to Cutting Boulevard at South 3rd Street. Also, drainage inlet FTCDs will be considered and implemented at forty-two storm drain inlets, where feasible, to maximize trash load reductions from areas in the City and CALTRANS Right of Ways, given the change in treatment shed areas form the location change.

Background

The City of Richmond is located in the Contra Costa County, a county in the San Francisco Bay Region. The San Francisco Bay Region encompasses portions of Alameda, Contra Costa, Marin, Napa, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma Counties. One way that the San Francisco Regional Water Board protects water bodies within region is to develop Total Maximum Daily Loads (TMDLs), which are programs to restore water quality in water bodies impaired by pollutants such as Trash, PCBs and Mercury. To achieve the goals of the TMDLs, a reduction in the amount of inputs of the aforementioned pollutants to the San Francisco Bay (the Bay) is required.

In 2015, the San Francisco Regional Water Board reissued the stormwater Municipal Regional Permit 2.0 (MRP 2.0), a National Pollutant Discharge Elimination System (NPDES) permit that regulates discharges of stormwater runoff from MS4s. The MRP 2.0 includes provisions that implement the requirements in the Trash, PCBs, and Mercury TMDLs to reduce discharges of these pollutants in stormwater runoff to the San Francisco Bay. The reduction of these pollutants could be achieved through the implementations of FTCDs or green stormwater infrastructure (GSI), and programmatic approach such as the PCBs building demolition material controls.

The MRP requires compliance with TMDL requirements, specifically the San Francisco Bay Mercury TMDL (SFRWQCB, 2004, amended by SFRWQCB, 2006) and the San Francisco PCB TMDL (SFRWQCB, 2008). Water quality objectives were established in each TMDL to protect beneficial uses of the impaired receiving water, mainly San Francisco Bay. PCB concentrations tend to be highest in sediments, thus typical bioaccumulation starts with bottom-feeding species and transfers along the food chain, with the additional issue of biomagnification (increased concentrations in organisms higher up on the food chain) known to occur with PCBs. Mercury is also strongly associated with sediments and builds up through bioaccumulation and biomagnification. Methylmercury, the organic form of mercury, is of particular concern due to the toxicity and increased bioavailability to aquatic organisms. Overall, the consumption of some fish in San Francisco Bay can be a threat to human health given the elevated levels of PCBs and mercury in fish tissue. The legacy nature of the pollutants of concerns and lack of knowledge on dispersion and degradation processes contributed to the uncertainty in future conditions.

The PCB TMDL established two water quality objectives; a fish tissue target of 10 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and a sediment target of 1 $\mu\text{g}/\text{kg}$ based on a food web model developed by the San Francisco Estuary Institute (SFEI). To achieve these objectives, the total mass of PCBs in the active layer of the Bay must be reduced to 160 kilograms. Based on a mass budget model in the TMDL, external loads to the Bay must be reduced to 10 kilograms per year to achieve the required reduction within 30 years. The waste load allocation (WLA) for urban stormwater is 2 kilograms per year, which must be achieved by 2030. Allocations were further broken down by County based on respective Bay-side populations in the year 2000, resulting in a WLA for Contra Costa County of 0.3 kilograms per year. The baseline PCB load from stormwater runoff was estimated at 20 kilograms per year, based on grab samples from Water Year (WY) 2005, resulting in a required load reduction of 10 kilograms per year (90% reduction).

The Mercury TMDL established two water quality objectives; a fish tissue target applying to 60-centimeter-long striped bass of 0.2 mg/kg (to protect consumption of fish) and a fish target applying to 3-5-centimeter long fish of 0.03 mg/kg (to protect aquatic organisms and wildlife). To achieve these objectives, the suspended sediment mercury concentration must be reduced to 0.2 mg/kg dry sediment. The WLA for mercury in stormwater is 82 kilograms per year, of which Contra Costa County has a WLA of 11 kilograms per year. The baseline/existing load from urban stormwater was estimated at 160 kilograms per year, based on box models for sediment and mercury corresponding to WY 2003. The required load reduction from stormwater is therefore 78 kilograms per year. MRP Permittees are responsible for a load reduction of 62 kilograms per year, to be achieved by 2028, of which Contra Costa County is responsible for reducing 11.0 kilograms per year.

These reduction rates are required by the MRP as part of the process to achieve compliance with the Mercury and PCBs TMDLs for San Francisco Bay. Contra Costa County permittees are also required to

reduce trash discharges to the Bay from municipal storm drain systems. This requirement began with the issuance of the first MRP in 2009, with a 40% reduction required in 2014. Under the current MRP term, no adverse impact on receiving waters from trash is required by 2022.

