Street Sweeping Route Revisions and Pilot Program

September 12, 2024

Heidi Niggemeyer
NPDES Program Manager

CLEAN WATER SALINAS

Agenda

- Importance of street sweeping
- Revisions to current sweeping routes
  - Rationale for street sweeping
  - Process for revising routes
  - Outcomes
- Pilot area for parking restrictions
  - Selection criteria
  - Costs for signage

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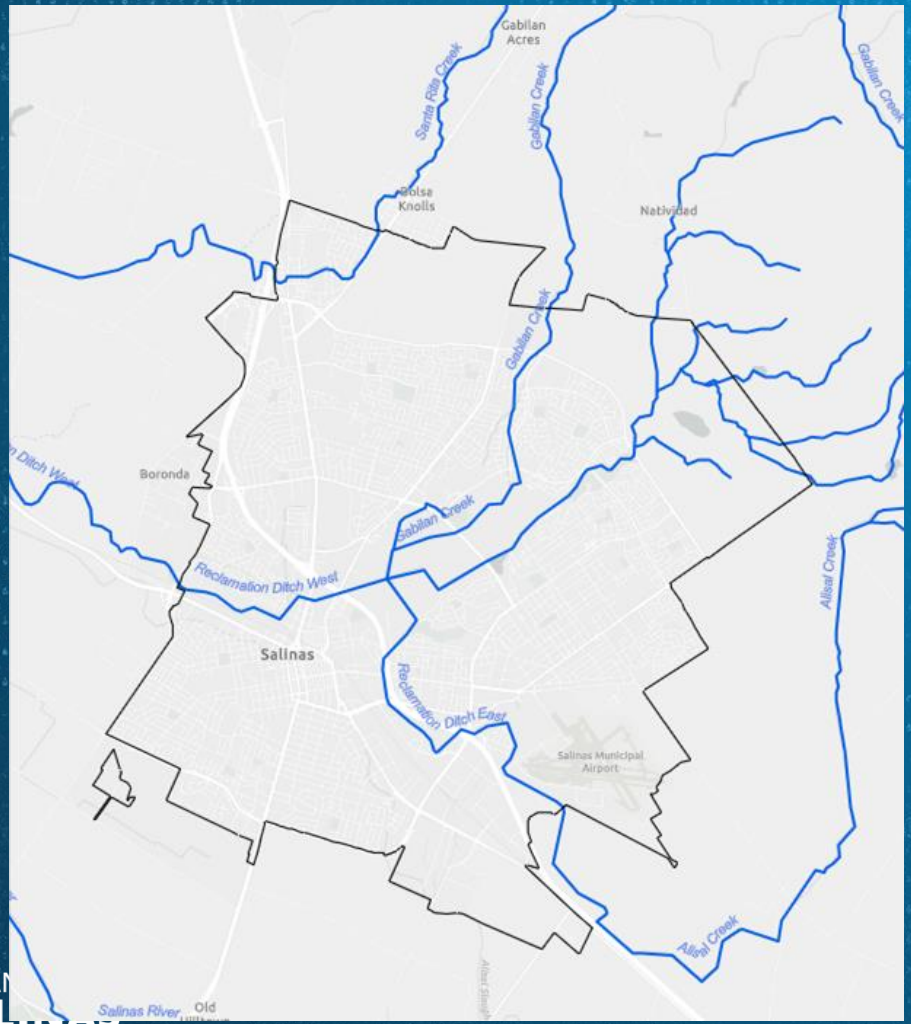

15 miles

of streams in the City of Salinas

100%

are polluted per EPA standards

TMDLs

Each stream is listed and has multiple Total Maximum Daily Loads

NPDES MS4 Stormwater Permit

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

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NPDES MS4 Stormwater Permit Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

895 Aerovista Place, Suite 101, California 95670-6114
Phone (805) 549-3147 • Fax (805) 543-0397
Central Coast Water Board Website

ORDER R3-2019-0073
NPDES NO. CA0049981

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR CITY OF SALINAS MUNICIPAL STORMWATER DISCHARGES

The municipal discharges of stormwater and non-stormwater by the City of Salinas from all municipal separate storm sewer system (MS4) discharge points within the City of Salinas are subject to waste discharge requirements as set forth in this Order:

Discharger – City of Salinas

Name of Facility – City of Salinas MS4

Facility Address – 200 Lincoln Avenue, Salinas, CA 93901, Monterey County

MS4 Classification – The United States Environmental Protection Agency (USEPA) and the Central Coast Regional Water Quality Control Board (Central Coast Water Board) have classified the City of Salinas MS4 as a medium MS4 pursuant to 40 Code of Federal Regulations section 122.2.

Order Adoption Date – September 20, 2019

Order Effective Date – October 1, 2019

Order Expiration Date – September 30, 2024

Report of Waste Discharge File Date – The Discharger shall file a Report of Waste Discharge as an application for reissuance of waste discharge requirements in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than 180 days prior to the Order expiration date.

Terms and Conditions for Expired Order – In accordance with section 2235.4 of Title 23 of the California Code of Regulations, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations regarding continuation of expired permits are complied with.

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NPDES MS4 Stormwater Permit Requirements

ii) Parking restrictions – By the end of Year 3, the Permittee shall revise and commence implementation of its parking restriction strategy, including parking restrictions and public outreach, to ensure that street sweepers can access and sweep gutters for all High and Medium Priority Streets and to increase the effectiveness of sweeping operations for the entire roadway width. By the end of Year 5, the Permittee shall complete implementation of the revised parking restrictions. The Permittee may propose an alternate strategy for reducing pollutants in areas with parked cars, so long as the Permittee can demonstrate the alternate strategy will result in an equivalent or greater reduction in pollutant loading.

***2022-2023 was Year 3, 2023-2024 is Year 5**

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Why street sweeping?

