San Mateo Countywide Sustainable Streets Master Plan Update

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City/County Association of Governments of San Mateo County

Caltrans

C/CAG City/County Association of Governments of San Mateo County

SAN MATEO COUNTYWIDE Water Pollution Prevention Program
Clean Water. Healthy Community.

C/CAG Stormwater Committee
August 15, 2019

SB 1 Grant – San Mateo Countywide Sustainable Streets Master Plan

- Grant: $986,300 with $145,185 in local match
- Paradigm Environmental to lead
- Sustainable Streets Master Plan
  - Climate change precipitation and hydrology
  - Street-scale sustainable streets opportunities
  - Prioritization overlay with community priorities and climate risk criteria
- Green Infrastructure Plans, project concepts and tracking tool
- Grant timeline: Oct 2018 – Feb 2021

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Overall Project Goals

- High resolution drainage mapping – street-level detail
- Countywide Master Plan with prioritized street segments for adding GI
- Project concepts for pursuing implementation
- Tracking tool for progress over time
- Model Sustainable Streets policy
- Community engagement

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Fine-Scale Drainage Mapping

Goals

1. Understand street-scale drainage to catch basins
2. Identify and support prioritization of opportunities (catch basins at intersections/midblock, drainage areas)

Process

1. Assess and QA/QC catch basins from agencies
2. Perform high-resolution delineation of drainage areas associated with catch basins

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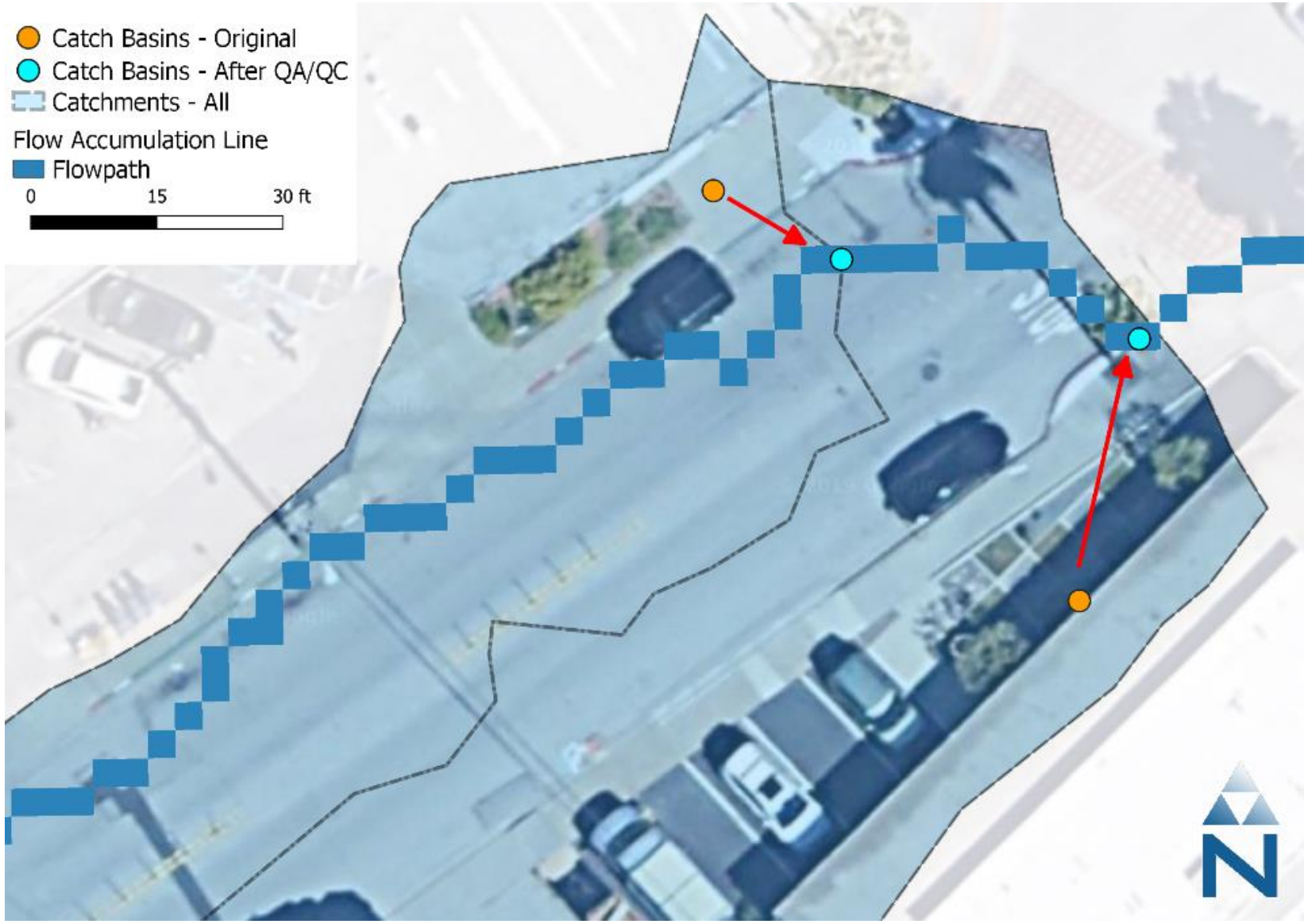
Fine-Scale Drainage Mapping



