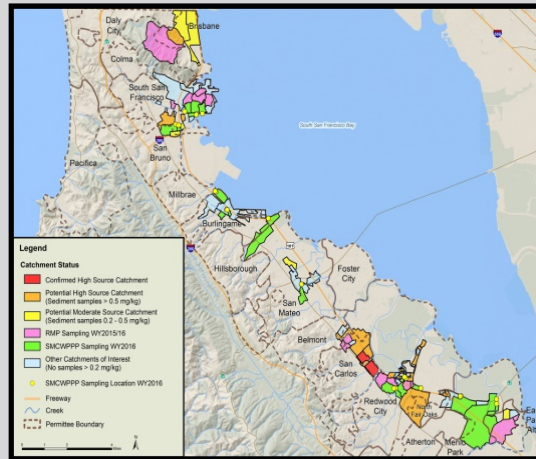


Reducing PCBs and Mercury Loads in Stormwater Runoff in San Mateo County



Jon Konnan - EOA, Inc.
C/CAG Stormwater Committee

November 21, 2019

Summary of Presentation Topics

Status of addressing PCBs in SM County stormwater runoff per MRP

- PCBs controls for stormwater
- Load reductions achieved to-date compared to MRP requirements
- Summary of source property ID work
- New long-term PCBs and mercury plan



PCBs Controls for Stormwater Runoff

Largest PCBs load reductions in SM County

1. Management of PCBs during building demolition (opportunistic)
2. Green infrastructure (not usually driven by PCBs)
3. Source property identification and referral (informed by monitoring data)
4. Trash controls (not driven by PCBs)



MRP Required Load Reductions for Stormwater

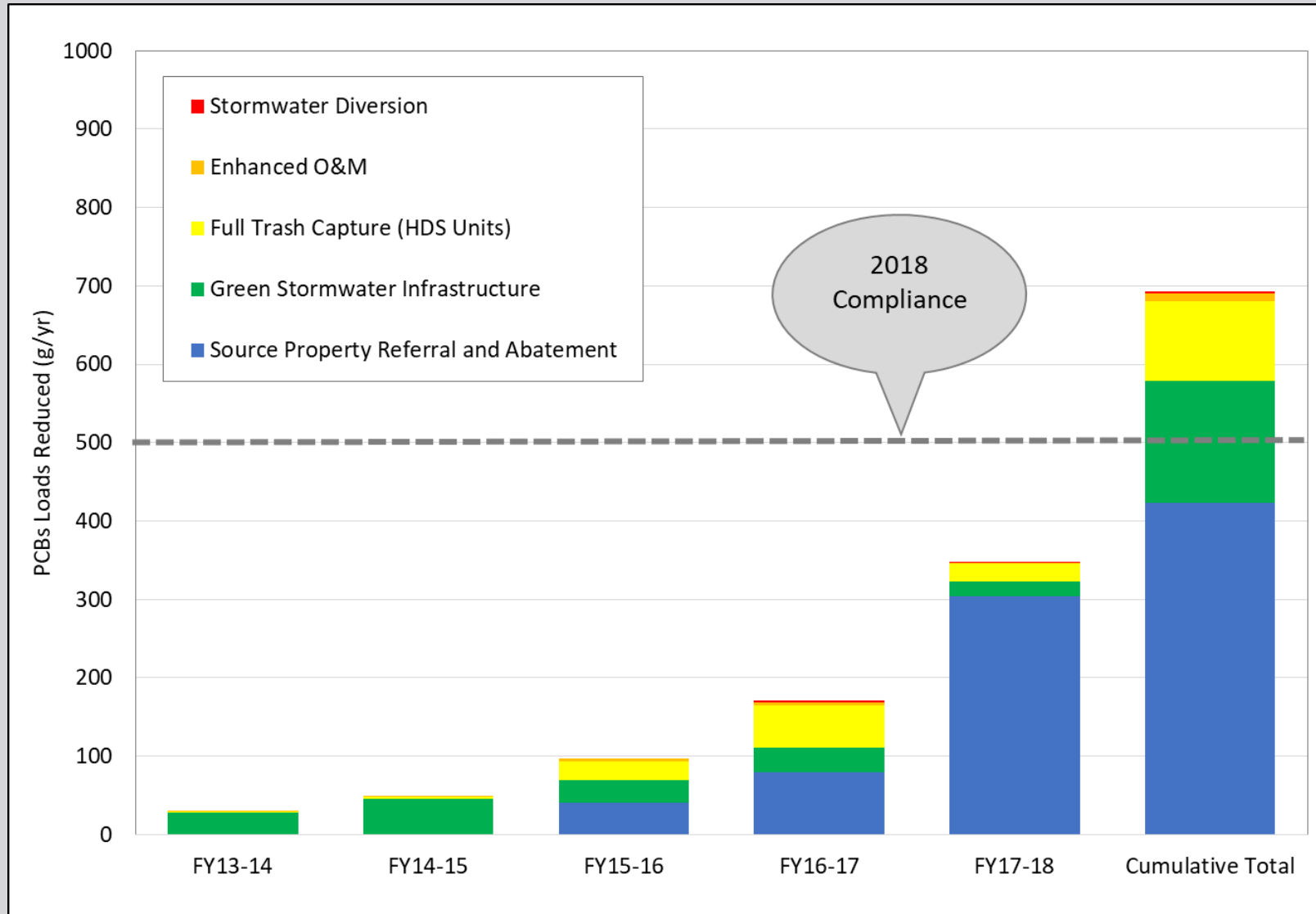
All MRP Permittees combined:

