



Stormwater Committee Presentations

C/CAG Stormwater Committee Meeting – July 18, 2024





Item 1 – Call to Order/Roll Call/Hybrid Zoom Procedures



Item 2 – Public Comment



Item 3 (ACTION) – Nominate and elect a Chairperson and Vice Chairperson for the Stormwater Committee for Fiscal Year 2024-25



Item 4 (ACTION) – Review and approve May 16, 2024 Stormwater Committee Meeting minutes



Item 5 (INFORMATION) – Receive stormwater program related information and announcements.



Item 6 (ACTION) – Review and approve recommendation for C/CAG’s DAR to certify and submit Regional Outfall and Receiving Water Trash Monitoring Plan documents to the Regional Water Board





Trash Monitoring Compliance Submittals

MRP 3.0 Provision C.8.e requirements:

- Trash Outfall Monitoring
- Receiving Water Trash Monitoring

Management Questions:

- Are trash controls effectively prohibiting discharges into receiving waters?
- Are discharges from trash management areas controlled to “low” causing or contributing to impacts on receiving waters?

Monitoring Questions:

- What is the trash condition in receiving waters downstream of areas controlled to “low”?
- Are trash conditions in receiving waters strongly correlated with trash conditions in upstream tributary areas?



Trash Monitoring Compliance Submittals

Current MRP compliance submittal requirements:

- Regional Outfall Trash Monitoring Plan and Quality Assurance Project Plan (Version 2.0)
 - BAMSC developed and submitted Version 1.0 to WB in July 2023
 - Revised plan due to WB one year later
- Regional Receiving Water Trash Monitoring Plan and Quality Assurance Project Plan (Version 1.0)
 - BAMSC developed as part of Watching Our Watersheds Regional Trash Monitoring Project (funded by EPA WQIF; lead by C/CAG in partnership with other MRP programs)
 - Due to WB by July 31, 2024
 - Receiving water trash monitoring to begin WY 2025



Trash Monitoring Compliance Submittals

Submittal process:

- Circulated Outfall and Receiving Water MPs and QAPPs to SMCWPPP Watershed Assessment Subcomm. for comment
- Any requested modifications by July 19
- BAMSC program managers will certify and submit via email transmittal to the WB from the Co-chairs of the BAMSC Steering Committee by July 31



Trash Monitoring Compliance Submittals

Action:

- Approve recommendation for C/CAG's DAR to certify and submit the following on behalf of the San Mateo County permittees:
 1. Regional Outfall Trash Monitoring Plan and QAPP (Version 2.0)
 2. Regional Receiving Water Trash Monitoring Plan and QAPP (Version 1.0)



**Item 7 (INFORMATION) –
Receive a presentation
on Countywide Program
water quality monitoring
efforts under the
reissued Municipal
Regional Stormwater
Permit (MRP 3.0)**



MRP Provision C.8 Water Quality Monitoring Update

C/CAG Stormwater Committee

July 18, 2024

Overview of C.8 Monitoring Requirements

Provis ion	Monitoring Type	New in MRP 3	Storm Monitoring
C.8.d	LID Effectiveness Monitoring	Yes	Yes
C.8.e	Trash Monitoring	Yes	Yes
C.8.f	Pollutants of Concern	No	Partial
C.8.f	Receiving Water Limitations	Yes	Partial
C.8.g	Pesticides &	No	Partial

Low Impact Development (LID) Monitoring Requirements

Goal = Measure Effectiveness of LID Controls

- ▶ Flow-weighted composite samples of influent and effluent
 - ▶ 25 sample events (i.e., paired samples) over permit term
 - ▶ Minimum 3 sample events per year (goal = 6)
- ▶ PCBs, PFAS, Hg, Cu, Zn, TSS, TPH, hardness, pH
- ▶ Continuous flow monitoring (wet season)
- ▶ Condition assessments
- ▶ Develop Monitoring Plan FY 2022-23
- ▶ Begin monitoring in FY 2023-24



Low Impact Development (LID) Monitoring Plan Development Process

- ▶ LID Technical Advisory Group (TAG)
 - ▶ Review approach & data results
 - ▶ 3 meetings to date
- ▶ Site selection challenges
 - ▶ Brisbane Green Streets
- ▶ Regional Quality Assurance Project Plan (QAPP)
- ▶ Water Board EO Conditional Approval (August 23, 2023)
 - ▶ Added new requirements
 - ▶ Ongoing negotiations



LID Monitoring Accomplishments & Challenges in FY 2023-24

- ▶ Brisbane School Site
 - ▶ Santa Clara St
- ▶ Late start due to need for flow sensor replacement (Feb 24 start date)
 - ▶ Regional issue
- ▶ 5 of 6 sample events (minimum = 3)
 - ▶ Mar 2, 23, 28; Apr 14; May 4
- ▶ Brisbane Downton Site Challenges
 - ▶ No effluent
 - ▶ Working with City to understand/resolve



Trash Monitoring Requirements

Goals (simplified) =

- **Assess effectiveness of trash controls**
- **Evaluate conditions in receiving waters**

MS4 Outfall Monitoring

- Begin in *FY 2023-24*
- 2 outfalls in San Mateo County
- 3 storm events per year
- Install nets at end of pipes
- Measure flow throughout season
- Characterize collected trash

Receiving Water Monitoring

- Begin in *FY 2024-25*
- 1 station in San Mateo County
- 3 storm events per year
- Trawls suspended from bridges
- Measure flow throughout season
- Characterize collected trash

Trash Monitoring Plan Development Process

- Separate **Regional** Plans and QAPPs for Outfall and Receiving Water (RW) Monitoring
- Trash Technical Advisory Group (TAG)
 - Review outfall and RW approaches & monitoring results
 - 4 meetings to date
- Outfall Monitoring Plan
 - Submitted July 31, 2023
 - Water Board conditional approval – August 31, 2023 (update due July 31, 2024)
- RW Monitoring Plan
 - Submit July 31, 2024

Trash Outfall Monitoring Site Selection Criteria

- ▶ **Trash in catchment is controlled to low (MRP requirement)**
 - ▶ Low = 5 gallons/acre/year
- ▶ **Outfall suitable for attachment of netting device**
 - ▶ Existing headwall (flange) or concrete pipe (insert)
 - ▶ No flapgate or duckbill check valve
 - ▶ No pump station
- ▶ **Landing area suitable for net**
 - ▶ Above high-water mark (avoid submerged outfalls)
 - ▶ Level ground
 - ▶ Smooth surface to prevent net damage
- ▶ **Truck access for installation and retrieval**
- ▶ **Safety (illegal encampments, confined space entry)**
- ▶ **Ability to be permitted (encroachment and regulatory)**