- Beautifies neighborhoods
- Very effective stormwater BMP
- Adaptive
- Helps the City to potentially meet water quality discharge requirements (TMDLs)

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The challenge:
only stormwater down the drain

Street sweeping timeline

2012: Existing sweeping program initiated

2018: Existing water quality monitoring sites established and trash assessments begun

2020: Clean Water Salinas website revisions made

2017/2021: Studies to determine curb access (areas for improvement)

2022: Sweeper truck debris data collection effort began

2023: Outreach efforts began, including event at Closter Park, regular blogs, social media posts

2023-2024: Refined analysis of the sweeping data, road debris condition, and road sediment quantity and constituents

2023-2024: Sweeping route revisions and cost estimates determined

2024: Approval of new routes, implementation of parking restrictions in pilot area

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Street sweeping is highly effective at removing pollutants BEFORE they enter the stormwater system

Total Debris Collected

2024

1,969.7 ▲ tons

2023

1,636.1 tons

Curb Miles Swept

2024

14,307.0 ▼ miles

2023

16,161.9 miles

Debris Collected per Mile

2024

0.14 ▲ tons/mile

2023

0.10 tons/mile

Average Curb Accessibility

2024

High ▼

2023

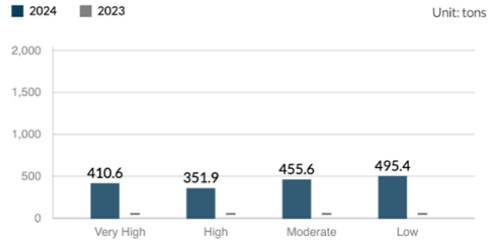
Very High

Top 5 Routes by Debris Collected Per Mile

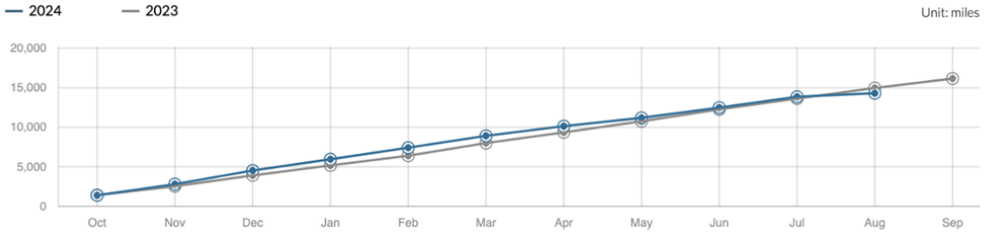
Unit: tons/mile

2024		2023	
▲ R_113_1F	0.31	R_113D_1T	0.66
▲ R_108_1W	0.21	R_113_1F	0.39
▲ R_119_2T	0.20	R_108_1W	0.12
▲ R_125_2F	0.19	R_111_1R	0.12
▲ R_109_1W	0.19	R_113D_1M	0.11

Debris Collected by Route Priority



Cumulative Total Miles Swept per Month



*10/01/2023 is the start of the focus reporting year. 09/30/2024 is the end of the focus reporting year.

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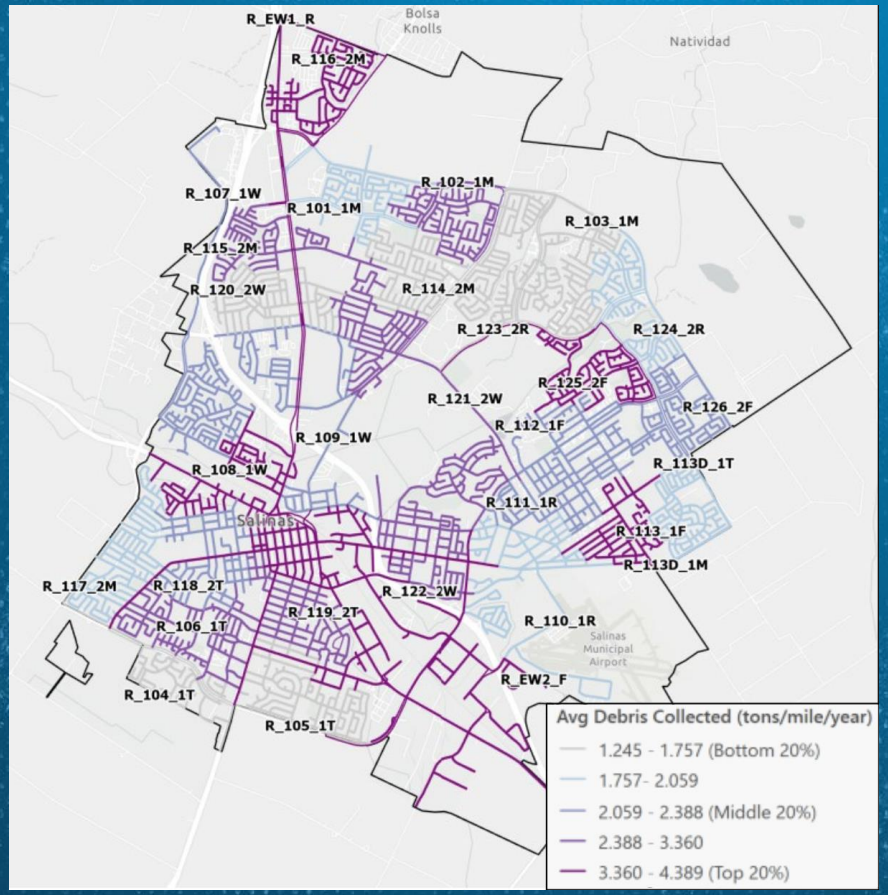
But sweeping isn't equally effective everywhere



