SamTrans Adaptation and Resilience Plan

SamTrans Board of Director

July 12, 2023

Agenda

- Purpose and Overview of SamTrans Adaptation & Resilience Study
- Sea Level Rise Analysis
- High Heat Analysis

Overview

- Purpose: assess the climate vulnerability of SamTrans bus base facilities and riders, prepare responsive actions
- The SamTrans Adaptation and Resilience Plan, completed in 2021, has two components:
  - Sea Level Rise (SLR) Analysis
  - High Heat Analysis
- Advisory group participants: Caltrans, SFO, South San Francisco, San Carlos, San Carlos Airport, Redwood City, BCDC, San Mateo County, and the Bay Trail
- Extensive engagement with SamTrans operations and maintenance staff

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Sea Level Rise (SLR) Analysis

SLR Analysis Summary

- Purpose: assess the risk of SLR, storm surge, and inundation to SamTrans' facilities, vehicles, employees, and riders
- Method: analyzed probability of flooding for the years 2050 and 2100 for North Base and South Base
- Identified and evaluated high-level adaptation strategies to increase SamTrans' resilience to flooding

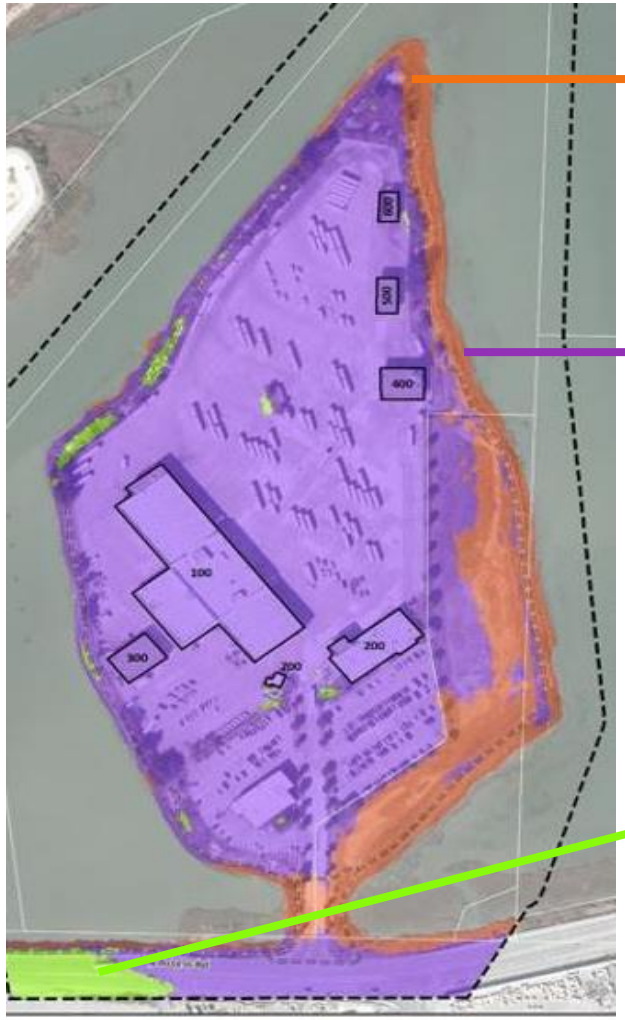
North Base Vulnerability 2050