| PCBs (g/year) | | | Mercury (g/yr) |
|----------------------|----------------------|---------------------------------|---------------------------------|
| By June 2018 | By June 2020 | | By June 2020 |
| All Control Measures | All Control Measures | Green Stormwater Infrastructure | Green Stormwater Infrastructure |
| 500 | 3,000 | 120 | 48 |

SM County Permittees only combined:

| PCBs (g/year) | | | Mercury (g/yr) |
|----------------------|----------------------|---------------------------------|---------------------------------|
| By June 2018 | By June 2020 | | By June 2020 |
| All Control Measures | All Control Measures | Green Stormwater Infrastructure | Green Stormwater Infrastructure |
| 60 | 370 | 15 | 6 |

PCBs Load Reductions as of June 2018 (Regional)



PCBs Load Reductions as of June 2019 (Regional)

| County | DRAFT PCBs Loads Reduced (grams/year) | | |
|----------------------------------|---|------------------------------------|---------------------------|
| | Through June 2019 | MRP Requirement by June 2020 | Current Excess/Deficit |
| Alameda | 756 | 940 | -184 |
| Contra Costa | 593 | 560 | 33 |
| Santa Clara | 1,011 | 940 | 71 |
| San Mateo | 308 | 370 | -62 |
| Solano (rough estimate) | 130 | 190 | -60 |
| Total | 2,798 | 3,000 | -202 |

PCBs Load Reductions as of June 2019 (SM County)

| Control Measure Category | | PCBs Loads Reduced (grams/year) | | | | | | | Cumulative Load Reduced |
|---|--------------------------------------|---------------------------------|----------|----------|----------|-----------|-----------|------------|-------------------------|
| | | FY 13/14 | FY 14/15 | FY 15/16 | FY 16/17 | FY 17/18 | FY 18/19 | FY 19/20 | |
| Source Property Identification and Referral | Delta Star / Tiegel, San Carlos | | | | | | 15 | | 15 |
| | Bransten Road, San Carlos | | | | | | 5 | | 5 |
| GI and other Stormwater Treatment | Parcel-based GI/LID (C.3) | 12 | 4 | 5 | 3 | 11 | 4 | | 39 |
| | Green Streets and Regional Retrofits | 0.01 | 0.1 | 0.1 | 0.02 | 0.05 | 0.06 | | 0.3 |
| | Hydrodynamic Separators | | | | | 2 | 0.3 | | 2 |
| Enhanced O&M Measures | | | | | | | | | |
| Manage PCBs in Building Materials | | | | | | | | 247 | 247 |
| Manage PCBs in Infrastructure | | | | | | | | | |
| Diversion to POTW | | | | | | | | | |
| Total – All San Mateo County Permittees and Controls | | 12 | 4 | 5 | 3 | 13 | 24 | 247 | 308 |