Trash Outfall Monitoring Locations

City	Creek	Land Uses	Catchment (acres)	Trash Control Measures	Outfall Size/Type
San Carlos	Caltrans Ditch to Steinberger Slough	Commercial Industrial	57	Connector Pipe Screens	30" RCP
Half Moon Bay	Caltrans Ditch to Pilarcitos Creek	Shopping center, High school	70	HDS	47" RCP



Trash Outfall Monitoring Accomplishments and Challenges

- ▶ 3 of 3 sample events completed
 - ▶ Nov 13, Jan 18, Jan 30
- ▶ Challenges with flow measurements
 - ▶ When net is attached
 - ▶ When ponding present below outfall
- ▶ Trash characterization approach
 - ▶ Step 1: Trash collection
 - ▶ Step 2: Dewater/remove organic debris
 - ▶ Step 3: Sort & measure volume for 11 trash categories
- ▶ Preliminary results:
 - ▶ 0.01 to 0.08 gallons/acre per storm
 - ▶ Less than 5 gal/acre/year??



Trash Receiving Water Monitoring “Watching Our Watersheds”

- EPA WQIF Grant Funded; administered by C/CAG
 - Implemented by EOA-led Team (includes Balance Hydrologics, SGA and others)
- Compliance Related Tasks
 - Develop Trash Receiving Water (RW) Monitoring Plan/QAPP
 - Trash RW Monitoring over three years (WY 2025 – WY 2027)
 - Trash Characterization (Outfall and RW samples)
 - Reporting
- Other Tasks
 - Control Source Study (San Mateo County), Litter Campaign, OVTA data analysis
 - Methods Guidance Document, Portal, Trash Symposium

Trash Receiving Water Monitoring



Pollutants of Concern (POC) Monitoring Requirements

► C.8 Permit Requirements

- PCBs, mercury, copper, CECs

► Management Questions

1. source identification
2. bay impairment
3. BMP effectiveness
4. loads and status
5. trends
6. compliance with Receiving Water Limitations

► C.11/12 Requirements (PCBs, mercury)

- Source property identification
- Investigation 1,411 acres of old industrial
- Ongoing methodology since WY 2015
- PCB thresholds for follow-up
 - 1 ppm = source
 - 0.5 ppm and 0.2 ppm = investigation
- Old Industrial Control Measure Plan implementation

Pollutants of Concern (POC) Monitoring Requirements

Pollutant of Concern	Total Samples	Yearly Minimum	Source ID	Bay Impairment	Management Action Effectiveness	Loads & Status	Trends	Receiving Water Limitations
PCBs	65	8	8	8	8	16	16	--
Mercury	50	8	8	8	8	8	8	--
Copper	5	--	--	--	--	5	--	--
CECs*	25	*Can be satisfied by additional contributions to RMP.						
RWLs Assessment	5 (4 wet season, 1 dry season)	Regionally coordinated monitoring plan conditionally approved by Water Board (PCBs, copper, mercury, zinc, lead, bacteria, nutrients, PAHs)						5

Pesticide & Toxicity Monitoring Requirements

- ▶ Wet weather – two sites, one event (Nov 8, 2022), regionally coordinated
 - ▶ Water toxicity (5 test species)
 - ▶ Water chemistry (pesticides)
- ▶ Dry season – one site, annual monitoring, shared field duplicates
 - ▶ Water toxicity (5 test species)
 - ▶ Sediment toxicity (2 test species)
 - ▶ Sediment chemistry (metals, PAHs, pesticides)
 - ▶ Pilarcitos Creek – recently 303(d) listed



Organism	Sensitivity
<i>Ceriodaphnia dubia</i> (Freshwater Crustacean)	Organophosphates / Chlorpyrifos, metals
<i>Pimephales promelas</i> (Fathead Minnow)	Ammonia, pesticides
<i>Selenastrum capricornutum</i> (Green Algae)	Herbicides, metals
<i>Hyalella azteca</i> (Freshwater Amphipod)	Pyrethroids
<i>Chironomus dilutus</i> (Midge)	Neonicotinoid/ Fipronil