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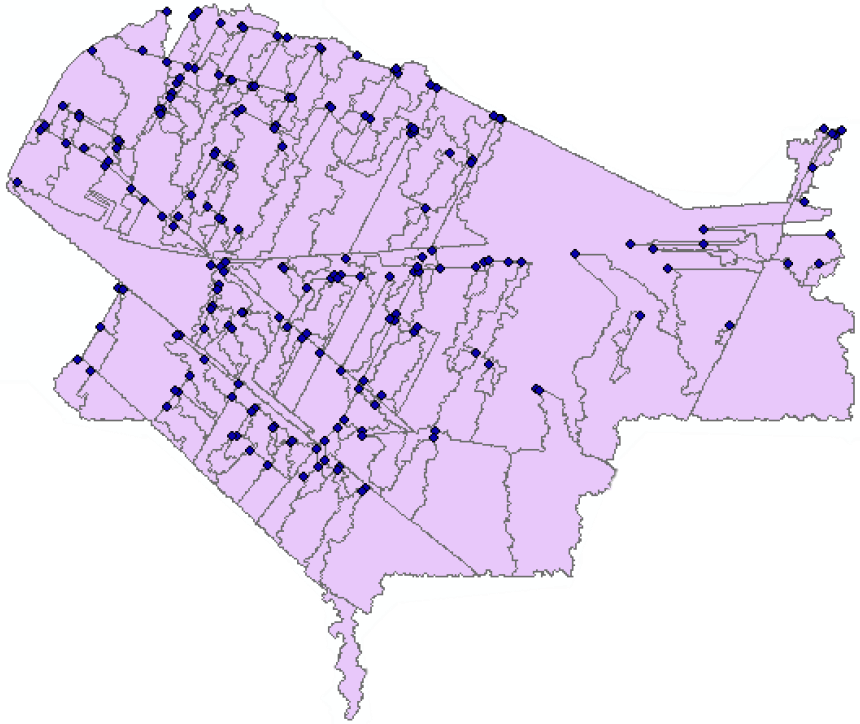
Fine-Scale Drainage Mapping

Before QA/AC

After QA/AC



North Fair Oaks
(unincorporated County)