These reductions will largely be accomplished through the implementation of green infrastructure, including stormwater capture and use and/or infiltration to groundwater. Contra Costa County Clean Water Program developed a countywide Storm Water Resource Plan (SWRP) that focuses primarily on stormwater capture with a multi-benefit approach to overall water resources planning, including water quality. This plan is being followed by local Green Infrastructure Plans (GI Plans) to meet MRP requirements. Development of the GI Plans will be a multi-year effort that includes preparation of a reasonable assurance analysis (RAA) to demonstrate that long-term GI Plan implementation by all MRP permittees will reduce PCB loads by three kilograms per year by 2040.

Proposed Project

The City proposes to relocate the project site to Cutting Boulevard at South 3rd Street (Figures 1 and 2) for the installation of one FTCD, Contech CDS unit (Figure 3). This location is within the Lauritzen Canal Watershed (the Watershed). The CDS unit will intercept litter from approximately 136 acres of upland areas with the land uses of old urban and old industrial (Figure 4), to mitigate water quality impacts in the Watershed. Of these 136 acres, 10 acres are designated as low trash generating areas, 35 acres are designated as medium trash generating areas, 72 acres are designated as high trash generating areas, 19 acres are designated as very high trash generating areas. Further, the treatment area includes approximately 10 acres from CALTRANS right of way, which are designated at very high trash generating area, and 126 acres from the City of Richmond. The CDS units have the capability of separating and trapping debris of 5mm or larger, along with sediment, and oil and grease in stormwater and urban runoffs. The proposed CDS unit for this project has been rated as being effective at trapping 80% of sediments at the 125-micron level. The reduction of PCBs and Mercury load in the Watershed can be as high as 1.15 mg/year/acre, and 12 mg/year/acre, respectively based on the land-use of the drainage area, 106.7 acres of old urban and 19.3 acres of old industrial. The accounting method used for these reductions were documented in the BASMAA Source Control Load Reduction Accounting Report (2020). The loads reduced accounting methodology for FTCDs is the product of tributary area treated by large full trash capture device in acres, area weighted PCBs or mercury yield (mg/acre-year) and efficiency factor for FTCDs, which is assumed to be 20%. Small inlet FTCDs (i.e. United Storm CPS units) will be installed, where feasible, at the City's storm drain inlets to which stormwater from CALTRANS right of way discharge. A total of forty-two inlets are being evaluated for the feasibility of installing these units (Figure 5). The treatment shed areas, as well as PCBs and Mercury load reductions, will be calculated upon completion of feasibility evaluation for these small FTCDs. The installation of the small FTCDs will provide supplement treatment areas to address the reduced treatment areas as a result of the change in project location.

The revised project scope includes initial engineering and geotechnical assessments, detailed design, environmental compliance, local permit application (i.e. Encroachment permit) construction of a diversion structure and piping, construction of a CDS unit, excavation and construction of a high

void underground storage/infiltration chamber, disposal of non-hazardous excavated soil, and reconstruction of disturbed portions of the site.