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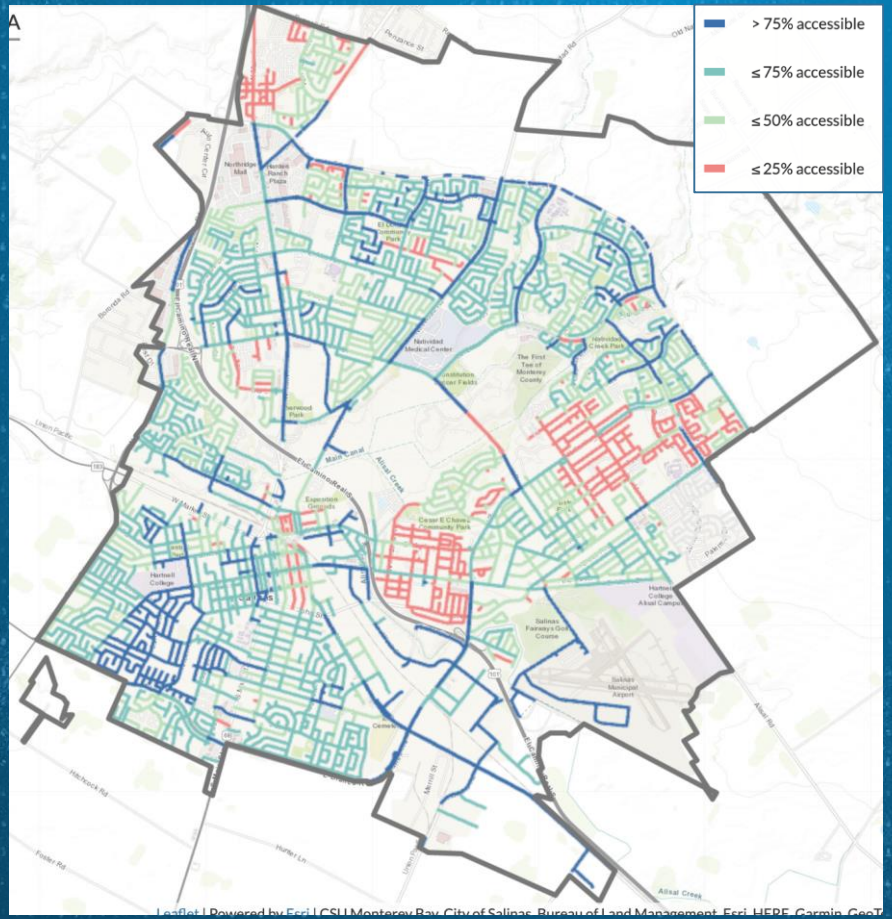
Curb access is a problem in several areas



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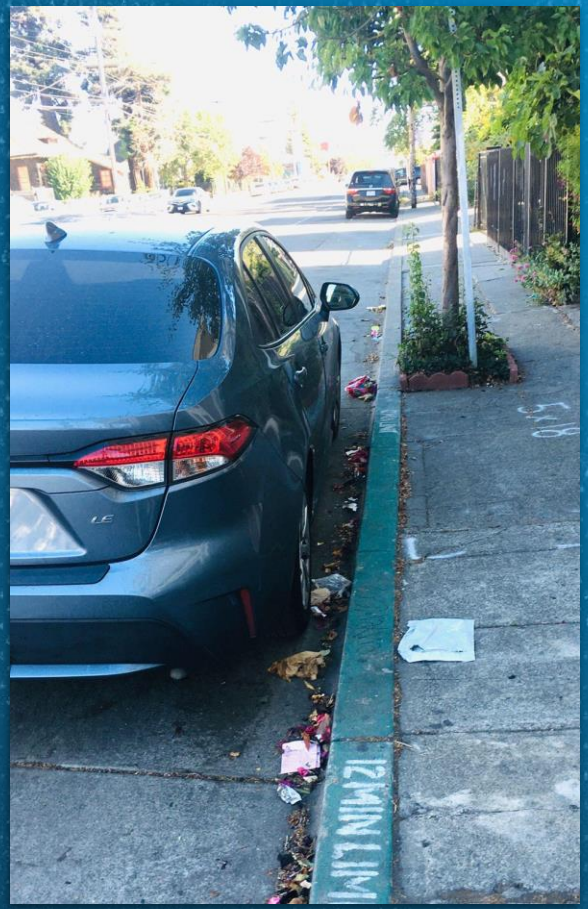

Pollutants accumulate at curb

Sweepers' goal is to reach the curb

Parked cars and other obstacles hinder that effort

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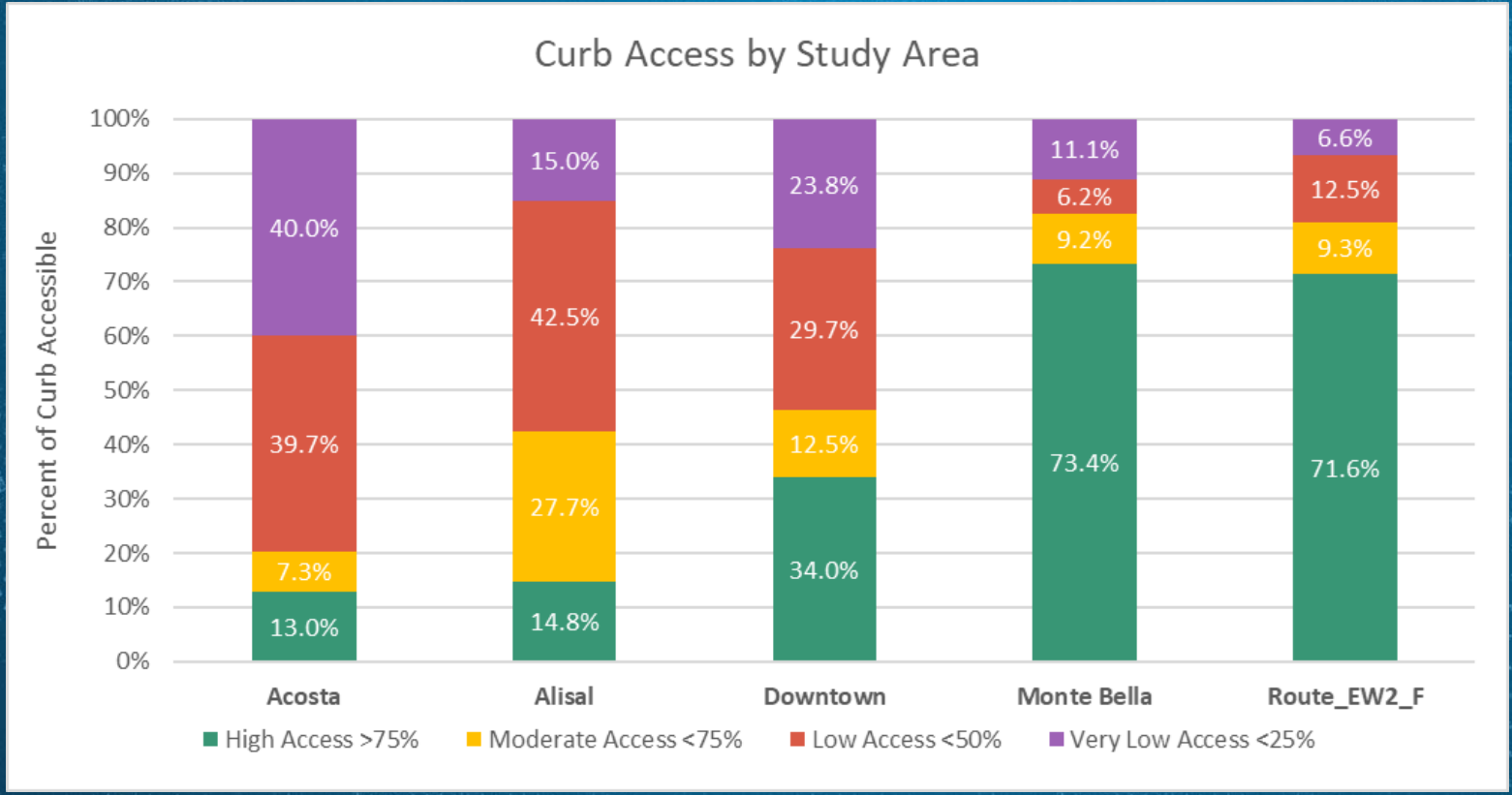