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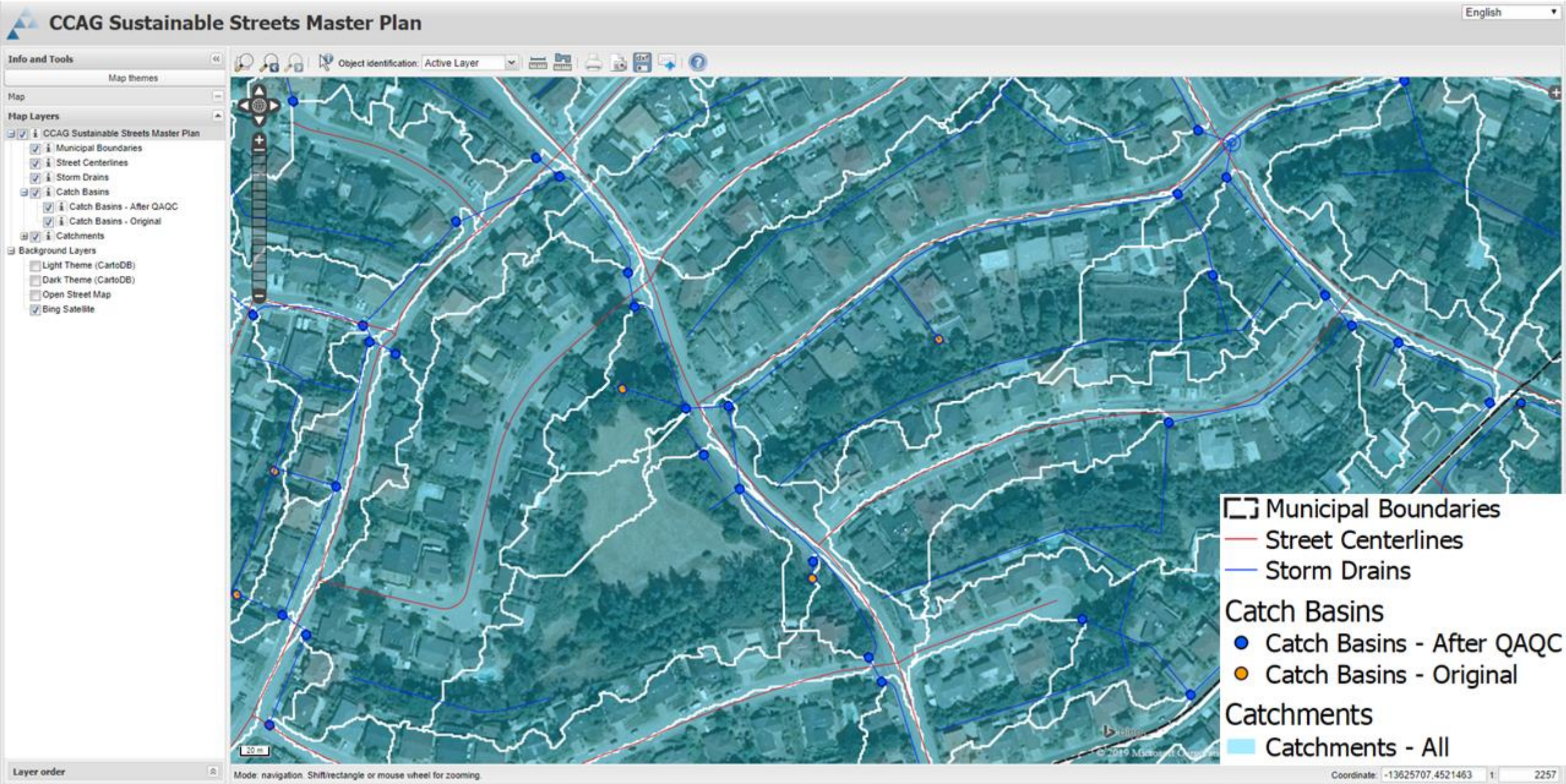
Web-Based Viewer



Fine-Scale Drainage Mapping

Requesting input from municipalities:

1. C/CAG shared the results of the analysis in June for initial exploration and review
2. Consideration of trash delineations that are field-validated
3. C/CAG will send an email requesting input on updated fine-scale drainage mapping with a comment/response table

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SSMP Project Prioritization

- Goals
  - Identify 100s of projects vs. 1000s from SRP
  - Link with sustainable streets drivers (funding mechanisms and timelines)
  - Consider climate change (impacts & resiliency)
- Process
  - Step 1 - Bottom-up (find project synergies)
  - Step 2 - Top-down (evaluate technical suitability)