Figure 1: Project Site

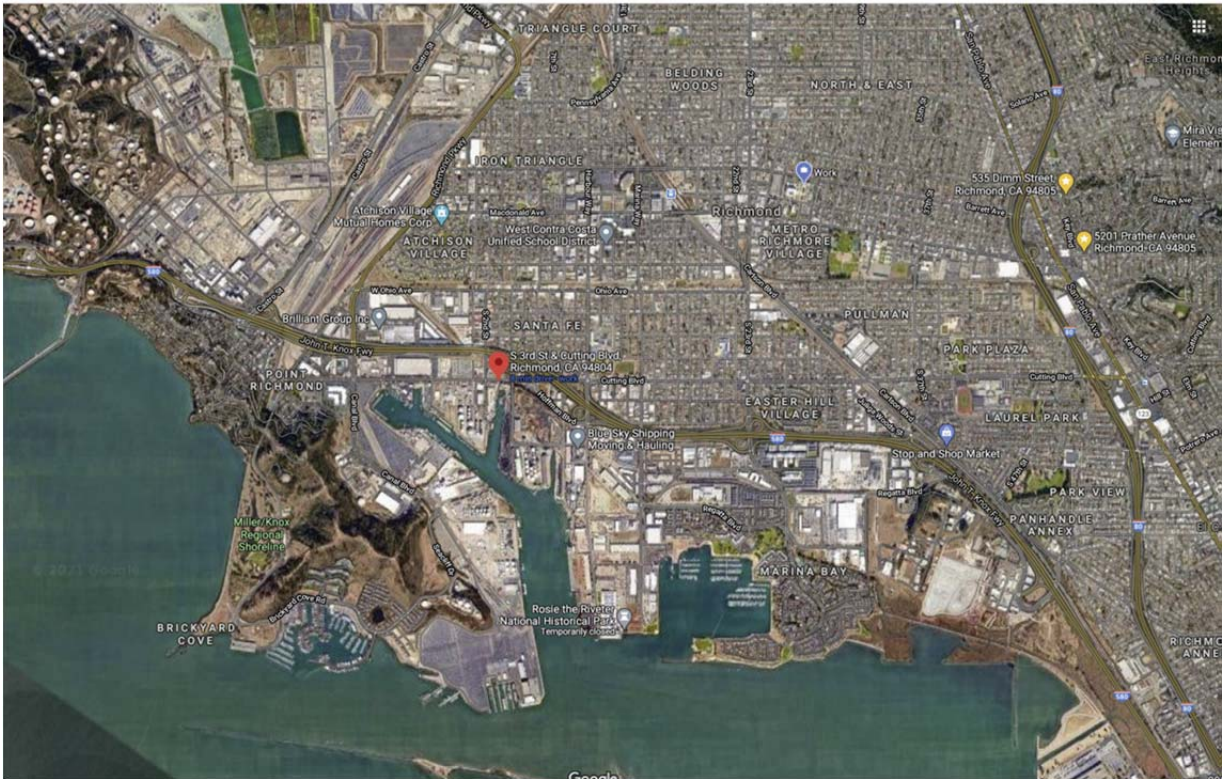


Figure 2. Project boundary and trash generation rates

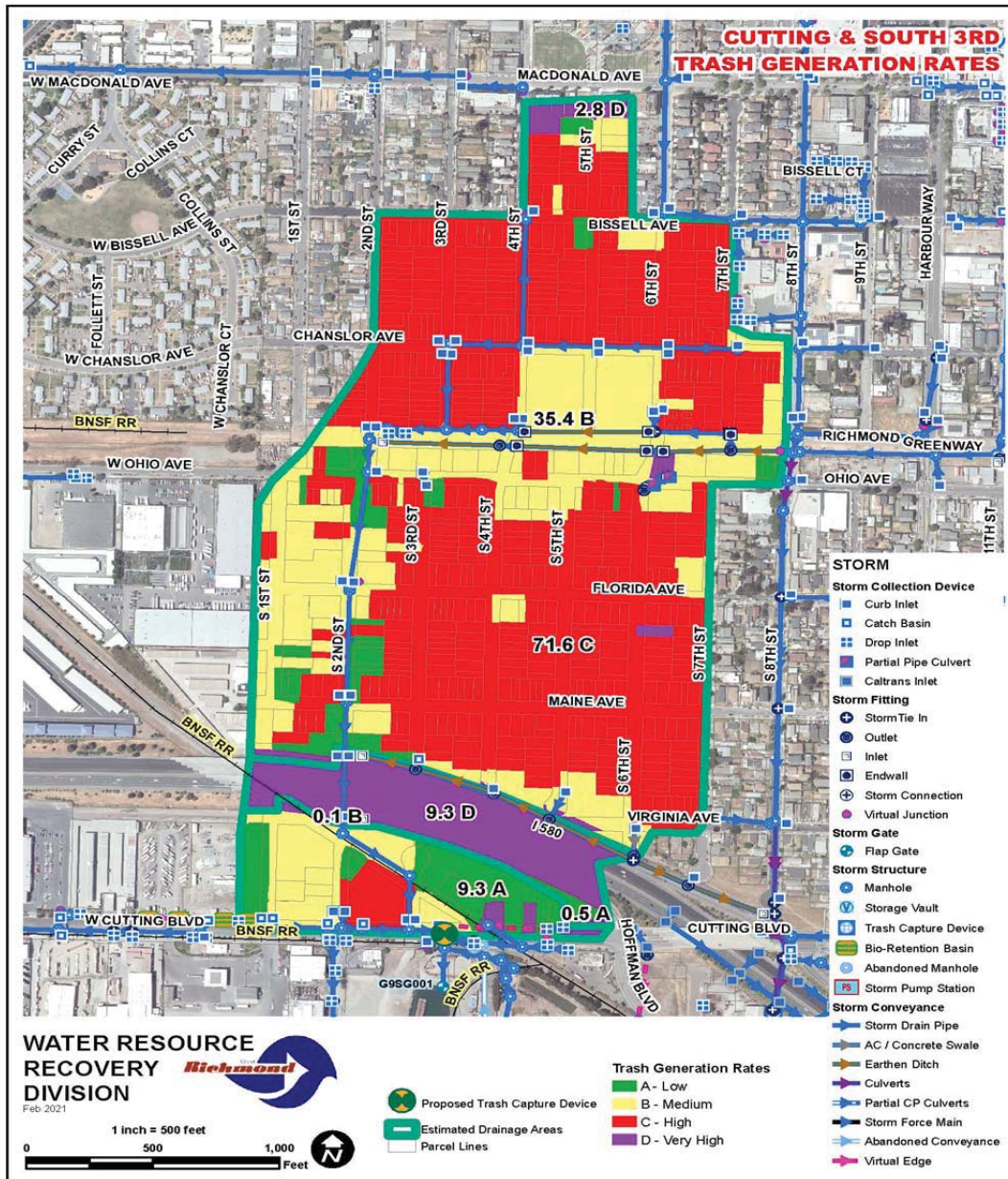


Figure 3. Full Trash Capture Devices, Contech CDS Unit and United Storm Connector Pipe Screen