Orange: present day baseline flood

Orange & purple combined: probable by 2050

Orange, purple & green combined: unlikely by 2050

North Base Vulnerability 2100

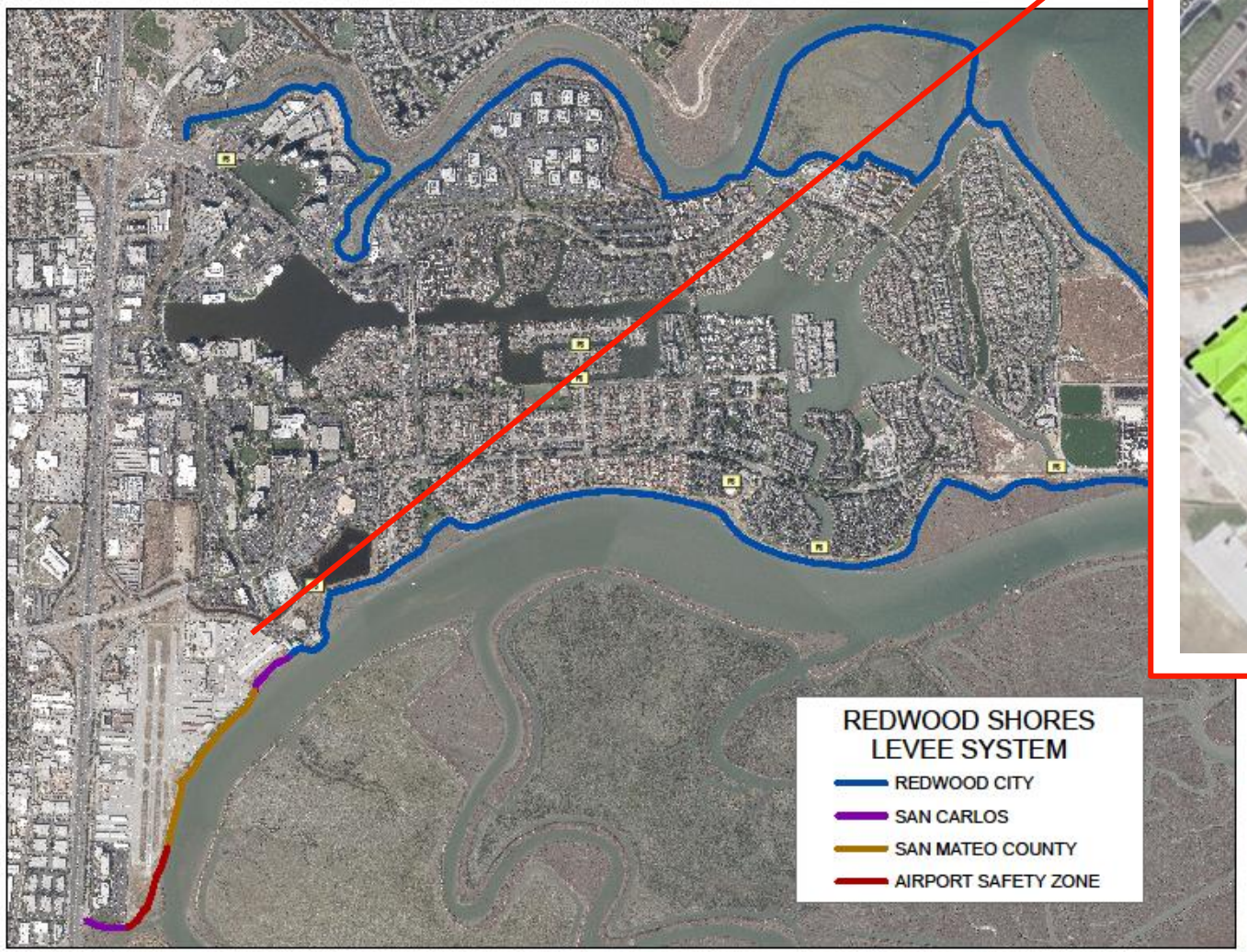


Orange: present day baseline flood

Purple combined: probable by 2100

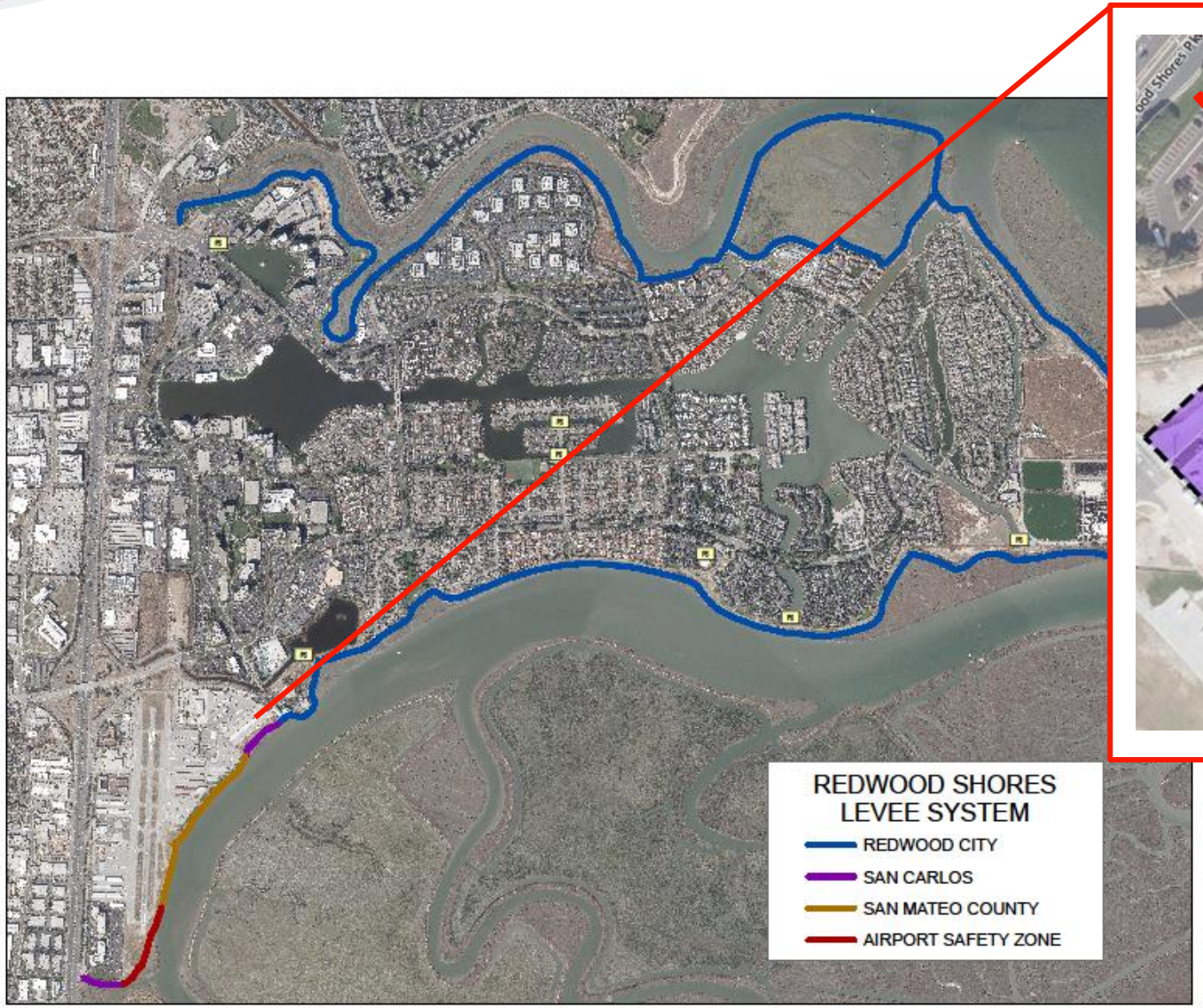
Green: unlikely by 2100

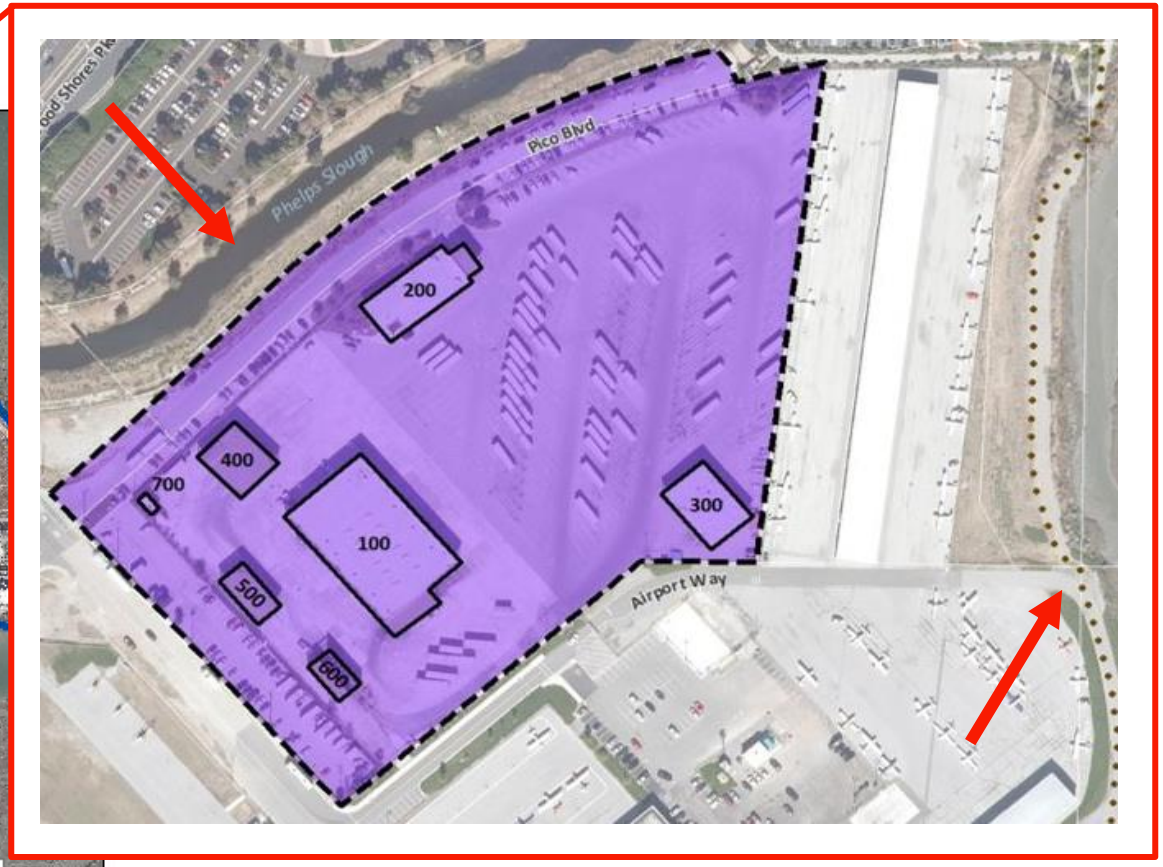
South Base Vulnerability 2050



Green: unlikely by 2050

South Base Vulnerability 2100





Purple: probable by 2100

SLR Response Actions

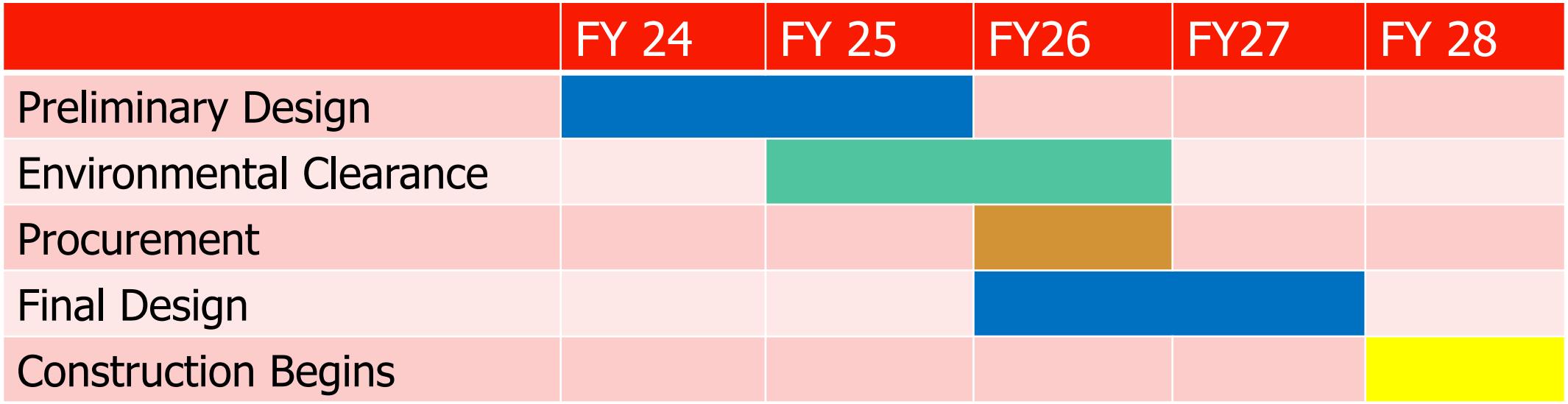
- Engage with regional partners on key infrastructure mitigations
  - North Base
    - SFO: connect flood control systems
      - SFO and SamTrans have coordinated regarding project timing and collaboration. SFO sent SamTrans a Letter of Intent to coordinate
    - Communicating with OneShoreline regarding multi-jurisdictional coordination
  - South Base
    - Support One Shoreline/agencies efforts to raise Redwood Shores Levee
      - SamTrans joined a multi-agency FEMA grant coordinated by OneShoreline to fund initial design, currently under consideration
    - Work with SMC to address Phelps Slough flooding at SB (outstanding)