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Green Streets Prioritization Matrix

	Points						Weight Factor
	0	1	2	3	4	5	
Street Type	Highway	--	Arterial	Collector	Alley	Local	--
Imperviousness (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	60 ≤ X < 80	80 ≤ X < 100	--
Hydrologic Soil Group	--	D	Unknown	C	B	A	--
Slope (%)	--	4 < X ≤ 5	3 < X ≤ 4	2 < X ≤ 3	1 < X ≤ 2	0 < X ≤ 1	--
Proximity to Flood-prone Channels (miles)	Not in sub-basin	3 < X	--	1 < X ≤ 3	--	X ≤ 1	2
Contains PCB Risk Areas	None	Potential High Interest	--	High Interest	--	--	--
Currently planned by City or co-located with other City project	No					Yes	2
“Safe Routes to School” program	No					Yes	2
Drains to TMDL waters	No					Yes	--
Above groundwater aquifer	No		Yes				--
Augments water supply	No	Yes					--
Water quality source control	No	Yes					--
Reestablishes natural hydrology	No	Yes					--
Creates or enhances habitat	No	Yes					--
Community enhancement	No	Yes					--

San Mateo County Project Prioritization

English

Info and Tools

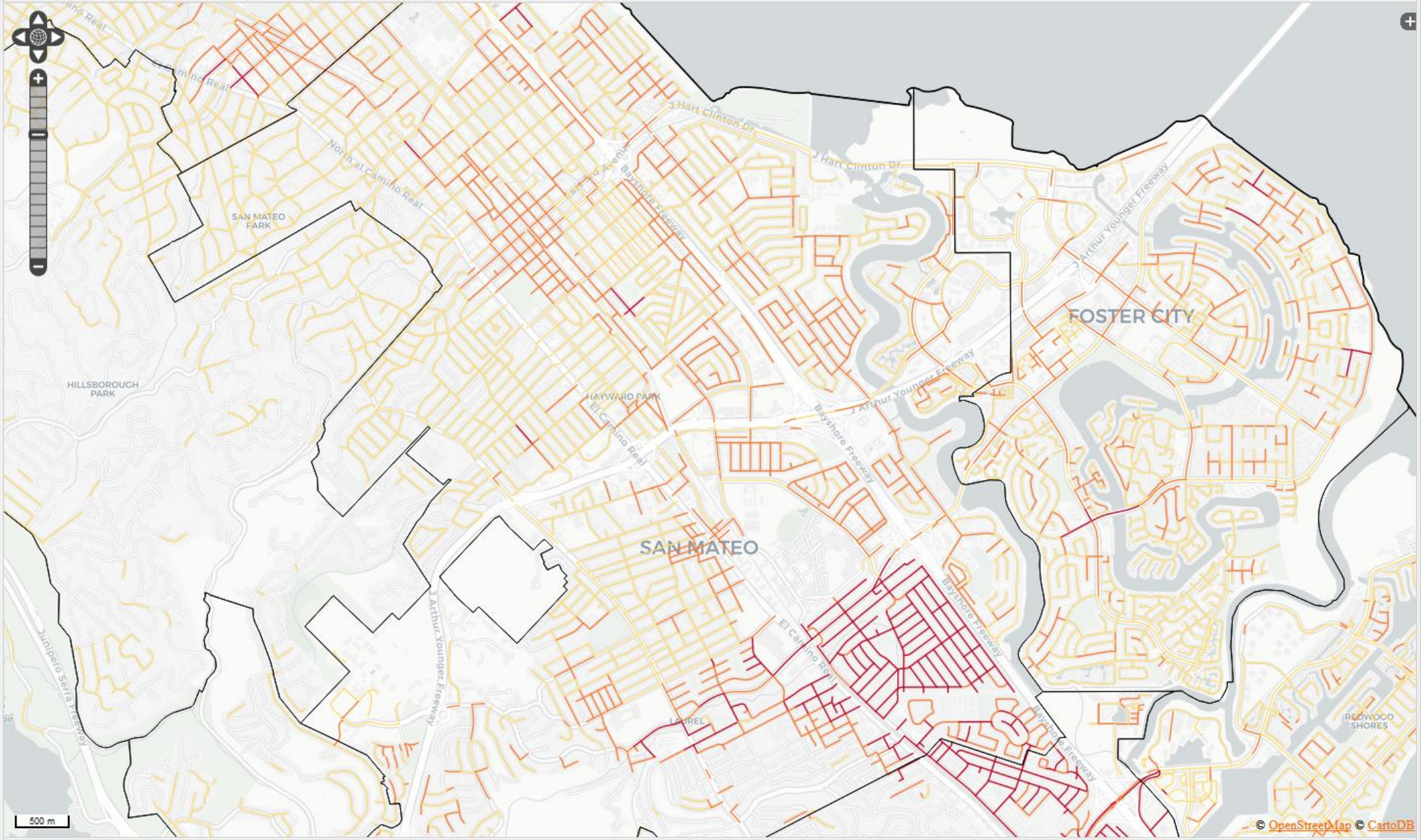
Map

Map Layers

- San Mateo County Project Prioritizati
  - County Boundary
  - City Boundaries
  - Implemented GI Projects
  - Flood Resiliency Plan Projects
  - Flood Prone Streams
  - Storm Drains
  - LID Projects Prioritized
  - Green Streets prioritized
  - Regional Projects Prioritized
  - Erosion Hazard (Yr 2100)
  - Regional Project Drainage Areas
  - Sea Level Rise 100
  - Sea Level Rise 200
  - FEMA 100-yr Flood Plain
  - Storm Drain Catchments
  - Groundwater Basins
  - Watersheds of Flood Prone Strea
- Background Layers
  - Light Theme (CartoDB)
  - Dark Theme (CartoDB)
  - Open Street Map
  - Google Satellite
  - Google Map

Layer order

Object identification: Active Layer



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Step 1 – Project Synergies

- Catalogue priority areas and planned transportation/stormwater improvements
  - Project extents (drainage area, linear blocks)
  - Project type (Sustainable Streets category, GI type)
  - Project timing (0-5, 5-10, 10-20 yrs)