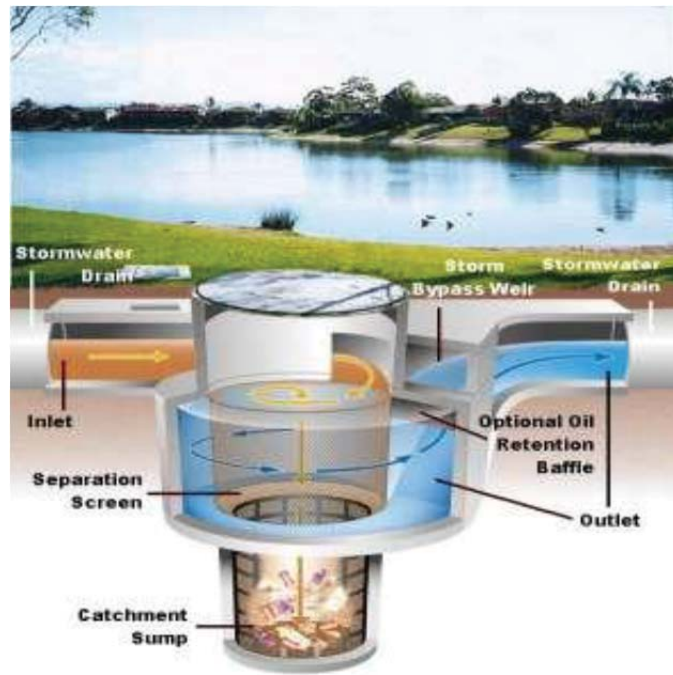


Figure 4. Land-use within Project area

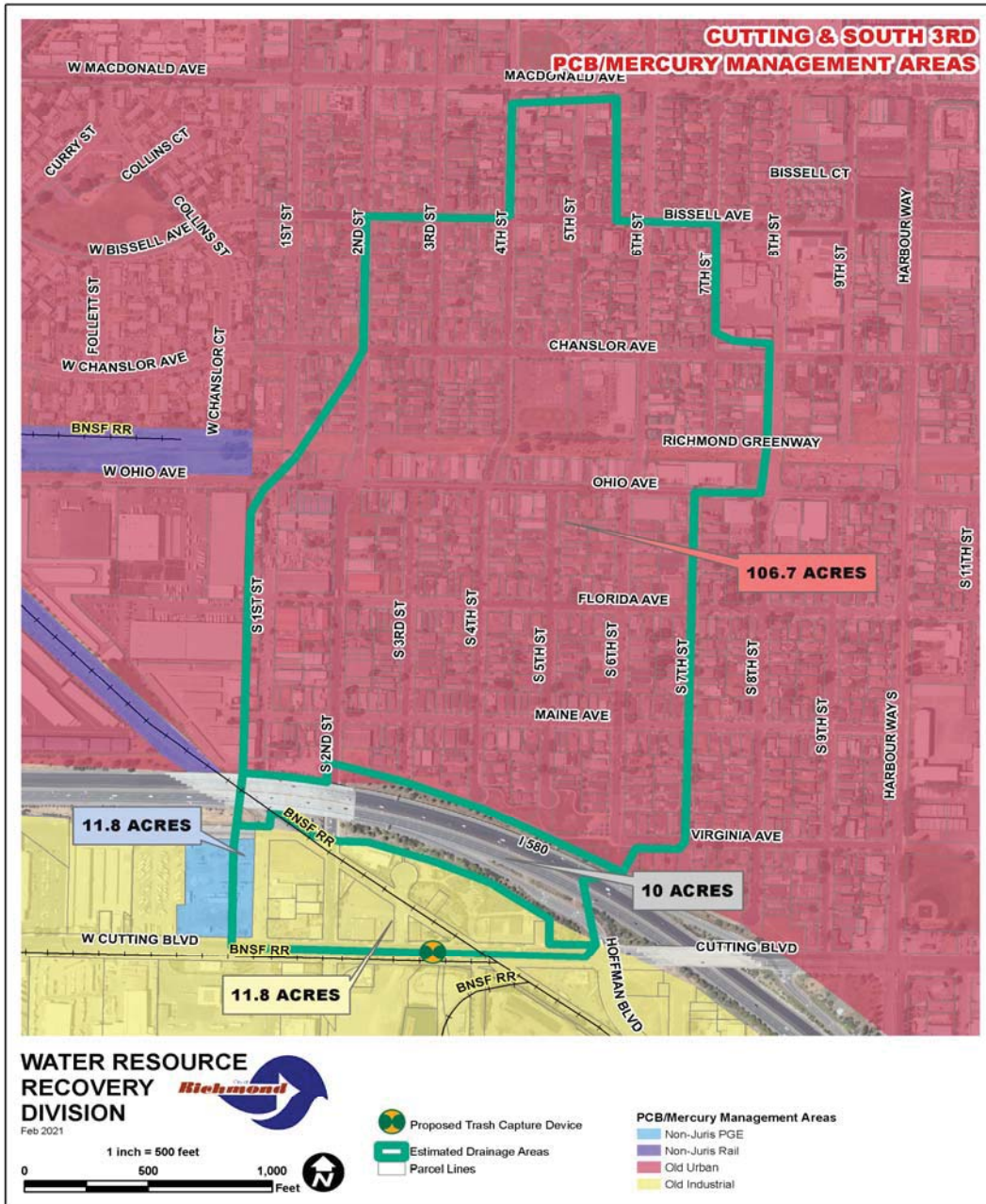
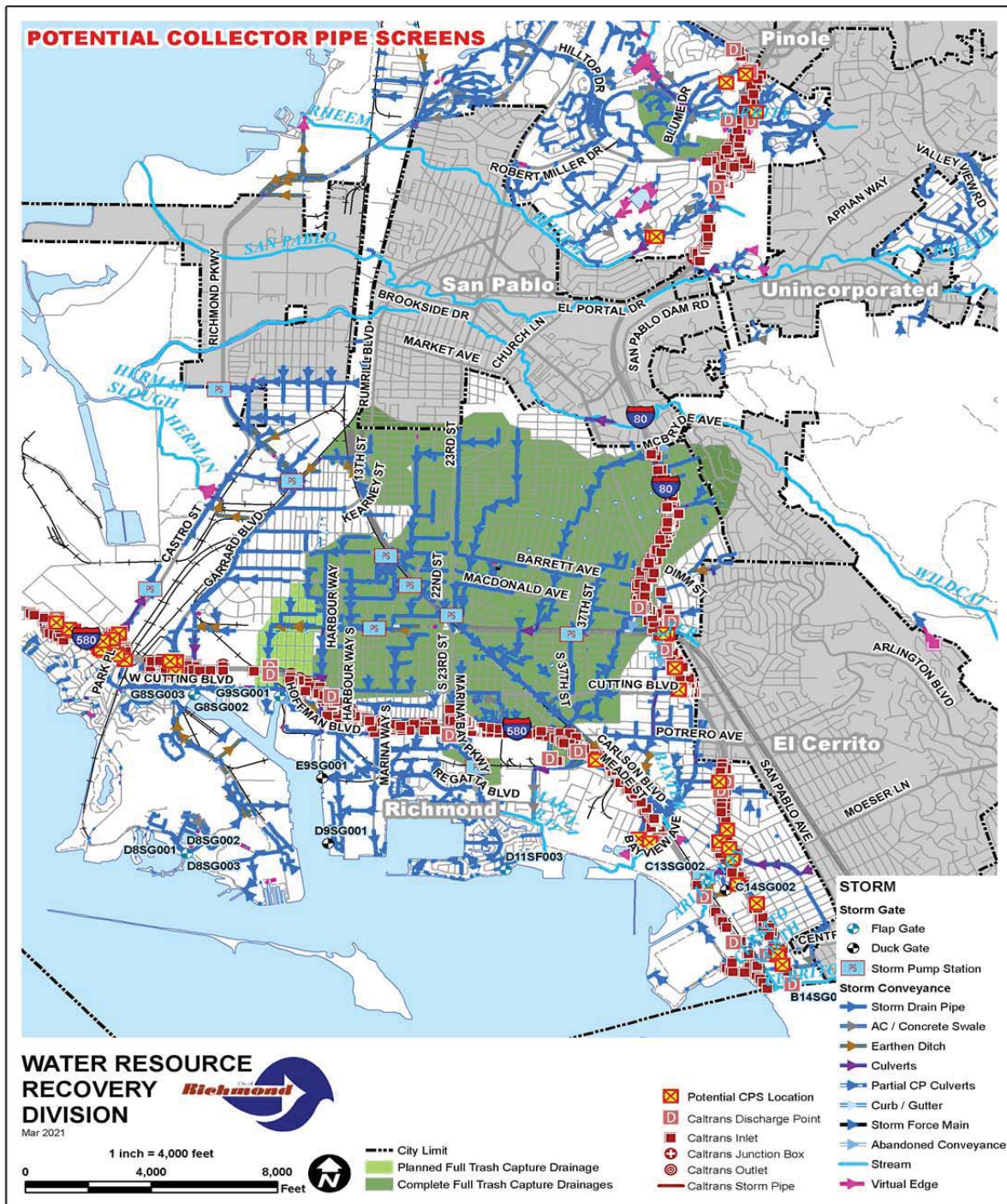