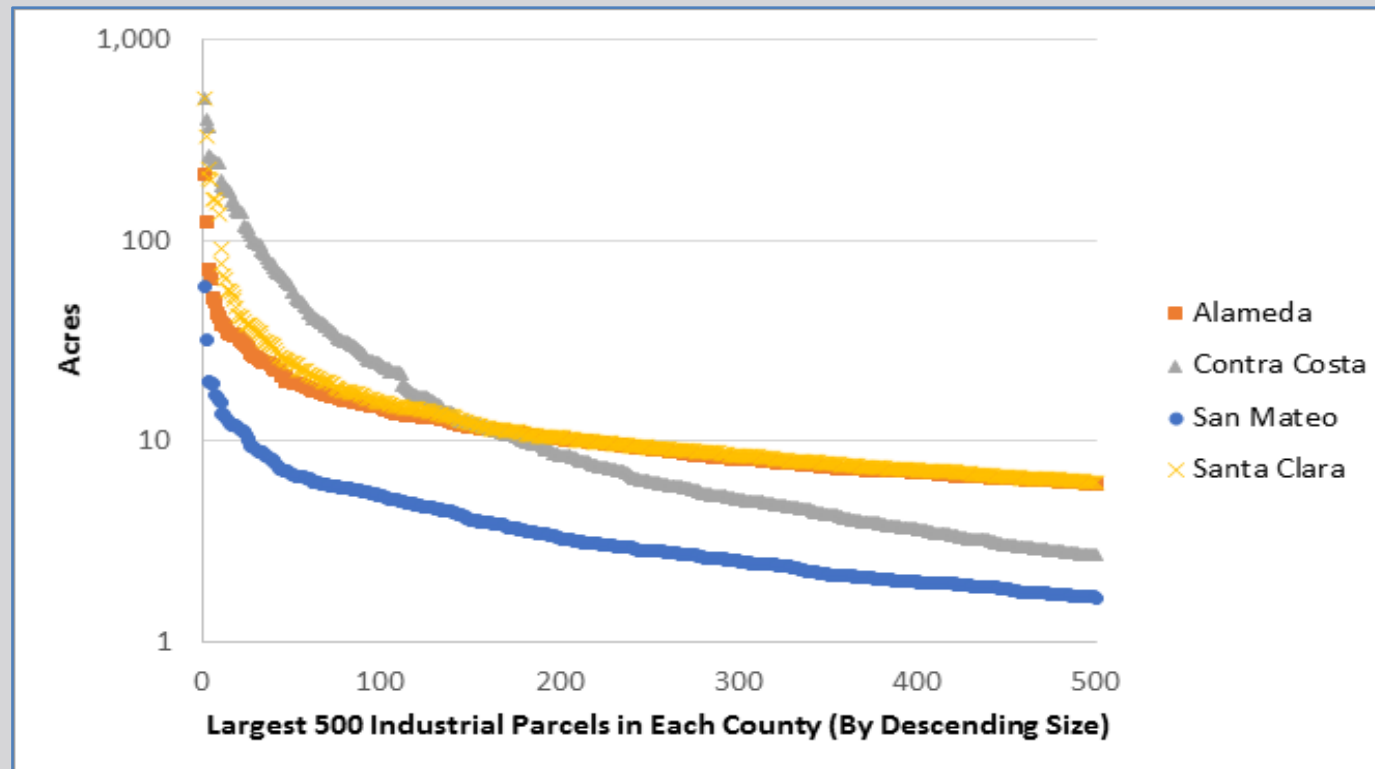
Source Property Referrals in SM County

| Description | Approx. Property Area (acres) | PCBs Load Reduction Credit ¹ (g/year) |
|---|-------------------------------|--|
| Delta Star / Tiegel | 7.7 | 15 |
| 977 and 1007/1011 Bransten Road | 2.4 | 5 |
| 1411 Industrial Rd. (Habitat for Humanity site) | 1.3 | 3+ ?? |
| 1029A Washington Street (Phoebus Manufacturing) | 0.5 | 1 |
| 1030 Washington Street (Nor Cal and cell tower) | 0.3 | 0.6 |
| 1025 or 1030 Varian Street (empty lot) | 0.1 | 0.3 |
| Total | 12.3 | 25 |

¹Enhanced O&M in vicinity of site required for referrals.