  - Implementation Mechanism (co-located projects, funding sources)

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Proposed Sustainable Street Categories

Sustainable Street Project Category	Relative Scope	Transportation Design Elements	Stormwater Design Elements	Identification	Project Type/Driver	Funding
Bike/Ped Safety Improvements	$	Cross-walks, curb extensions, pedestrian refuges	Stormwater curb extension	Safe Routes to School, Bike/Ped Plan, General Plans, Circulation Element Plans	Safe Routes to School, Bike/Ped Safety Improvement, Sidewalk Improvement, Safe Routes to Transit, Traffic Calming Corridor	Capital Budget, Caltrans Active Transportation Program Grants (ATP) - Safe Routes to School
Development Frontage Improvements	$$[1]	Street trees, sidewalks	Tree wells, Stormwater planter	Priority Development Areas, C3 Redevelopment	Street Frontage Improvements	Private, AHSC
Connectivity Improvements	$$-$$$	Bike lanes, extended medians, cycle tracks	Green gutter, bioretention swale	Bike/Ped Plans, General Plans, Circulation Element Plans, Transportation Improvement Plans	First/Last Mile, Bike Boulevard, Class IV Bicycle Facility, Safe Route to Transit, Transit Priority Corridor, Complete Street, Gap Closure Project,	Capital Budget, Caltrans ATP, Measure A, M, W, OBAG, AHSC, HSIP, TIGER
Stormwater Capture Improvements	$$$	Structural Rehabilitation, road reconstruction	Pervious pavement, infiltration system, bioretention	Sustainable Streets Policy, Pavement Condition Index, Green Infrastructure Plans	Water Recharge/Resliency, Green Street, Green Alleys, Complete Street	Capital Budget, EPA San Francisco Bay Water Quality Improvement Fund, CNRA Urban Greening Grant
Complete Street Improvements	$$$$	Street trees, seating, lighting, sidewalk widening, transit, and bike/ped improvements	Stormwater planter, curb extension, sw tree, pervious paving	Major Utility CIPs, Streetscape Prioritization Plans, Transit Authority Projects	Main Street, Complete Street, Corridor Beautification, Streetscape,	Capital Budget, CNRA Urban Greening Grant