Figure 5. Locations of storm drain inlets considered for small inlet full-trash capture devices



Project Status

As of the week of March 1-5, 2021, the design of the Contech CDS unit is completed at 100%. Also, the City has placed the order of the CDS unit. The CDS unit is expected to be delivered by the last week of March 2021, at which time construction will commence. Construction activities are estimated to be completed at the end of April 2021. The project timeline is provided in Table 3. The project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15301(b) consisting of projects constructing minor alteration to an existing publicly-owned utility involving negligible or no expansion of use.

Table 2. Cost Details for Phase II of the PROJECT

COST TYPE	TOTAL
Design and Field Work for Design	\$70,000
CDS Unit	\$653,000
Small Inlet Devices	\$50,000
Construction Costs	\$1,247,000
Geotech and Environmental Testing	\$20,000
Contingency	\$294,230
Total	\$2,314,230

Table 3. Estimated Timeline for Completion of Phases I and II of the Project

Phase I: Installation of CDS Units at Regatta Boulevard.

PERFORMANCE BENCHMARK	November, 2018	December, 2018	January, 2019	February, 2019	March, 2019	April, 2019	May, 2019	July, 2019
Design		30%	100%					
Purchase and Delivery of CDS units	10%	30%	50%	100%				
Bidding Process				100%				
Construction					30%	50%	70%	100%
Report and Follow-up								100%

Phase II: Installation of CDS Unit at Cutting Boulevard.

PERFORMANCE BENCHMARK	January, 2021	February, 2021	March, 2021	April, 2021	May, 2021	Jun, 2021
Design	10-50%	100%				
Purchase and Delivery of CDS units			100%			
Purchase and installation of small inlet FTCD		30%	60%	100%		
Construction			20-50%	100%		
Billing and Report To CALTRANS					100%	

Reference

Bay Area Stormwater Management Agencies Association (BASMAA), 2020. Source Control Load Reduction Accounting for Reasonable Assurance Analysis. Prepared for BASMAA by Geosyntec Consultants and EOA, Inc. August 31, 2020.