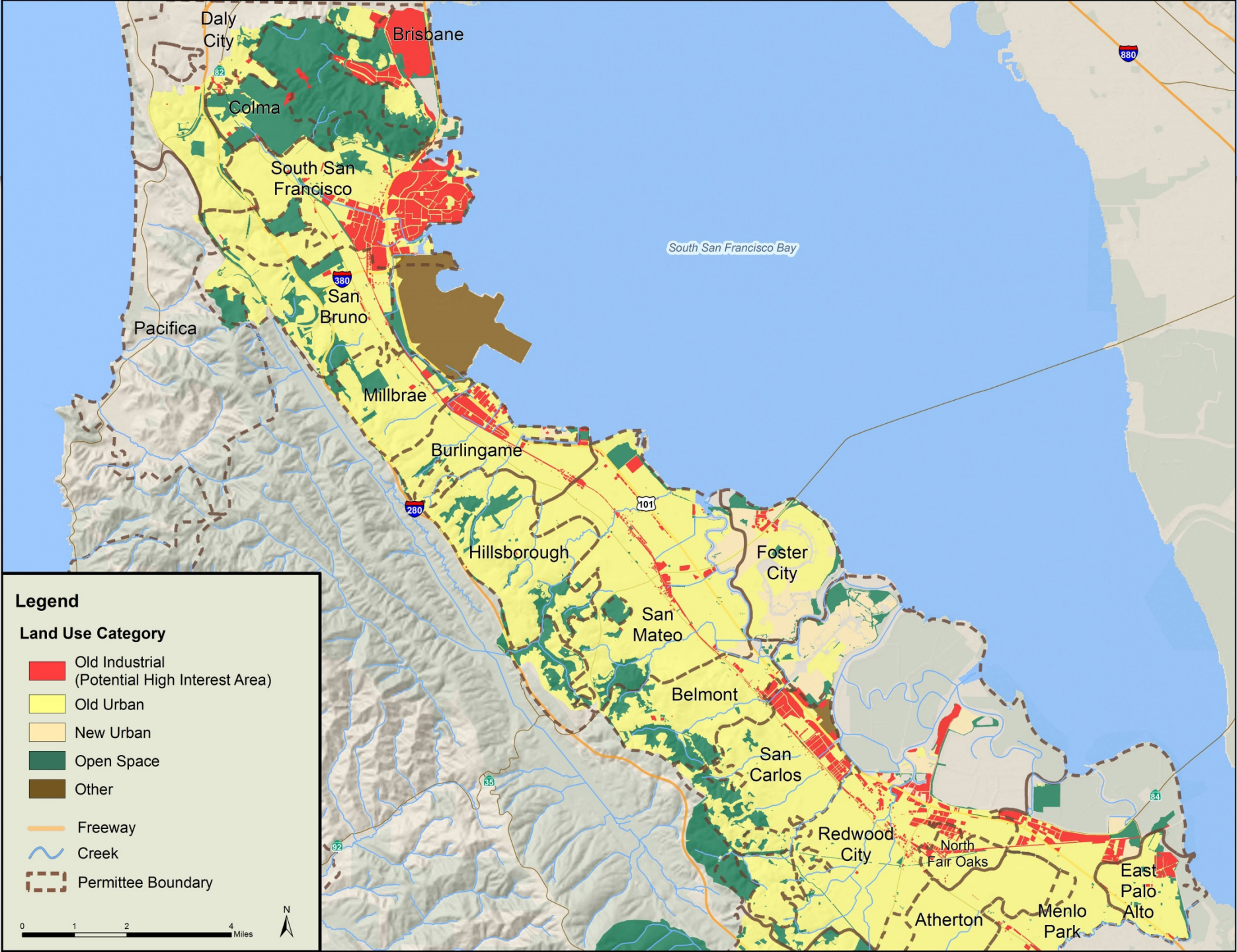
Industrial Land Use in Four Bay Area Counties

| | San Mateo County | Alameda County | Contra Costa County | Santa Clara County |
|---|------------------|----------------|---------------------|--------------------|
| Total Industrial Area (acres) | 3,000 | 14,000 | 13,000 | 16,000 |
| Average Industrial Parcel Size (acres) | 1 | 2 | 8 | 3 |