Step 2 – Technical Suitability & Prioritization

- Evaluate technical suitability and co-benefits of catalogued priority areas and planned projects to rank opportunities
  - **Stormwater Performance** (spatial effectiveness, hydrology, site constraints)
  - **Weighted co-benefits** (synergies with priority areas and planned projects, RAA outputs, climate change analysis, catch basin drainage areas, StreetSaver data, vulnerable communities)

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Prioritization Criteria Per SS Category: Connectivity Improvements

- **Project Identification** – Overlap with bike and corridor projects + high opportunity score
- **Project Extents** – Extent of co-located project, DMA from updated model
- **Project Priority** – Co-located project timing + Total DMA
- **Funding Sources** – Transit, etc.
- **GI Design Elements** – Green gutter, swales, etc.
- **Precedent Examples** – Carolan Ave, Delaware Ave

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Connectivity (Bike/Linear) Improvements

Community Engagement

- Developed Community Engagement Strategy
- Community Stakeholder & Engagement Meetings
  - Phase 1 – Pop Ups introduce the community to Sustainable Streets
  - Phase 2 – Pop Ups to gather Sustainable Streets priorities
  - Phase 3 – Walk & Talks on pilot concept design corridors
  - Phase 4 – Workshop on Draft Plan

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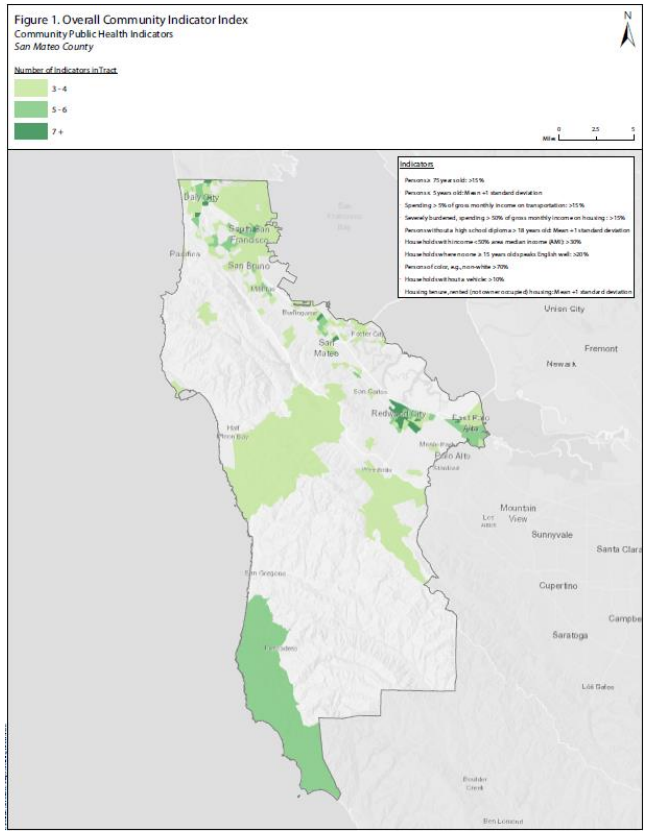
Community Engagement

Community Public Health Indicators (County SB 1 Grant):

- Age
- % income on transportation/housing
- Education
- Income level
- Language limitations
- Persons of color
- Lacking vehicle
- Housing stability



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Climate Adaptation Risk Analysis on Local Transportation Network

- Goals
  - Quantify runoff with respect to roadway network under downscaled climate change scenarios
  - Quantify benefit of planned GI for water quality, is more needed?
- Process
  - Utilize existing countywide hydrology model
  - Build off County's Adaptation grant