Questions

Bonnie de Berry – bdeberry@eodainc.com

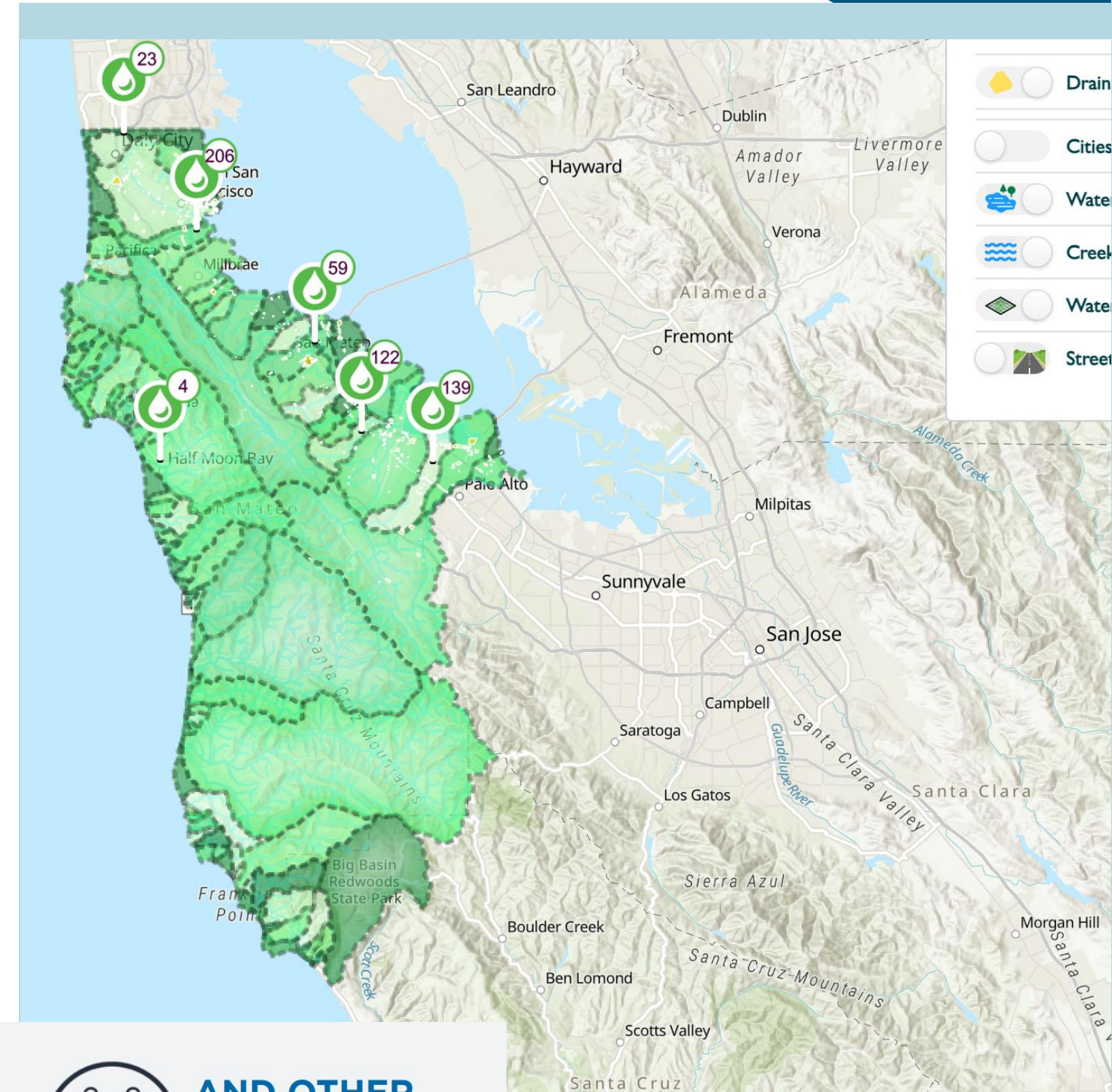


Item 8 (INFORMATION) – Receive information and provide input on the development of the San Mateo County OneWatershed Framework approach and data inventory

What is the OneWatershed Framework?



- OneWatershed Climate Resilience Infrastructure addresses the regional and **shared-risk** of climate change to **water infrastructure and resources** (sewer, water, stormwater) with an emphasis on building **adaptive capacity** to climate impacts for the **most vulnerable communities**.
- Leveraging prior efforts but taking a more holistic approach to watershed based resilience



**FLOOD RISK
REDUCTION**



**WATER SUPPLY
RELIABILITY**



**PUBLIC SAFETY
AND ACTIVE
TRANSPORTATION**

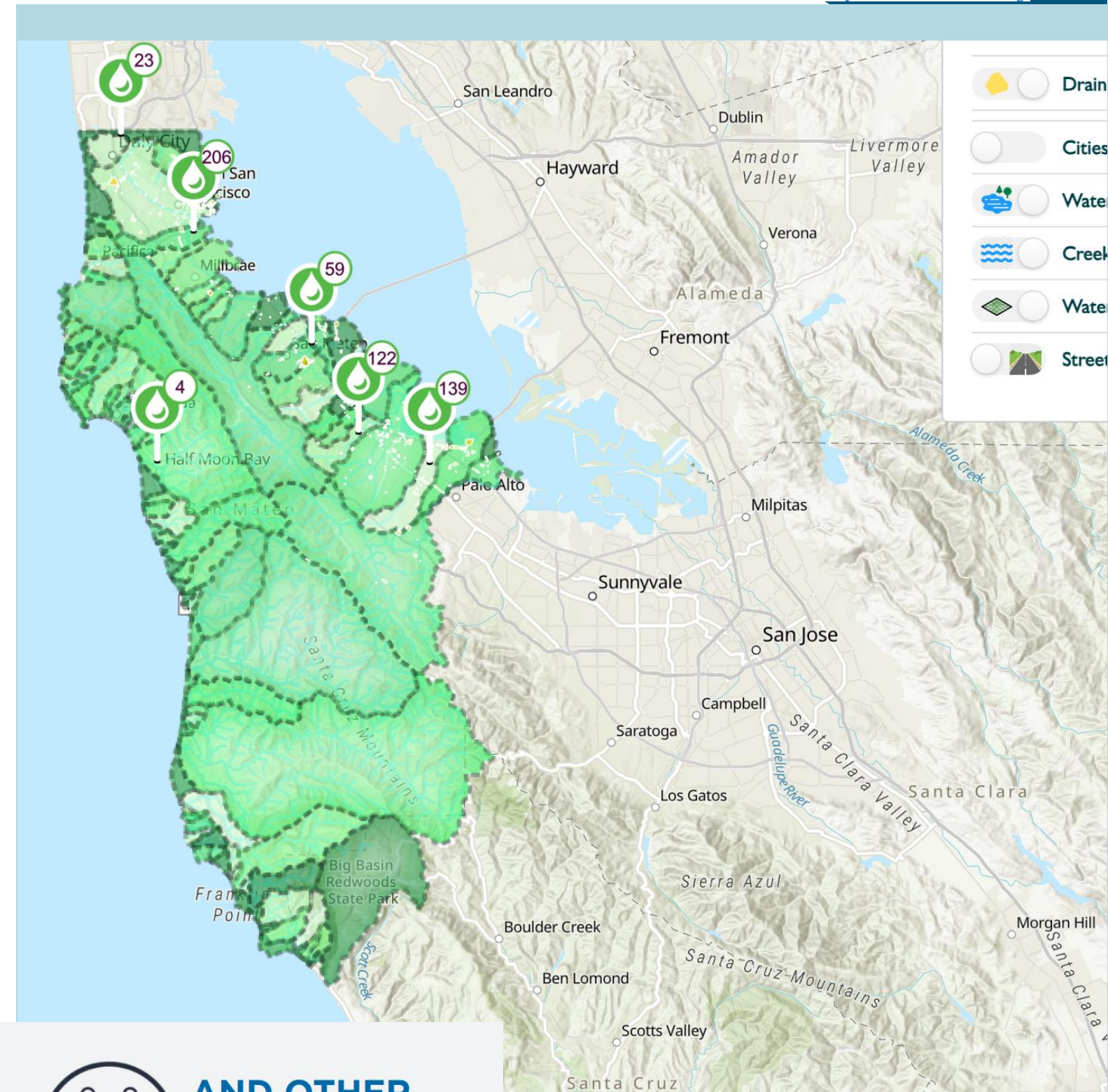


**AND OTHER
COMMUNITY
CO-BENEFITS**

What is the One Watershed Framework?