Regional Stormwater Capture Projects

| Project | Old Industrial (acres) | Old Urban (acres) | New Urban (acres) | Ag / Open Space (acres) | Total Drainage Area (acres) | Approx. PCBs Load Reduction (grams/year) |
|------------------------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------------|--|
| Cartan Field, Atherton | 0 | 1,798 | 24 | 653 | 2,476 | 40 |
| Orange Memorial Park, SSF | 103 | 3,834 | 107 | 2,424 | 6,468 | 95 |
| I-280/I-380 interchange, San Bruno | 1 | 579 | 1 | 359 | 940 | 13 |
| Red Morton Park, RWC | 2 | 1,510 | 5 | 127 | 1,643 | 33 |
| Twin Pines Park, Belmont | 0 | 28 | 0 | 0 | 28 | 1 |
| Total | 106 | 7,749 | 138 | 3,563 | 11,556 | 182 |



Legend

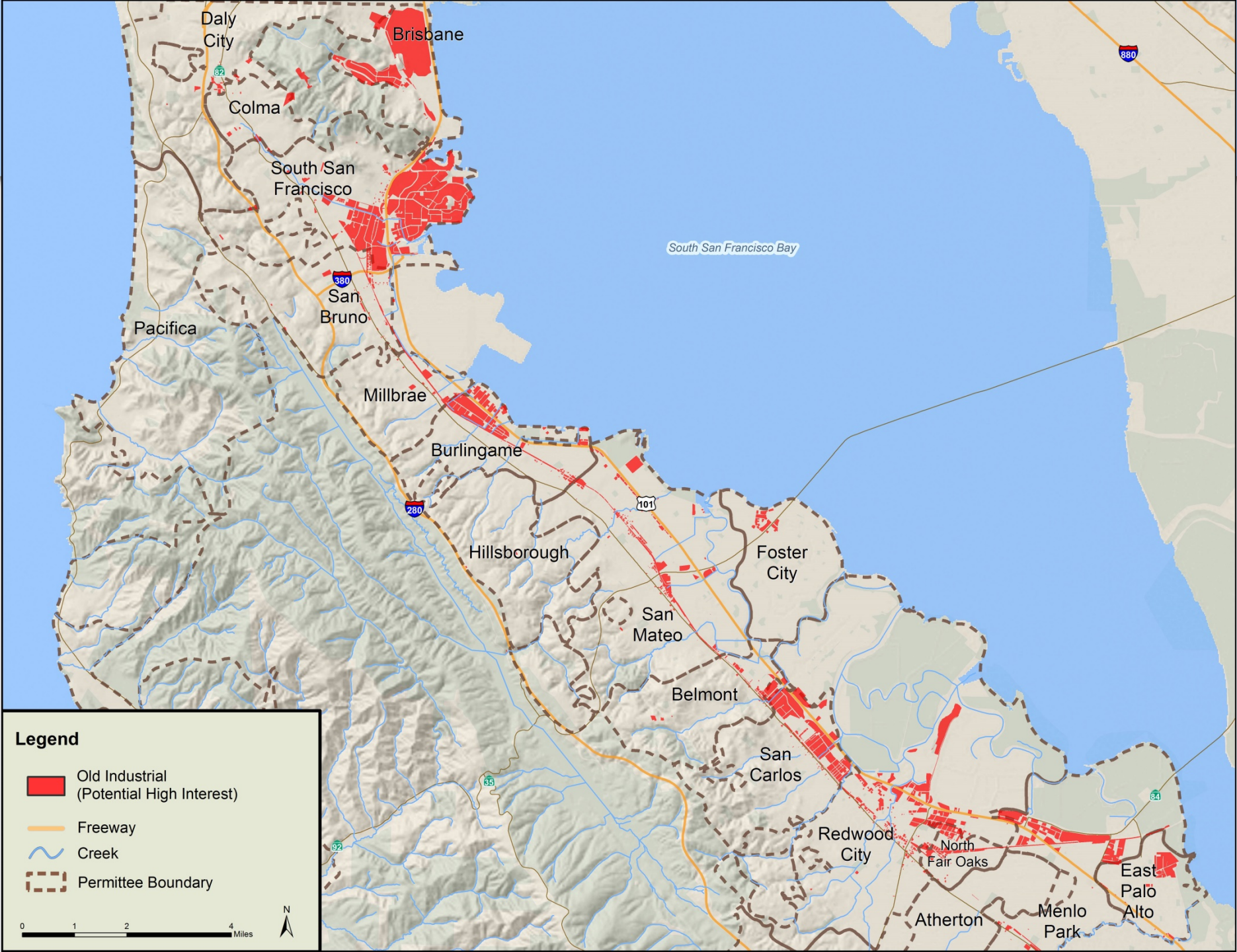
Land Use Category

- Old Industrial (Potential High Interest Area)
- Old Urban
- New Urban
- Open Space
- Other