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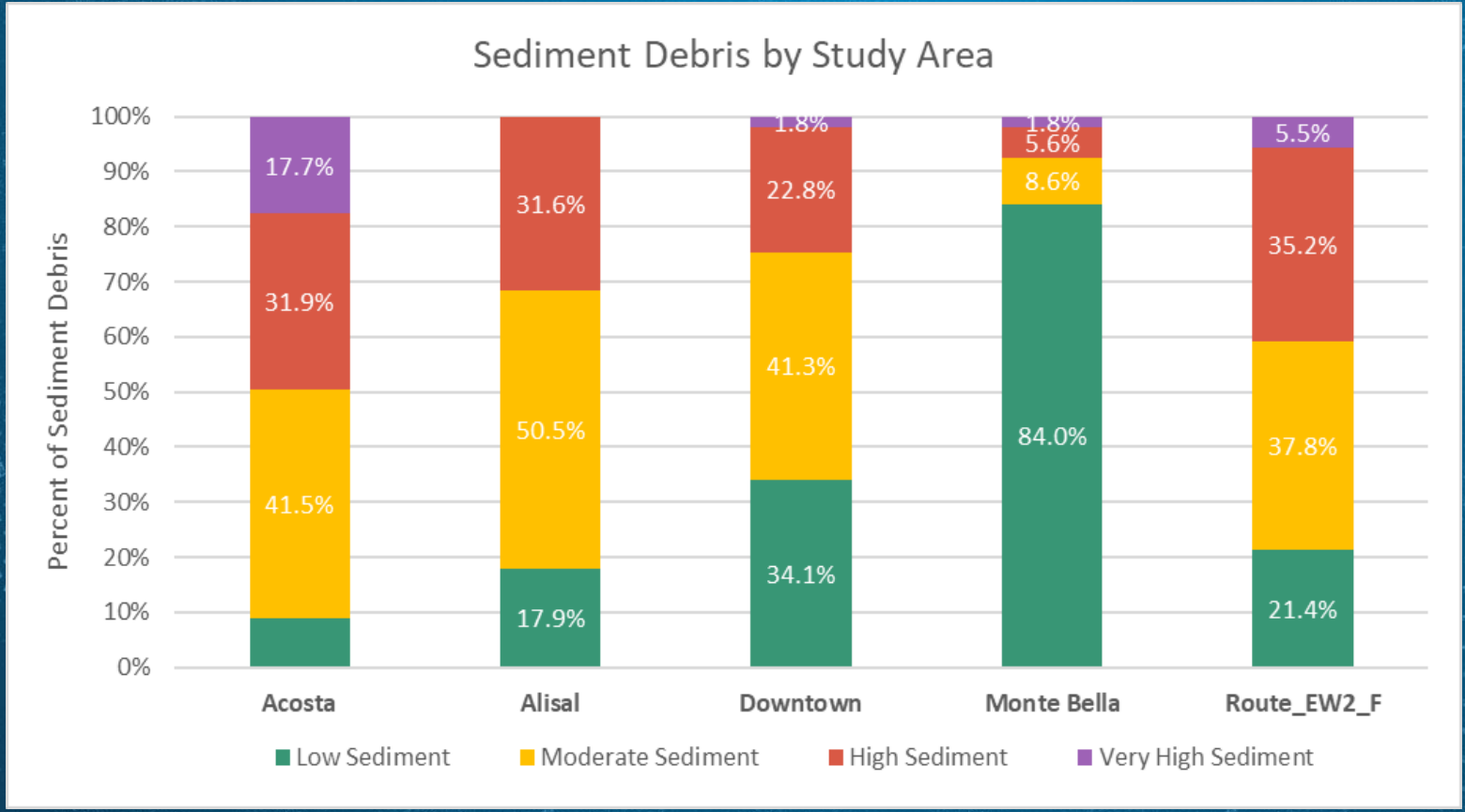

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Goals of Sweeping Revisions

- **Revise** sweeping routes to sweep opposing sides of the street on different days
- **Collect** data on sweeper effectiveness through drivers' data entry and road debris condition analyses
- **Establish** parking restrictions through a pilot program in a high priority area of the City to improve curb access for sweepers (test)
- **Leverage** long-term water quality monitoring station and road debris condition observations to see if impacts of sweeping can be measured
- **Build** awareness of actions residents can take, like moving their cars, to keep Salinas stormwater clean

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Revise sweeping routes

The City used RouteSmart software to develop routes, provide drivers with directions, and track sweepers.