- Builds on years of often disaggregated climate resilience planning in the county
- Harnesses resources and partnerships under an umbrella program to advance shared goals around overlapping climate risk, collectively
- Equity first (e.g., San Bruno Creek Watershed “Community-Led Plan”)



**FLOOD RISK
REDUCTION**



**WATER SUPPLY
RELIABILITY**



**PUBLIC SAFETY
AND ACTIVE
TRANSPORTATION**

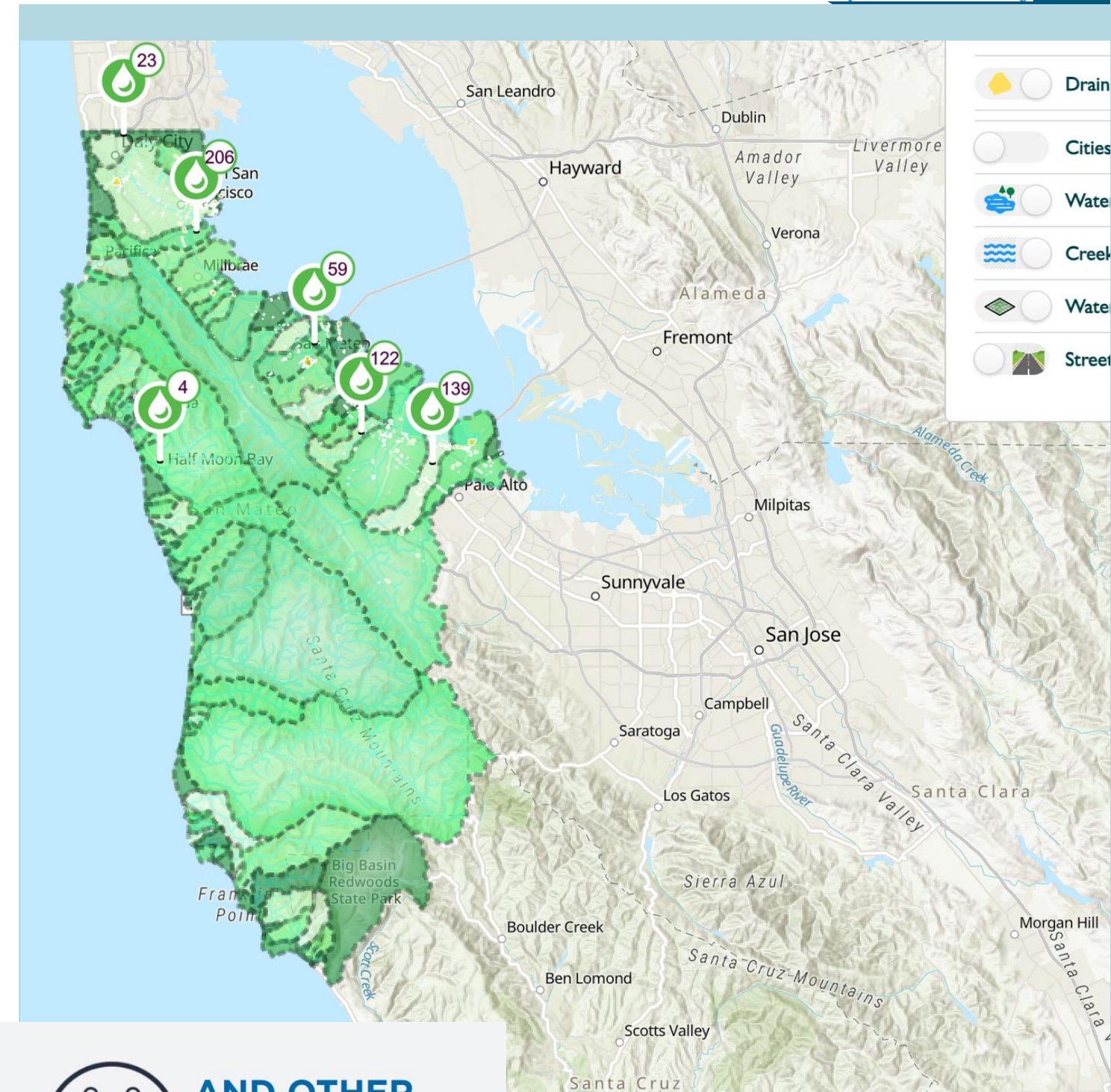


**AND OTHER
COMMUNITY
CO-BENEFITS**

What is the One Watershed Framework?



- Part one of a multi-year, multi-part strategy to build systematic and transformational change with respect to integrated watershed management and resilience in San Mateo County (this is phase one)
- Not a plan itself but a framework for future coordinated resilience planning



**FLOOD RISK
REDUCTION**



**WATER SUPPLY
RELIABILITY**



**PUBLIC SAFETY
AND ACTIVE
TRANSPORTATION**



**AND OTHER
COMMUNITY
CO-BENEFITS**

OneWatershed Climate Resilience Implementation Program (NOAA Grant)



Program Collaborators (the Partnership):

7 projects in 5 communities, program developments + Pilot Workforce Development Program



ReScape



Green Schoolyards America



OneWatershed Project Partners

- C/CAG Stormwater Program – project lead
- Climate Resilient Communities – CBO lead
- City of San Bruno – San Bruno Creek Watershed lead
- County of San Mateo Sustainability Department
- South San Francisco-San Bruno Regional Water Quality Control Plant
- Bay Area Water Supply and Conservation Agency
- San Mateo County Flood and Sea Level Rise Resiliency District (OneShoreline)

Water Supply



Stormwater



Wastewater



Groundwater



Geosyntec Team

- Geosyntec
 - Prime contractor
- Paradigm
 - OneWatershed Dashboard Lead
- Craig Communications
 - Outreach Support
- Hazen
 - Water Supply Data Lead
- EOA
 - Wastewater Data Lead and Technical Advisor
- Carollo
 - Technical Advisor



Geosyntec 
consultants



PARADIGM
ENVIRONMENTAL



CRAIG
Communications
344 20th Street, Oakland, CA 94612



Hazen



EOA
inc.