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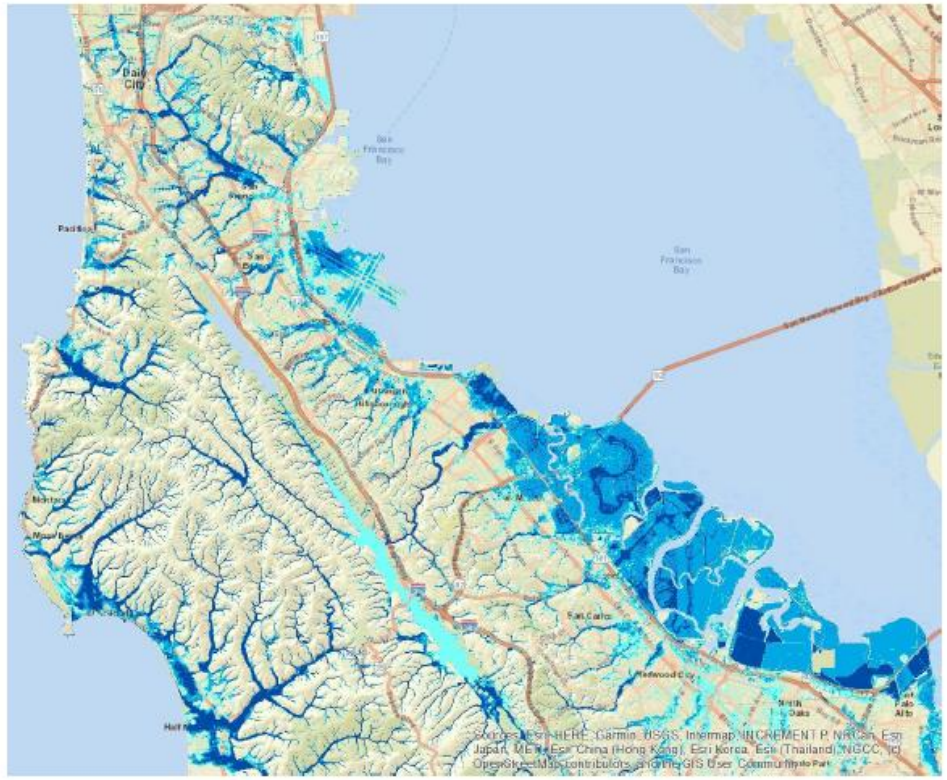
CLIMATE READY
SAN MATEO COUNTY

COUNTYWIDE RESULTS FOR 2030 STORMS

2030 Minor Storm

2030 Major Storm



County Precipitation Climate Change Flooding Model

<u>County OOS Requesting input from municipalities:</u>

1. C/CAG will forward methodology memo for input from municipalities on behalf of OOS
2. C/CAG is conducting its own climate analysis for the SSMP, but may benefit from this model

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Web-based Sustainable Streets Project Implementation Mapping and Tracking Tool

- Goals
  - Develop mapping and tracking tool that can become publicly available
  - Dashboards showing progress over time
  - Show project locations, benefits

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What are we Tracking?

- Inventory of GI
- Area treated by GI
- Volume of stormwater managed by GI
- Progress toward implementation goals

(with consideration of climate change)