Routing capabilities include:

- Generating geographically balanced and compact routes
- Creating routes to service opposite curbs on different days
- Modeling travel time between dump facilities and routes
- Calculating route metrics to determine efficiency

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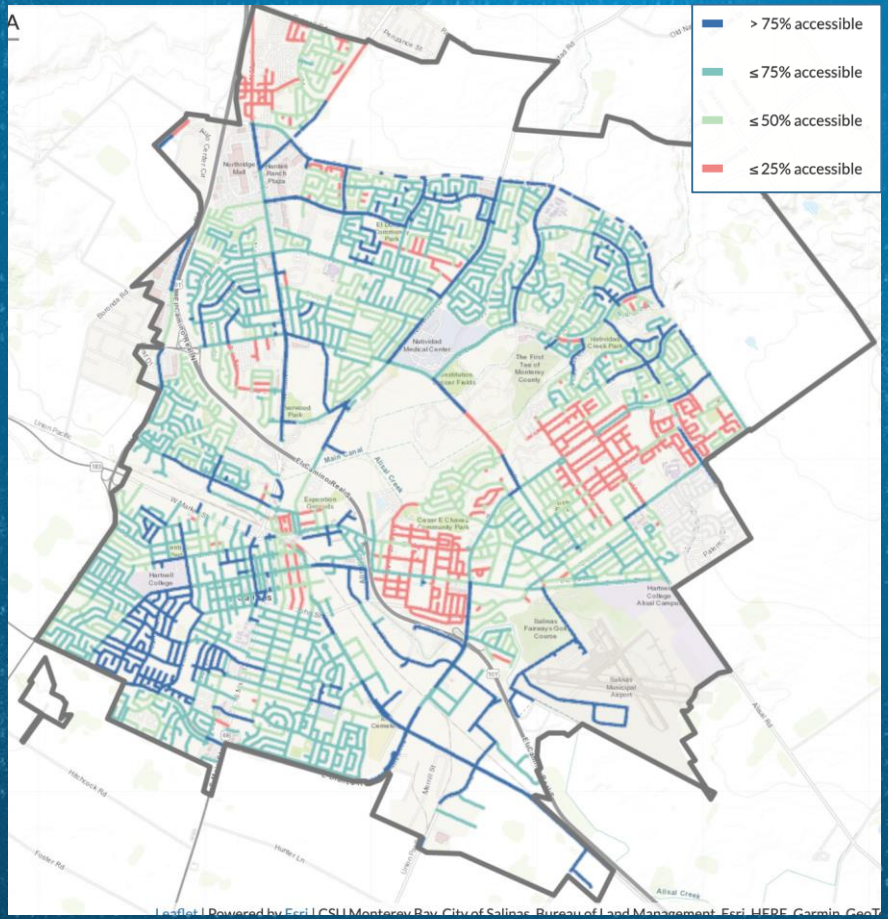
Collect curb accessibility - Sweeper entry



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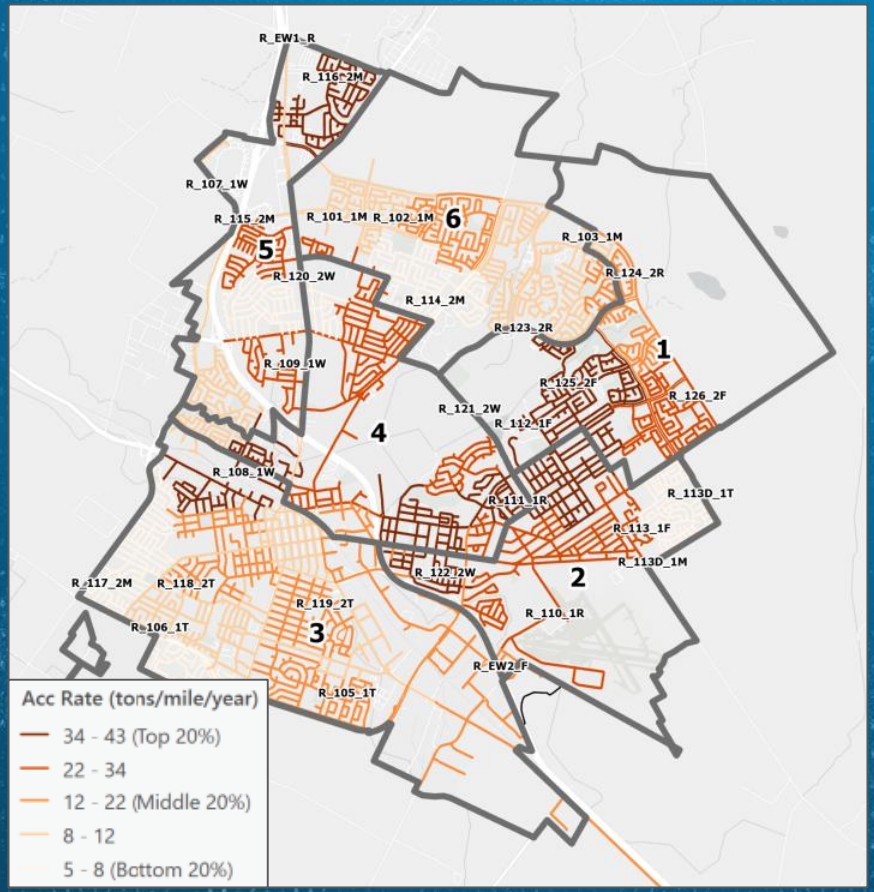
Collect road debris condition - visual assessments



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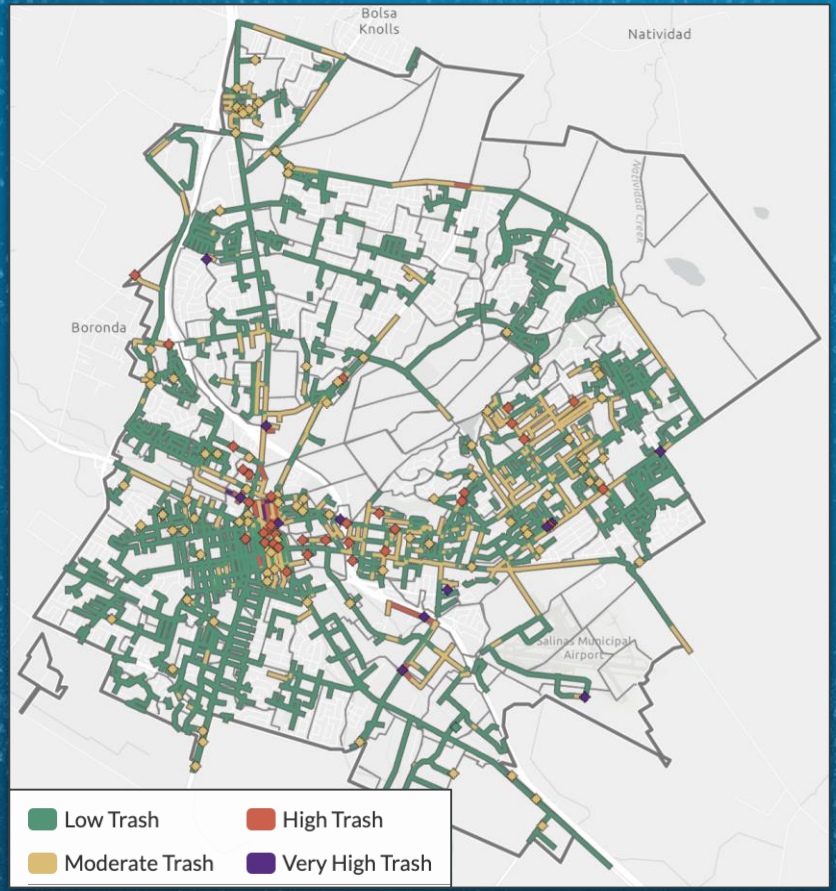
Collect trash condition -visual assessments