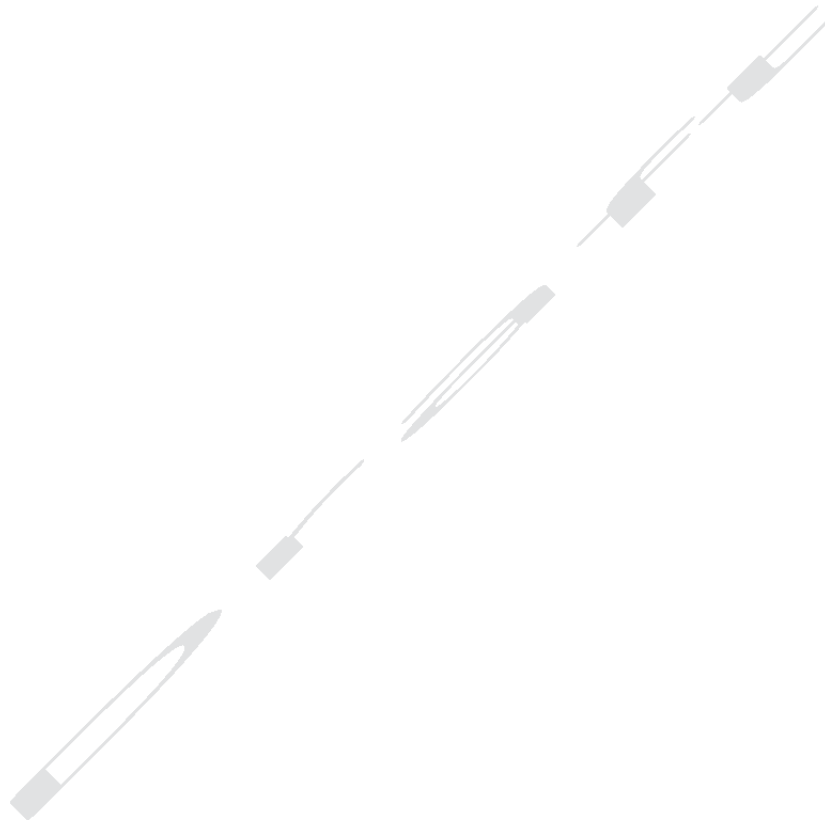
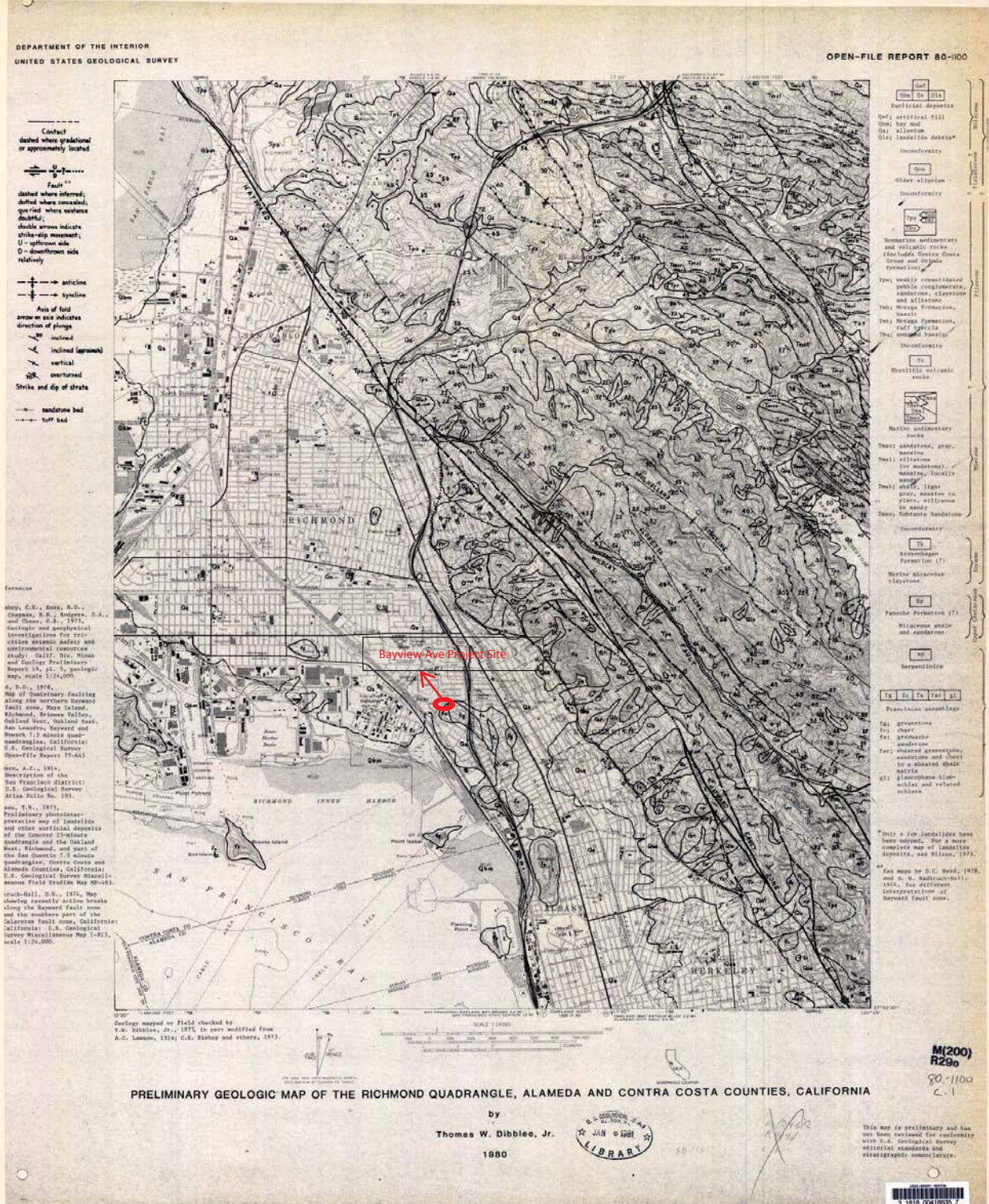