- Freeway
- Creek
- Permittee Boundary

0 1 2 4 Miles

N

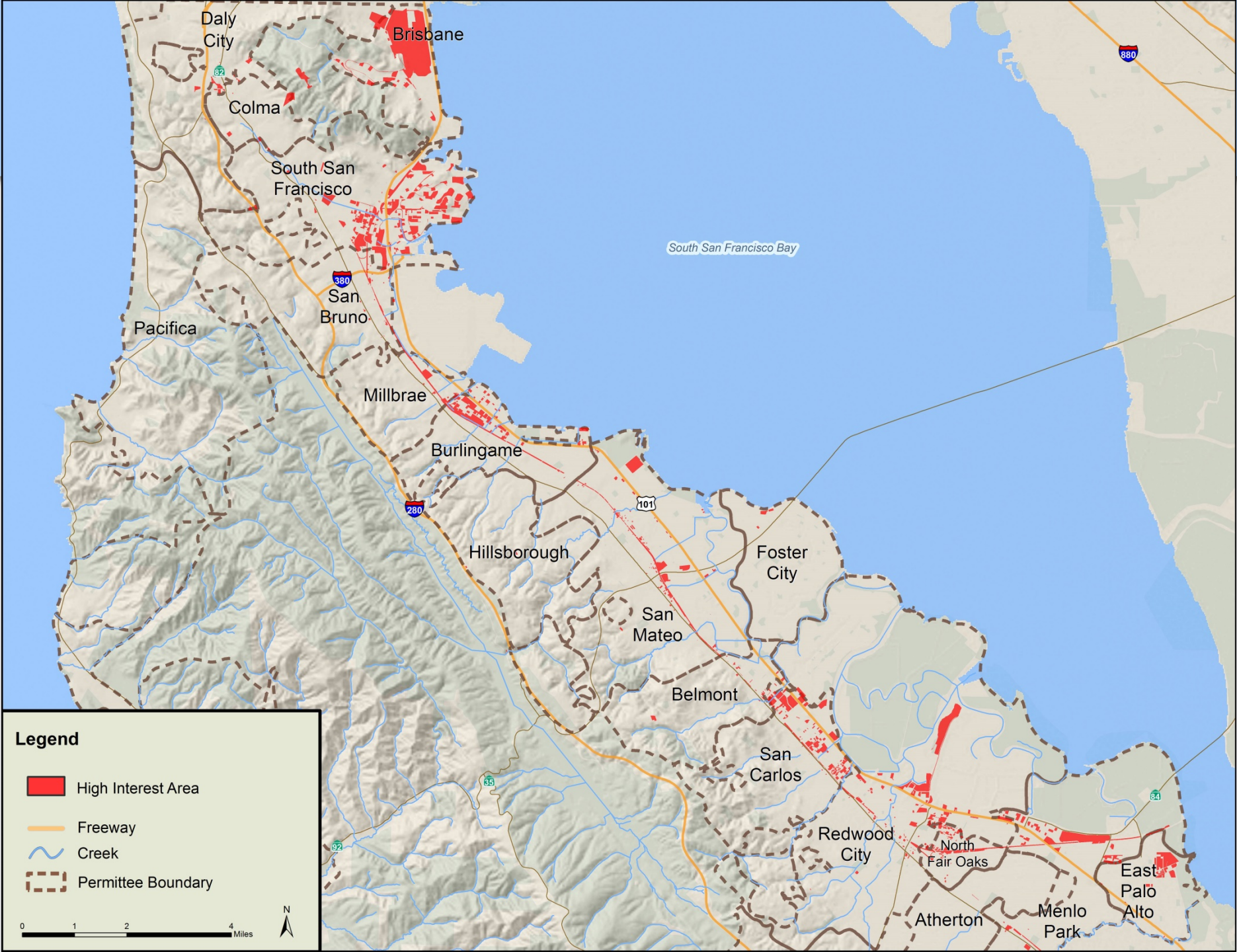


Legend





- Old Industrial (Potential High Interest)
- Freeway
- Creek
- Permittee Boundary