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Collect pollutant analyses - Sediment sampling

Sampling Location	Bifenthrin	Cyfluthrin	L-Cyhalothrin	Cypermethrin	Fenpropathrin (Danitol)	Esfenvalerate	Permethrin (cis+tran)
	ng/sq-ft	*ng/sq-ft*	*ng/sq-ft*	*ng/sq-ft*	*ng/sq-ft*	*ng/sq-ft*	*ng/sq-ft*
Downtown_COM_072523	16.828	ND	3.519	3.519	ND	ND	ND
EW2_F_CUL1_072523	33.318	2.066	**10.662**	2.532	0.733	**1.932**	**139.936**
Acosta_MFR_072523	**94.988**	**2.137**	3.503	**8.311**	**54.618**	ND	17.217
Alisal_Closter_OTH_072523	ND	ND	ND	ND	4.794	ND	ND
MonteBella_SFR_072523	ND	ND	ND	ND	ND	ND	ND

Acosta drainage area sediment contained some of the highest pesticide concentrations.

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Implement parking restrictions

Goals:

- Improved curb access
- Measurable improvements in road debris conditions and runoff water quality
- Minimal disruption to residents

Criteria:

- Low curb access
- High concentration of pollutants and trash on roads
- Located in monitoring station drainage so water quality impacts can be measured
- Narrow time interval needed for parking restrictions (looking at 4-hr intervals)

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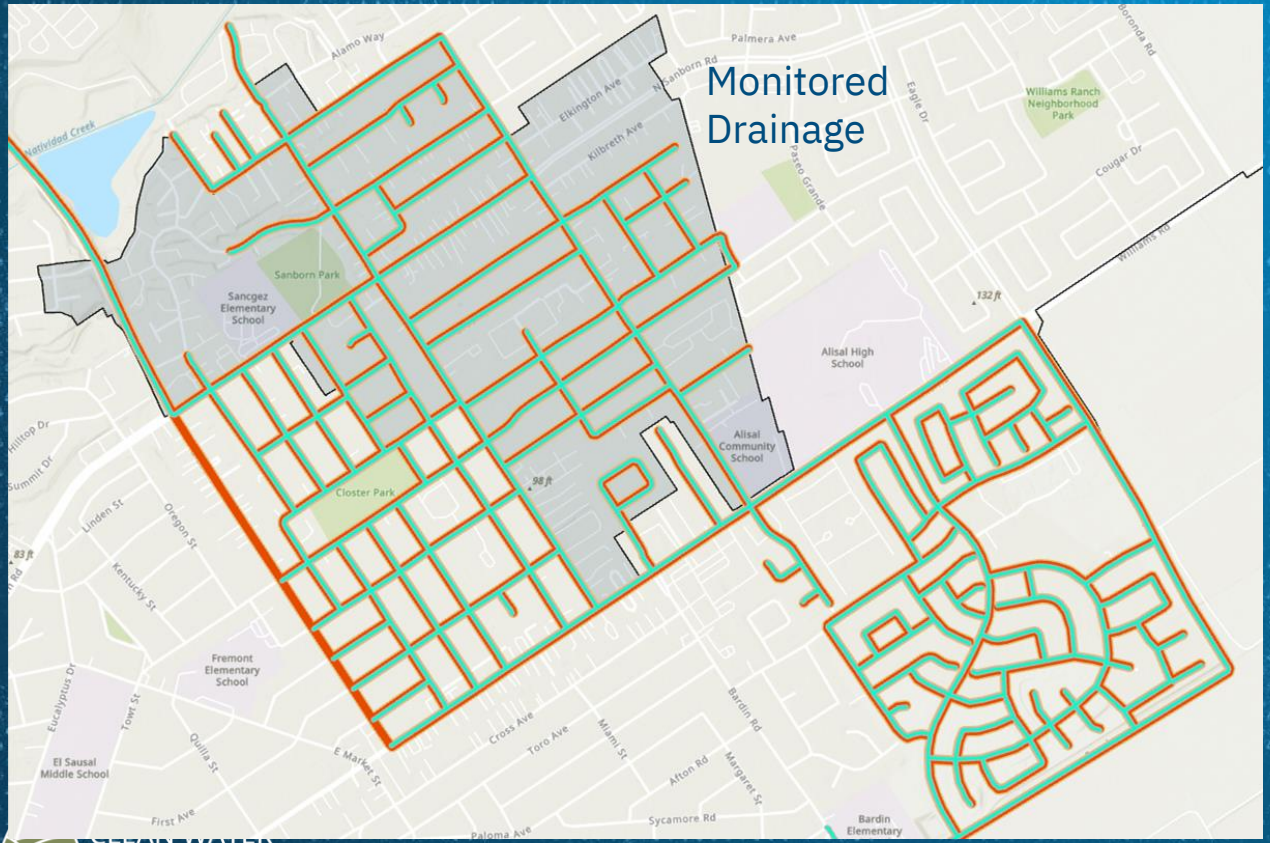
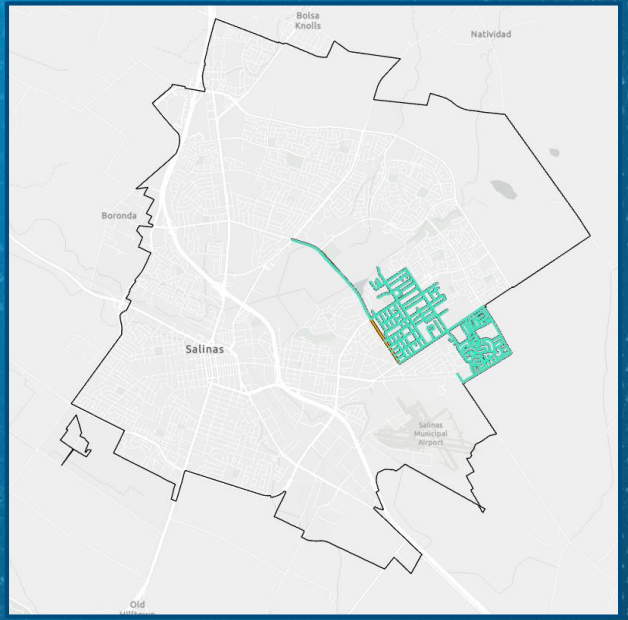
Pilot Routes: 121M and 121T