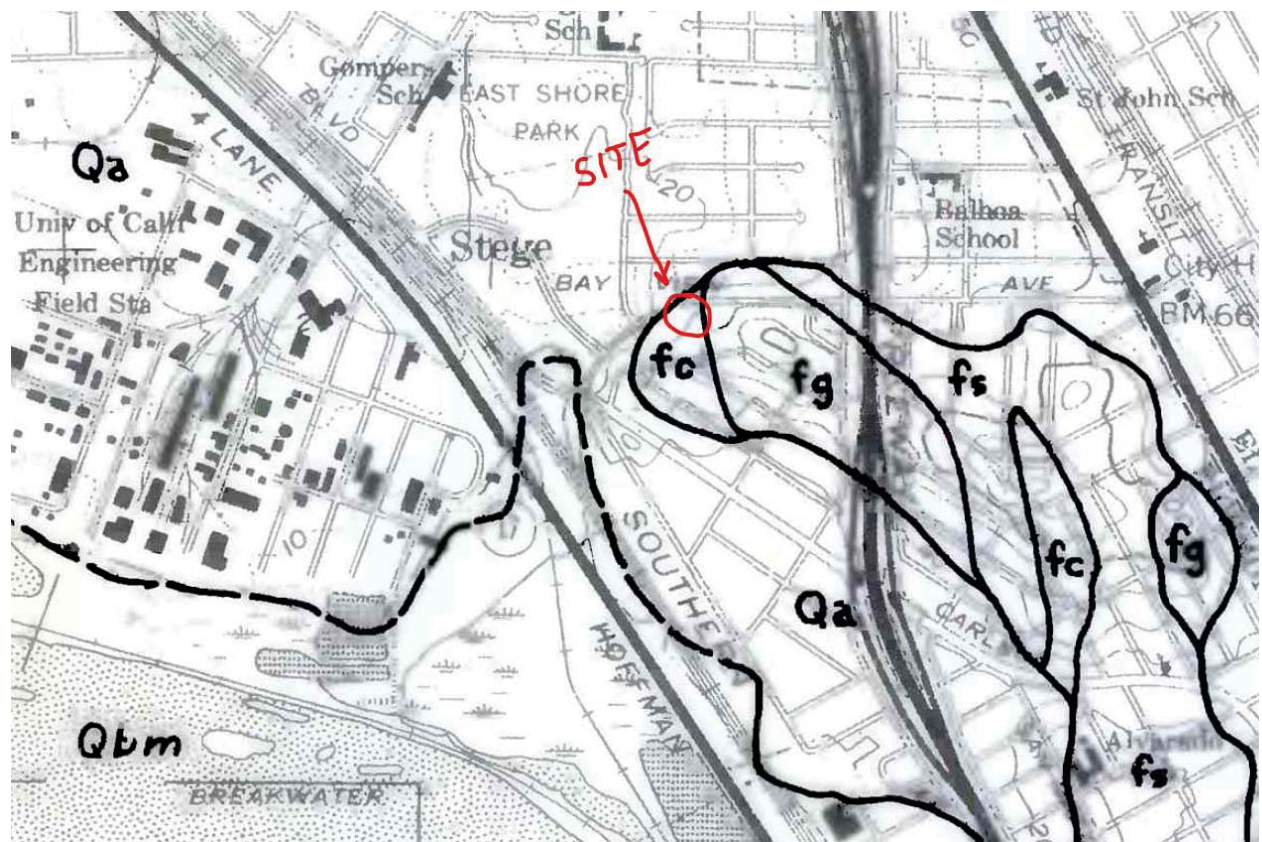