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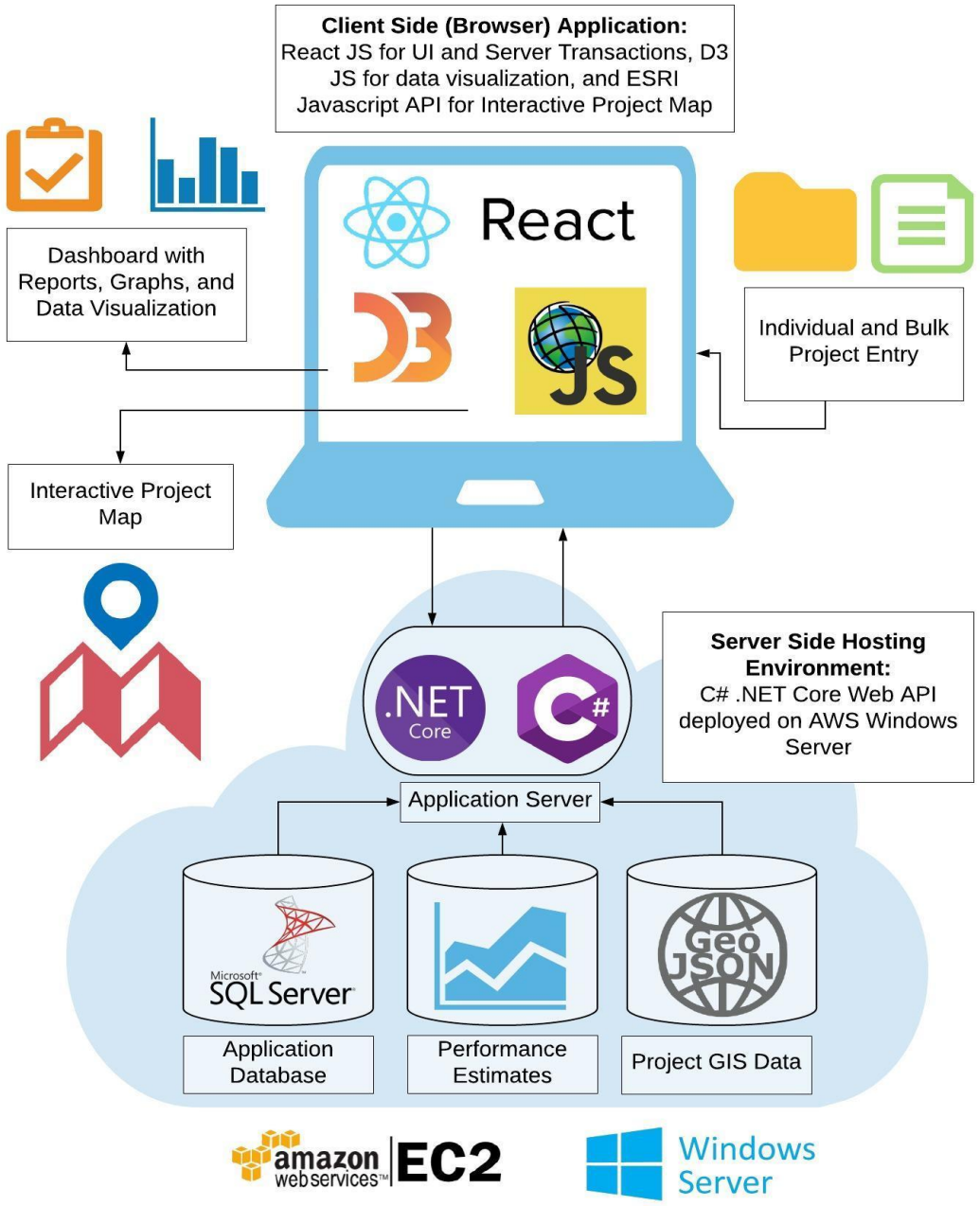
GI Tracking Tool



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GI Tracking Tool

Requesting input from municipalities:

1. C/CAG will send link to the preliminary mapping and tracking tool
2. Various forums for providing input as tool is developed, including TAC, SAC, NDS/GI Committee

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Technical Advisory Committee

- Additional to Stakeholder Advisory Committee - input especially on prioritization process
- Bi-monthly meetings on project deliverables and updates
- Ideally stormwater and transportation staff
- 7/21 jurisdictions currently

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FY 19/20 Scope

- Additional grant funds on the table
- Scope enhancement could include concepts, tracking tool, SSMP
- Paradigm to complete work by end of FY 19/20

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Follow-up with Stormwater Committee

- C/CAG will send follow-up emails:
  - Fine-scale Drainage Mapping with response to comments table
  - Link to preliminary Project Tracking Tool
  - Memo from County OOS on climate change precipitation modeling and link to web-viewer of results

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