0 1 2 4 Miles

N

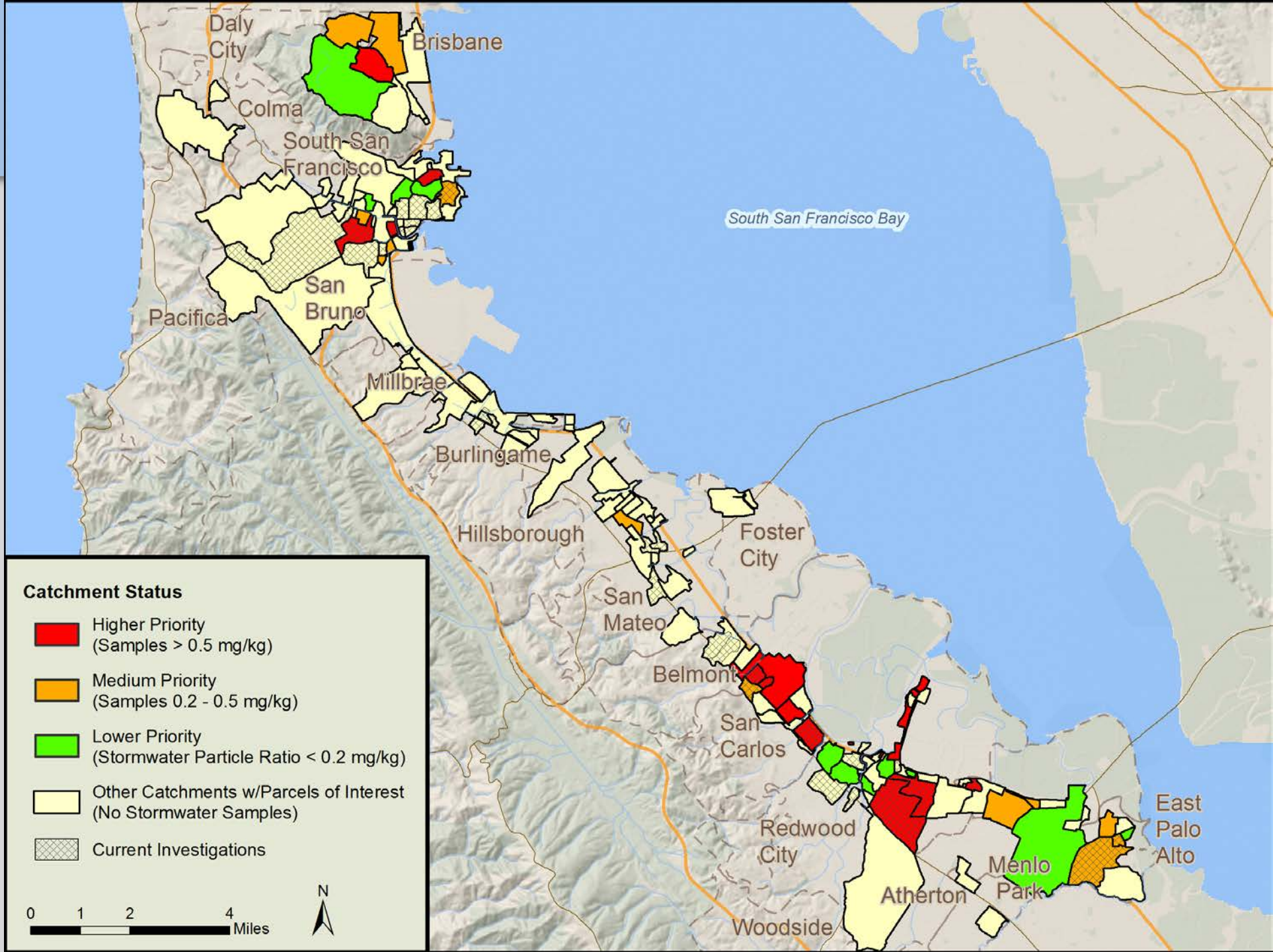


Legend

-  High Interest Area
-  Freeway
-  Creek
-  Permittee Boundary

0 1 2 4 Miles

N



Source Property Investigation Summary

- Field monitoring in SM County since about year 2000 (by SMCWPPP and others)
 - About 400 sediment samples
 - About 60 stormwater runoff samples (bottom of catchment)
- Benefit – a few source properties in San Carlos

Mercury and PCBs Control Measures Plan

- Prepare plan to reach mercury and PCBs TMDL allocations by 2028 and 2030, respectively
- Due September 2020
- Identify all “technically and economically feasible” controls and implementation schedule

Mercury and PCBs Control Measures Plan (cont.)

1. Project estimated load reductions by 2028/2030 from various source controls, including the following
 - Management of PCBs during building demo (expand program?)
 - Referrals of source properties
 - Small (e.g., inlet filters) and large trash controls (e.g., East Palo Alto)
 - O&M (e.g., channel dredging, Redwood Shores detention pond?)
2. Project how much GI is expected by 2028/2030 (redevelopment, green streets, regional projects) and associated load reductions
3. If full allocation is not met by above (a likely outcome), adapt modeling to determine the cost of additional GI needed to fill gap

Mercury and PCBs Control Measures Plan (cont.)

- Potential outcome: extend PCBs TMDL time frame to make more economically feasible