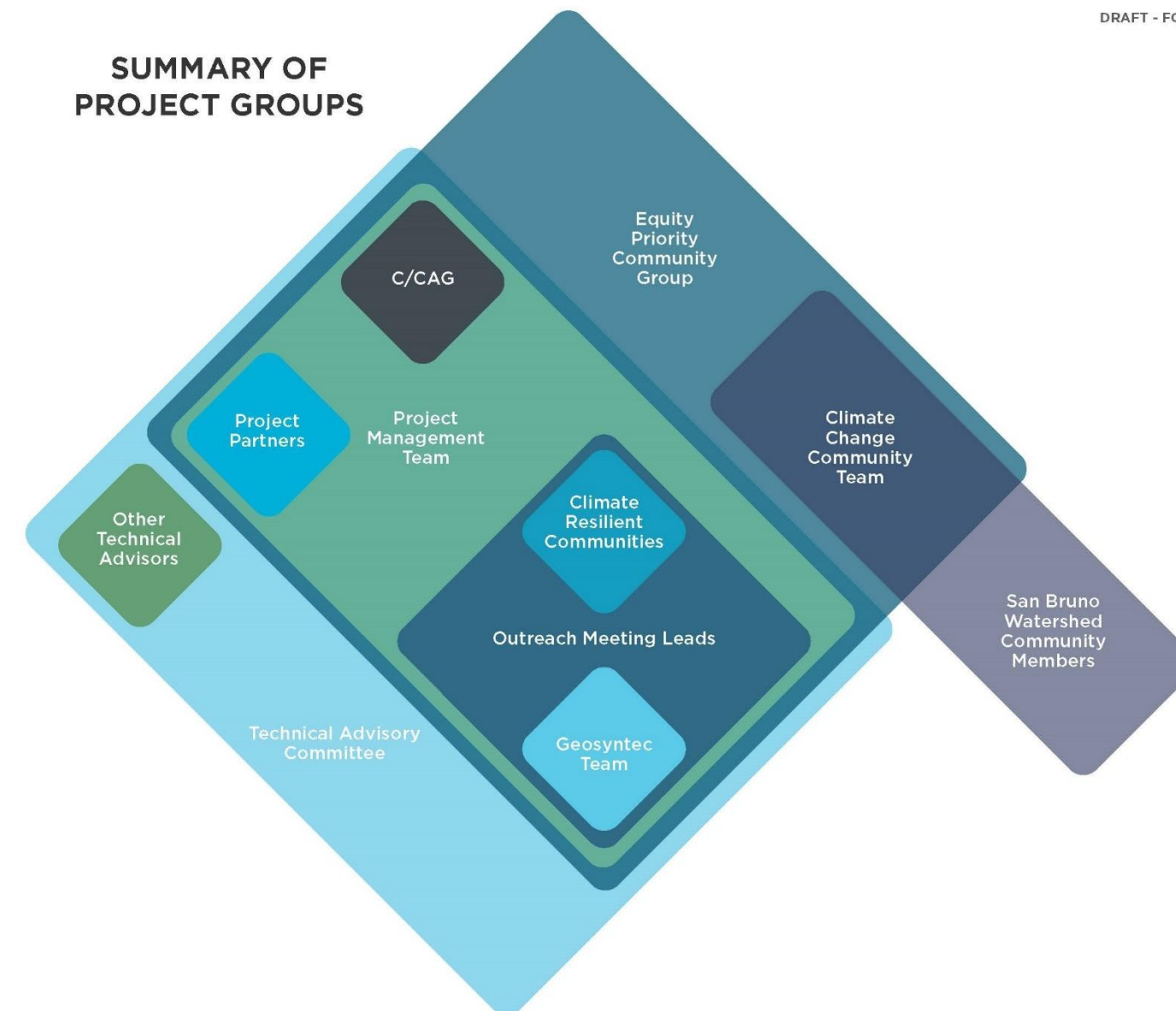
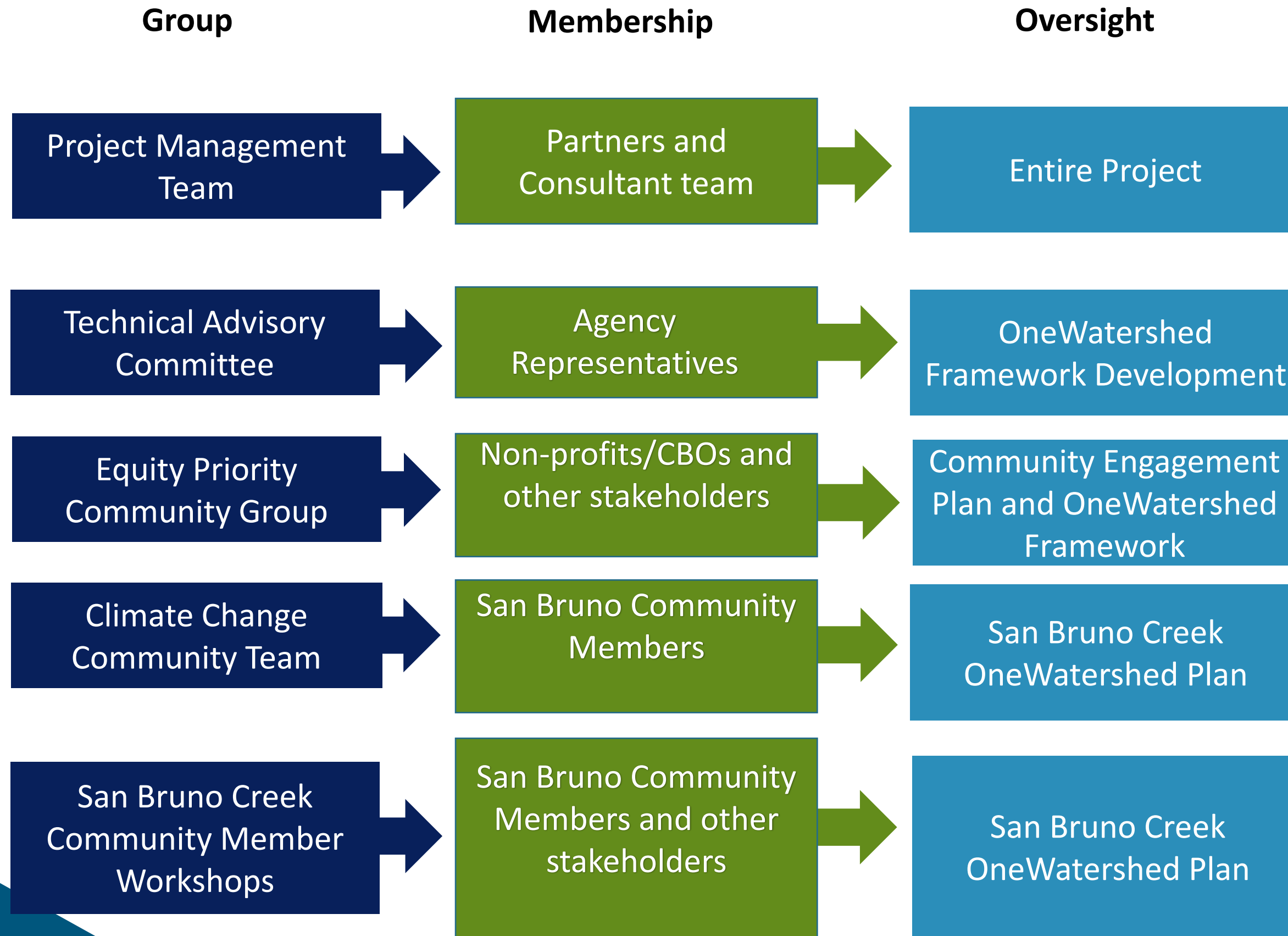


carollo®



Geosyntec 
consultants

Project Groups/Committees



Geosyntec Team Tasks

1

Workplan and Initial Engagement

- Develop Work Plan
- Develop Engagement Plan
- Establish Committees

2

OneWatershed Data Inventory

- Data Collection and Gap Analysis
- Inventory Development
- Shared-Risk Assessment Approach