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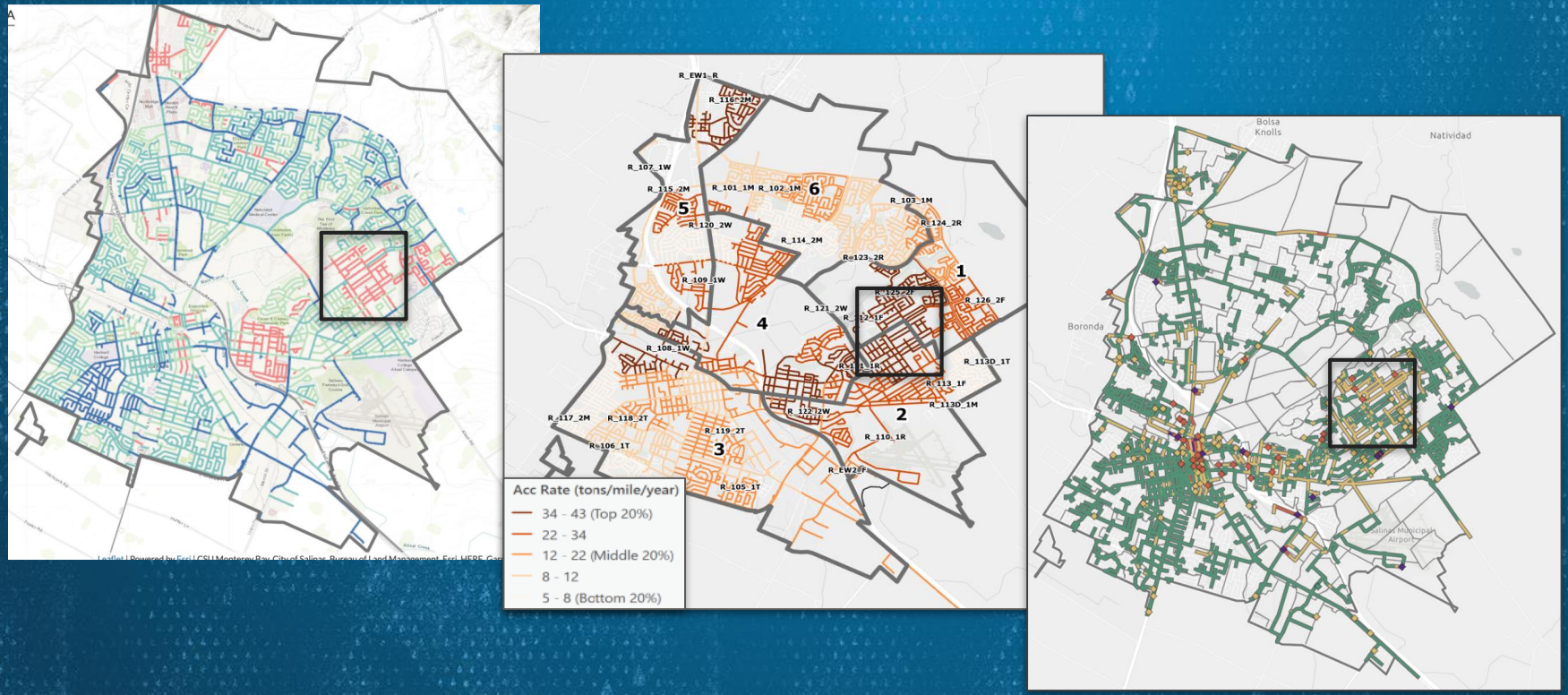
Road debris condition and curb access are poor



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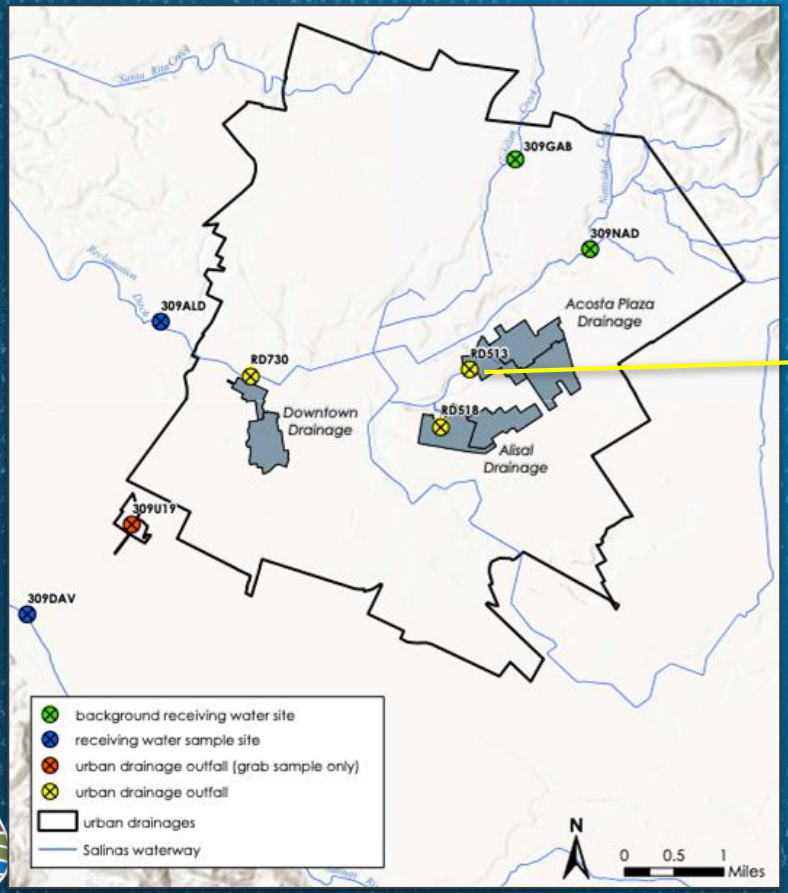
Water quality can be monitored