- Incorporate plan into MRP 3 rather than more numeric load reduction mandates
- Integrated this planning with ongoing efforts by C/CAG to assist municipalities obtain grant funding for planning and building GI
- Incorporate into a GI investment plan potentially to be developed by new Flood and Sea Level Rise Resiliency District

QUESTIONS?



EXTRA SLIDES

Current Permit Reissuance Schedule

- Draft Tentative Order summer/fall 2020
- Final Tentative Order late 2020 (more realistically by end of calendar year)
- Tentative Order adoption spring 2021
- Permit effective date July 1, 2021 (6 months after expiration)

PCBs Load Reductions as of June 2018 (Regional)

| Control Measure Category | PCBs Load Reduction (g/yr) |
|--|----------------------------|
| Source Property Identification and Abatement | 424 |
| Green Stormwater Infrastructure | 156 |
| Large Full Trash Capture (i.e., HDS) | 100 |
| Enhanced O&M Measures | 9 |
| Stormwater Diversion to Sanitary Sewer | 2 |
| TOTAL - All Control Measures | 691 |

Acres Addressed for 1 Gram/Year

| Control | Acres for 1 g/year PCBs Load Reduction |
|--|--|
| Treatment of old industrial parcel via redevelopment | 12 |
| Treatment of old urban parcel via redevelopment | 37 |
| Treatment of old industrial land use via GI retrofit | 17 |
| Treatment of old urban land use via GI retrofit | 47 |
| Referral of source property (with enhanced O&M) | 0.5 |
| Abatement of source property | 0.25 |