3

OneWatershed Framework and OneWatershed Dashboard

- OneWatershed Framework Report
- OneWatershed Dashboard
- Shared-Risk Countywide Results

4

Community-Led San Bruno Creek OneWatershed Climate Resilience Plan

- Community-scale Vulnerability Assessment
- Pilot of OneWatershed Framework
- San Bruno Creek OneWatershed Climate Resilience Plan

5.1

NOAA Grant Application

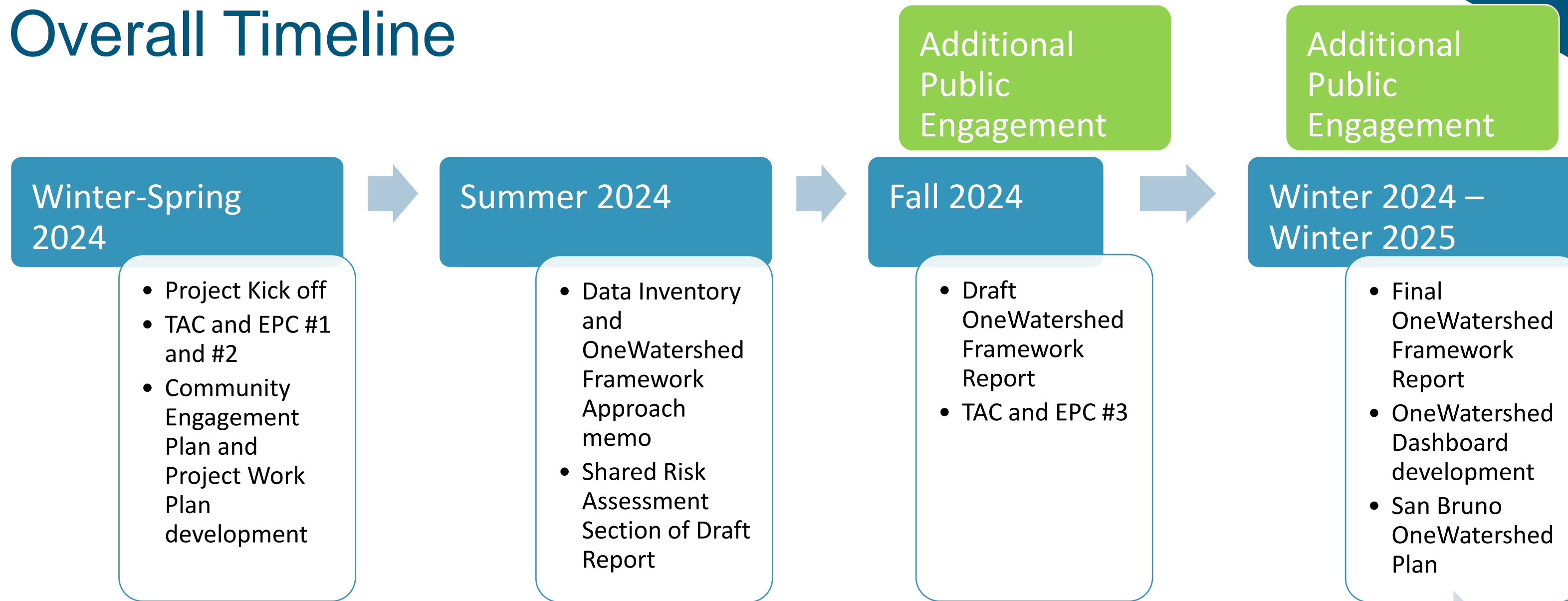
- NOAA Climate Resilience Regional Challenge Grant Application (submitted Feb 2023/notices summer 2024)

5

Project Administration

- Project Kick-Off and Monthly PMT Meetings
- APGP Progress Reports and Final Report

Overall Timeline



San Bruno Climate Change Community Team Meetings (monthly)

San Bruno Creek Resilience Plan Public Workshops

OneWatershed Data Inventory

OneWatershed Data Inventory Development

- Data Inventory (matrix), including summary of data gaps
- Online Web Viewer, which includes files summarized in the Data Inventory
- Geodatabase, a folder deliverable of new GIS files compiled for the OneWatershed Project

Data Inventory Development

- Geospatial data compilation
- Built upon data gathering from previously completed efforts
- Compiled County data and other publicly available data

	B	C	D	E	F	G	H	
1	Dataset Name	Dataset Type	Dataset Description	Dataset Feature Type	Dataset Spatial Coverage	Dataset Source	Dataset Date / Year	Data data
2	Erosion Hazard (Yr 2100)	Climate Impact	Coastside future erosion in Year 2100 developed by the Pacific Institute (and used in the SMC SLR Vulnerability Assessment)	Polygon	San Mateo County	Pacific Institute	Transfer from SMCWPPP on 8/9/2017	San M Priori
3	FEMA 100-yr Flood Plain	Climate Impact	100-yr flood plain (1% chance of being inundated on any given year)	Polygon	San Mateo County	FEMA	Downloaded 2017	San M Priori
4	San Mateo County Extreme Heat Dashboard	Climate Impact	This dataset shows the predicted number of high heat days that will occur in San Mateo County in the future. Various scenarios are included based on year range, carbon pathway, and geography.	Polygon	San Mateo County	San Mateo County Extreme Heat Dashboard (city.systems)	2020	San M Heat Goog
5	ABAG Hazard Viewer	Climate Impact	The MTC/ABAG Hazard Viewer Map include shows various potential hazards in the general Bay area. These include Historic Wildfire Perimeters, Fire Hazard Severity Zones, Tsunami Evacuation Zones, FEMA Flood Hazard, Sea Level Rise, Landslide Hazard (Rainfall Induced), Earthquake Fault Zones, Probabilistic Earthquake Shaking Hazardm Earthquake Liquefaction susceptibility, Earthquake Deaggregation, and Earthquake Shaking Scenarios..	Various	Bay Area	MTC/ABAG Hazard Viewer Map (arcgis.com)	Various	
6	San Mateo County Sea Level Rise Vulnerability Assessment	Climate Impact	The dataset shows the impacted parcels and roadways under sea level rise conditions from 0' (present) to 2.9' (2060-2100).	Various	San Mateo County	Sea Level Rise - SMC Sustainability Department	2022	Prote from (arcg

Data Categories

- Climate Impact
- Groundwater
- Social Vulnerability
- Stormwater Infrastructure
- Wastewater
- Water Supply

OneWatershed GIS Web Viewer

C/CAG's existing GIS web viewer was updated with Data Inventory files.