% of runoff samples that exceeded WQ objectives in WY 17-23

Pollutant	% exceeded
Fecal coliform	87%
Susp. sediment	36%
Turbidity	29%
Copper	2%
Orthophosphate	13%
Bifenthrin	88%
Cyfluthrin	58%

Time of parking restrictions is limited

For each part of the two pilot routes:

- Swept twice per month
- Window of parking restrictions will be 4 hours
- Only ticketing BEFORE or DURING sweeping, not after; warnings will initially be utilized

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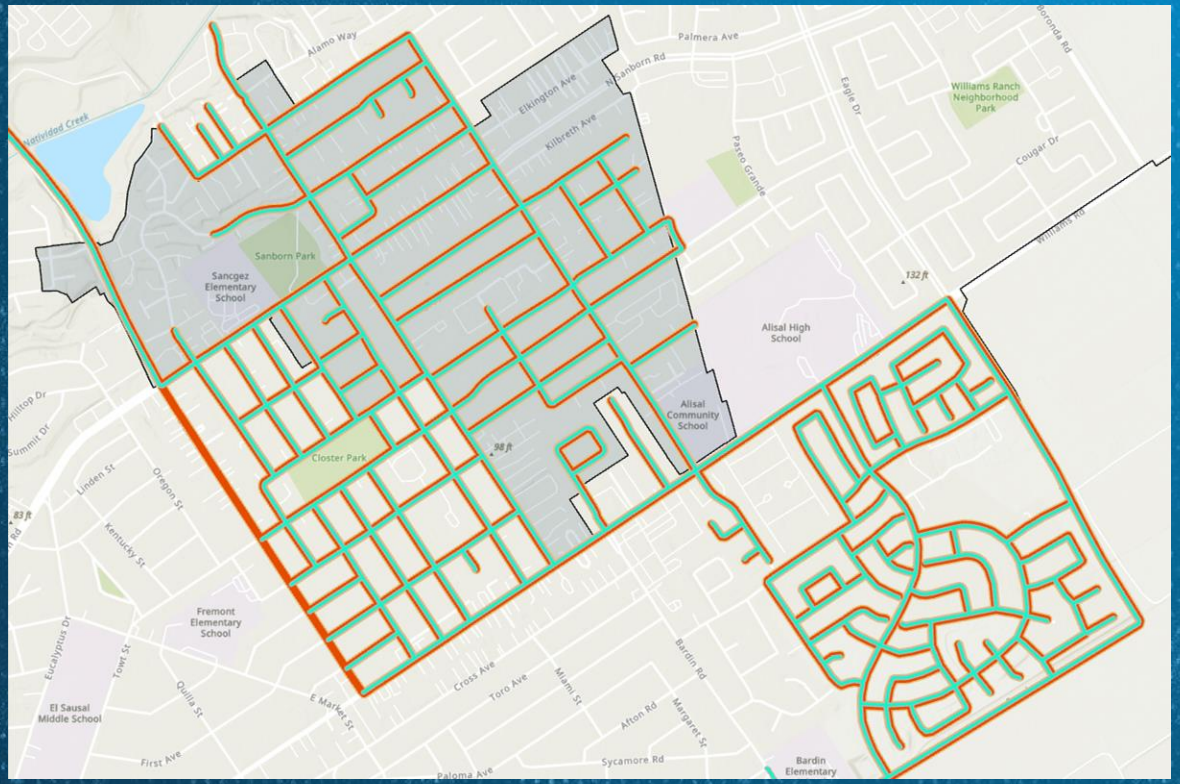
Cost estimate for signage* and routing equipment



# of Signs	667
Cost/Sign	$195
Cost of signs	$130,065
Installation cost	$369,425
Cost to sign pilot	**$499,490**
Equipment/software	**$15,100**
Total	**$514,590**

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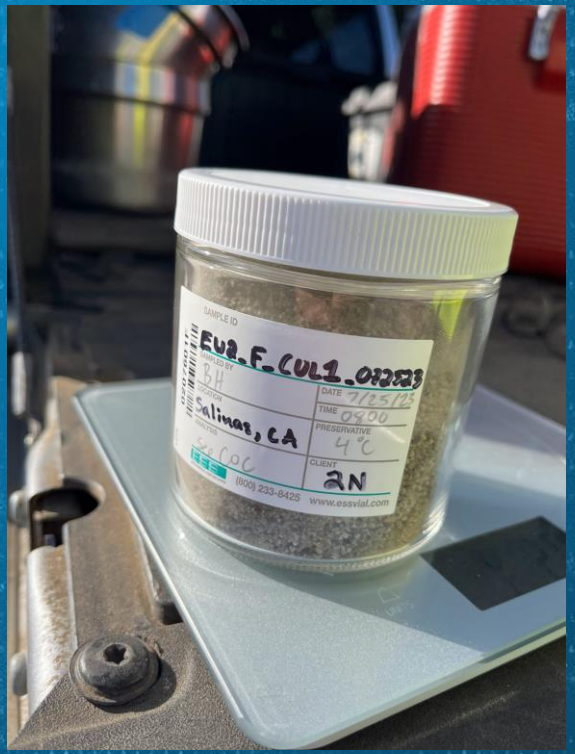
* Signage already exists in Monte Bella

Leverage monitoring data



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Build awareness

- Clean Water Salinas website
- In-person tabling and door knocking
- Social media outreach
- Blogging

Current Timing

- October - Routes approved by Council, money encumbered for signs
- November - Coordinate with Traffic to order signage and coordinate with Parking Enforcement and PD to establish enforcement protocols
- December - Signs installed
- January - Sweeping on new routes and pilot enforcement protocols begin

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Questions?

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