EXHIBIT A – GEOLOGIC MAP AND FIELD SURVEY LOG

Preliminary geologic map of the Richmond quadrangle, Alameda and Contra Costa Counties, California. Map published by U.S. Geological Survey, 1980.





MILLER PACIFIC ENGINEERING GROUP.

5122 Grady Ave.

LOCATION OF BORING		JOB NO. 458382	JOB NAME. Harris - Bayview
		DRILLING METHOD TRUCK mounted B-24 w/ 4.0' SFA	BORING NO. 1
		SAMPLING METHOD MC/PT	SHEET 1 OF 3
		WEIGHT LBS. 140' lbs	DROP 30"
		DRILLING	
		WATER LEVEL	START TIME
		TIME	FINISH TIME
		DATE	11:55 12:45
		CASING DEPTH	DATE
		BORING DEPTH	11/19/20

OFF
2:30

DRILLING CNTR

BY DATE CHKD BY

DRILL RATE	SAMPLER TYPE	INCHES DRIVEN	INCHES RECOVERED	BLOW COUNTS	SAMPLE DEPTH	SAMPLE COND.	DEPTH IN FEET	SURFACE CONDITION
							0	AC
	MC	6	-	5	-	-	1	3" AC, 0 AB
	↓	↓	↓	10	1	-	2	Clayey SILT (ML) Dark/black, moist, very stiff, medium plasticity. Silty w/ ~15 to 20% clay [FILL]
							3	
							4	
	MC	6	-	4	-	-	5	
	↓	↓	↓	6	55	GD	6	grades of mottled orange, change of color to light brown to tan Trace of angular gravel
							7	
							8	
							9	
	MC	6	-	33	-	-	10	stiff Mudstone / Shale
	↓	↓	↓	27	10.5	GD	11	Dark black to brown, hard, moderate to strong, moderate weathering [Rock]
							12	
							13	
							14	
							15	No recovery
							16	
							17	
							18	
							19	
							20	

1, 5, 10, 15, 20 25 30 40

Downtime 12:57pm Karrem @ 2pm