Data are organized as follows :

- **Stormwater Resource Plan**: data compiled for C/CAG's 2017 SRP.
- **Sustainable Streets Master Plan**: data from C/CAG's 2021 SSMP
- **OneWatershed**: new data layers collected for the Project.

Stormwater Resource Plan data layers were updated when new versions were available.

Stormwater assets are primarily included under the Stormwater Resource Plan.

Info and Tools

Map themes

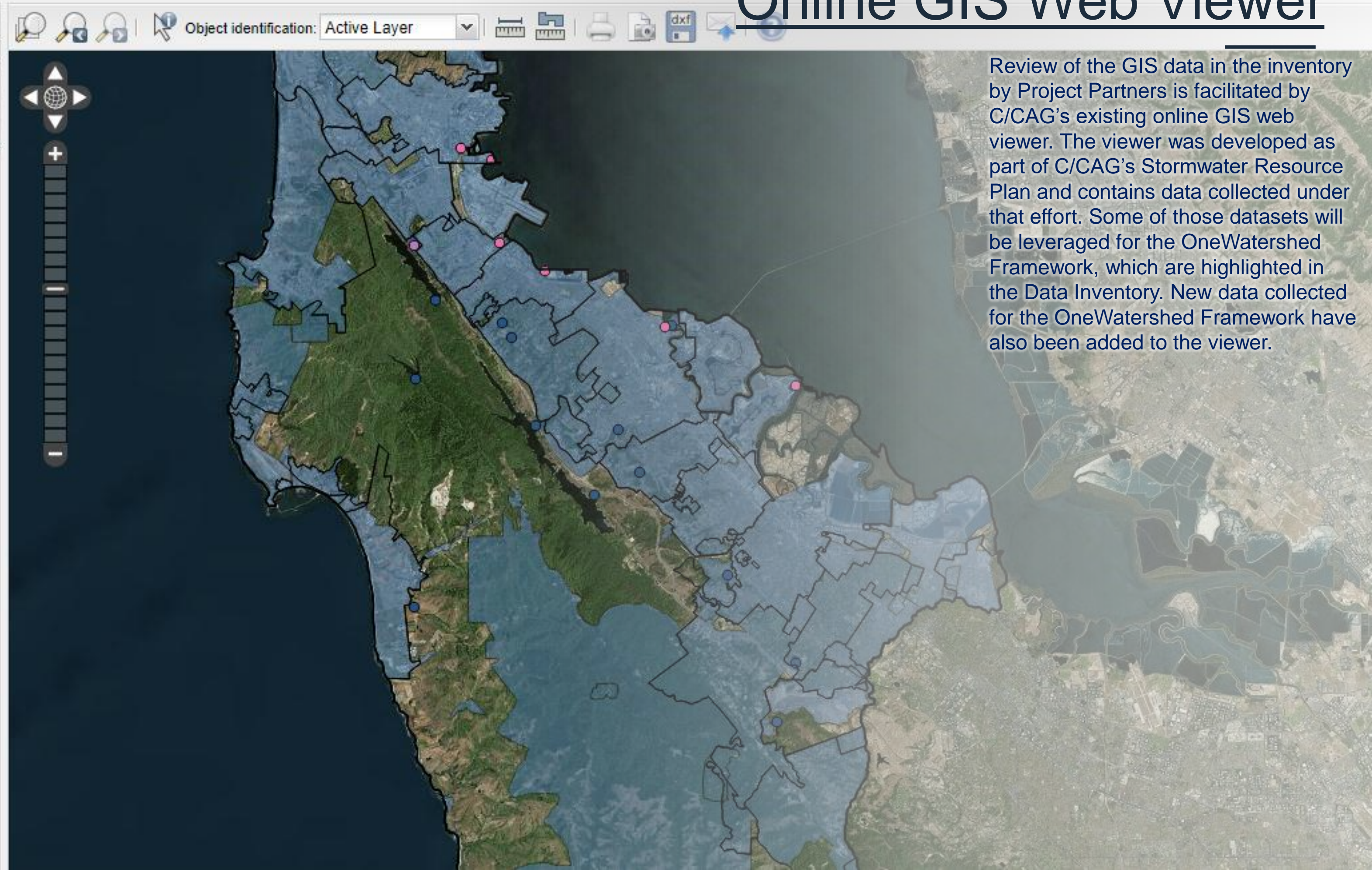
Map

Map Layers

- San Mateo County Project Prioritiza
- Stormwater Resource Plan
- OneWatershed

Background Layers

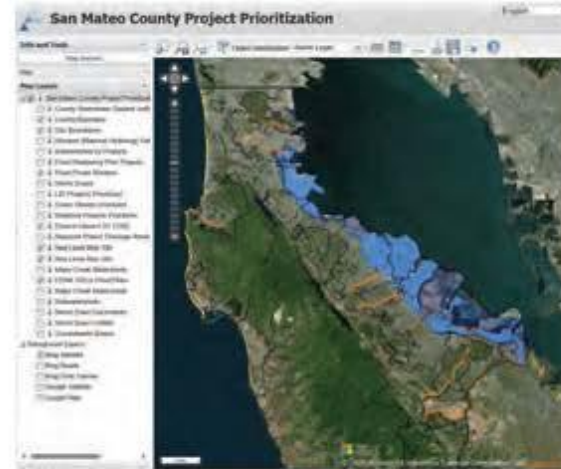
- Bing Satellite
- Bing Roads
- Bing Gray Canvas
- Google Satellite
- Google Map



Review of the GIS data in the inventory by Project Partners is facilitated by C/CAG's existing online GIS web viewer. The viewer was developed as part of C/CAG's Stormwater Resource Plan and contains data collected under that effort. Some of those datasets will be leveraged for the OneWatershed Framework, which are highlighted in the Data Inventory. New data collected for the OneWatershed Framework have also been added to the viewer.

OneWatershed Framework Approach

Climate Risk Data



OneWatershed Infrastructure Data



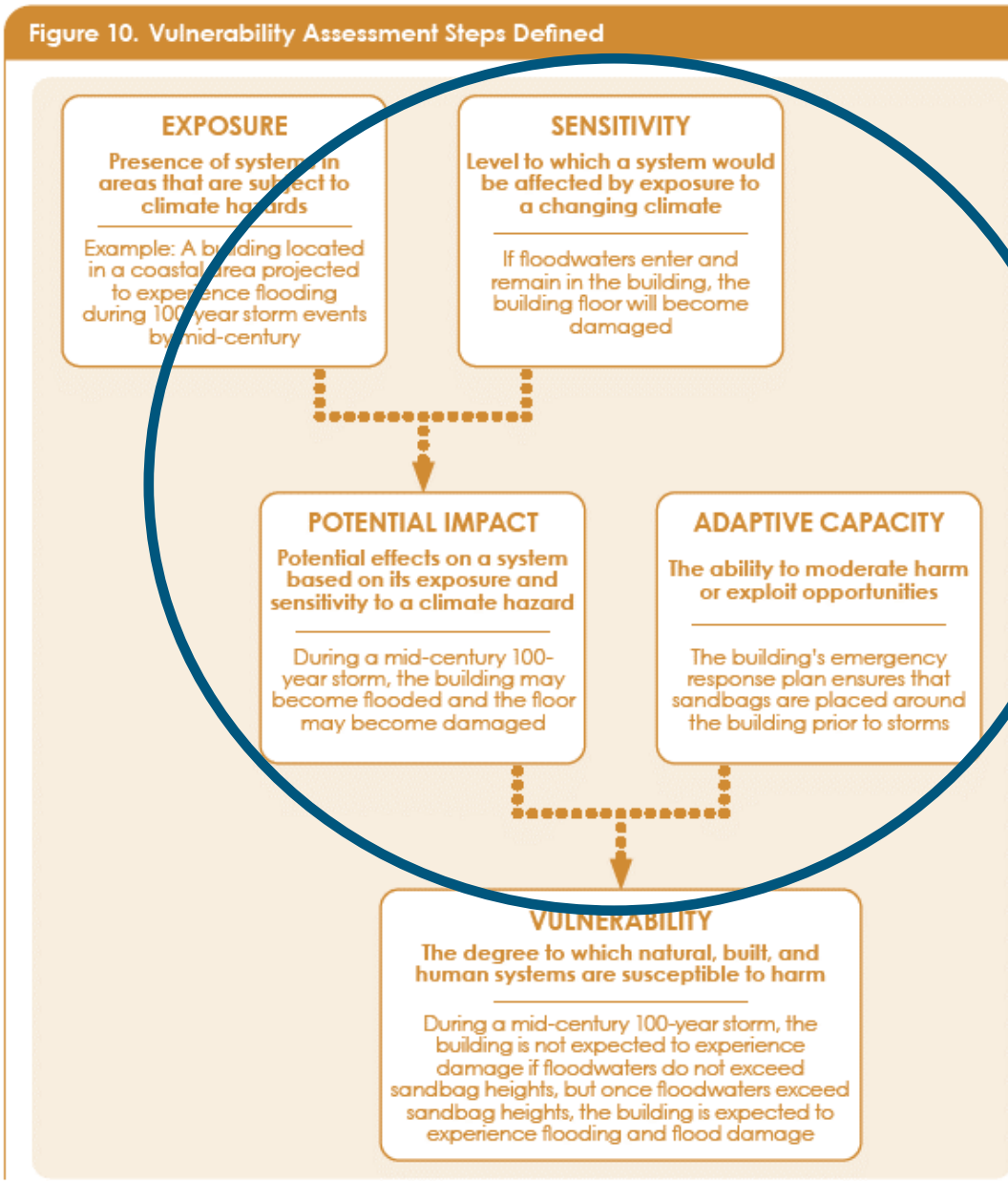
Climate Impact Shared Risk Analysis



Countywide OneWatershed Infrastructure Risk Exposure



OneWatershed Framework – Watershed Scale Application



Community Vulnerability Assessment



Watershed Scale Risk Exposure



Community Prioritized Vulnerable OneWatershed Infrastructure



Community-led OneWatershed Climate Resilience Project, Program, and Policy Selection

Revised Draft Memorandum

Date: June 3, 2024
To: OneWatershed Project Technical Advisory Committee and Equity Priority Community Workgroup
Copies to: Reid Bogert, C/CAG, OneWatershed Project Management Team
From: Kelly Havens, Principal, and Megan Otto, Principal, Geosyntec Consultants
Subject: OneWatershed Framework Development Approach Memorandum
Geosyntec Project Number: CWR0888

1. OBJECTIVE OF MEMORANDUM

In 2023, the City/County Association of Governments of San Mateo County (C/CAG) received a California Integrated Climate Adaptation and Resilience Program (ICARP) Adaptation Planning Grant Program grant to develop and pilot the OneWatershed Framework, an equitable climate adaptation approach focused on integrated watershed management.

Watershed related climate risks in San Mateo County include flooding due to sea level rise and extreme precipitation, water supply stress due to hydrologic drought, emergent groundwater, and urban heat. Underserved and vulnerable communities in San Mateo County are at disproportionate risk of climate impacts.

In collaboration with the OneWatershed Project partners, C/CAG is developing the OneWatershed Framework as a method to assess the regional and shared-risk of climate change to water infrastructure and resources (sewer, water, and stormwater) and develop opportunities to build adaptive capacity to climate impacts for the most vulnerable communities. The OneWatershed Framework is intended to define a collaborative structure that can be used on a longer-term basis to advance equitable watershed-based climate resilience in San Mateo County. The OneWatershed Framework Report, developed through the ICARP grant funding by the end of 2024, will conceptually define the goals, processes, data analyses, and stakeholder communication/outreach needs that can be used to understand the shared risk of climate impacts for water infrastructure at the watershed scale and develop and advance climate resilience projects that target those impacts. The Report will be developed with input from the OneWatershed Project Technical Advisory and Equity Priority Committee.

The approach presented in the OneWatershed Framework Report will be piloted in the San Bruno Creek Watershed and used to develop the San Bruno Creek Community-Led OneWatershed Climate Resilience Plan.

Approach Memo

- Defines the objective of the OneWatershed Framework –
 - “method to assess the regional and shared-risk of climate change to water infrastructure and resources (sewer, water, and stormwater) and develop opportunities to build adaptive capacity to climate impacts for the most vulnerable communities.”
- Introduces the data used to guide development of the OneWatershed Framework
 - References Data Inventory and Web Viewer
- Lists the Guidance and Plans that will be reviewed/referenced to inform development of the OneWatershed Framework
 - Focused on those that are collaborative and developed to drive community-scale integrated resilience planning and implementation

Approach Memo

- Introduces the Community Vulnerability Assessment Approach
 - Delves more deeply into climate- and water-related impacts and concerns in the community through engagement with community members and the Climate Change Community Team
- Describes Next Steps towards developing the OneWatershed Framework assessment and Draft Report

Committee Input

- Solicit input from the Stormwater Committee on the overall project vision, data inventory development and OneWatershed Framework approach
- C/CAG staff plan to present the OneWatershed Framework development to the CMEQ Committee and C/CAG Board in the coming months and will also come back to the Committees in fall with the draft OneWatershed Framework Report



Item 9 – Regional Water Board Report



Item 10 – Executive Director’s Report



Item 11 – Member Reports



Item 12 – Adjourn