SLR Response Actions, cont'd

- All NB projects will account for SLR findings going forward
  - ZEB and other projects such as Building 200 Replacement
    - For example, locating infrastructure to avoid flooding, adding raised pads
- Build North Base perimeter modular levee with a total height of 19'
  - Project Description being developed
  - Grant funding will be sought for initial scoping
  - PM recruitment estimated FY24
  - Ongoing coordination with SFO

SLR Response Actions, cont'd

- North Base Modular Levee High-Level Schedule



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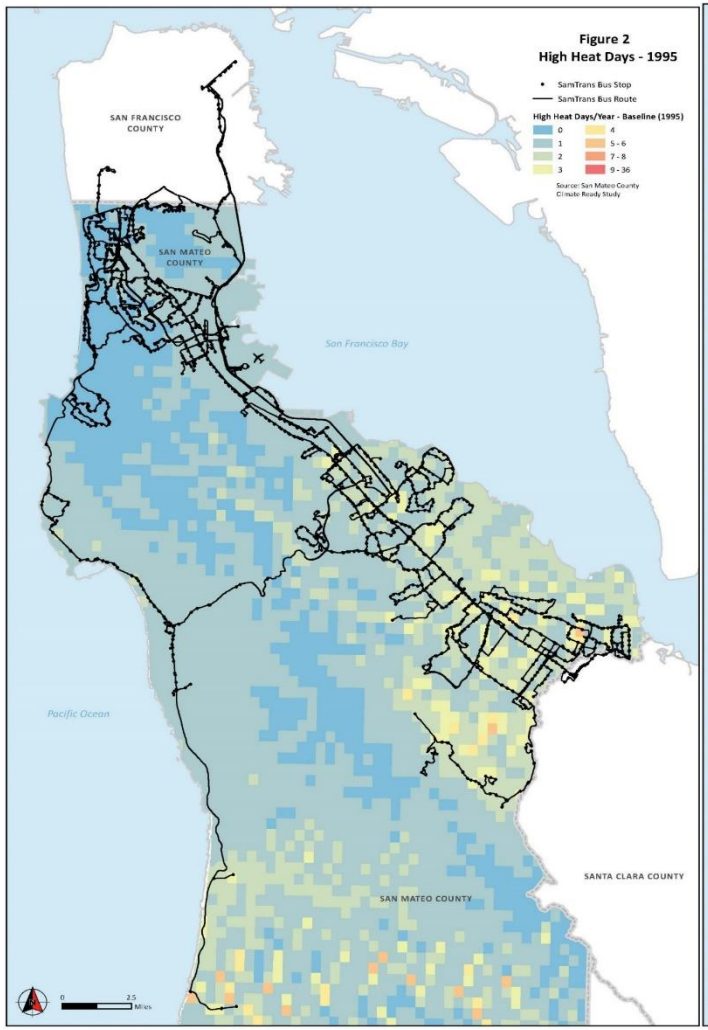
High Heat Analysis

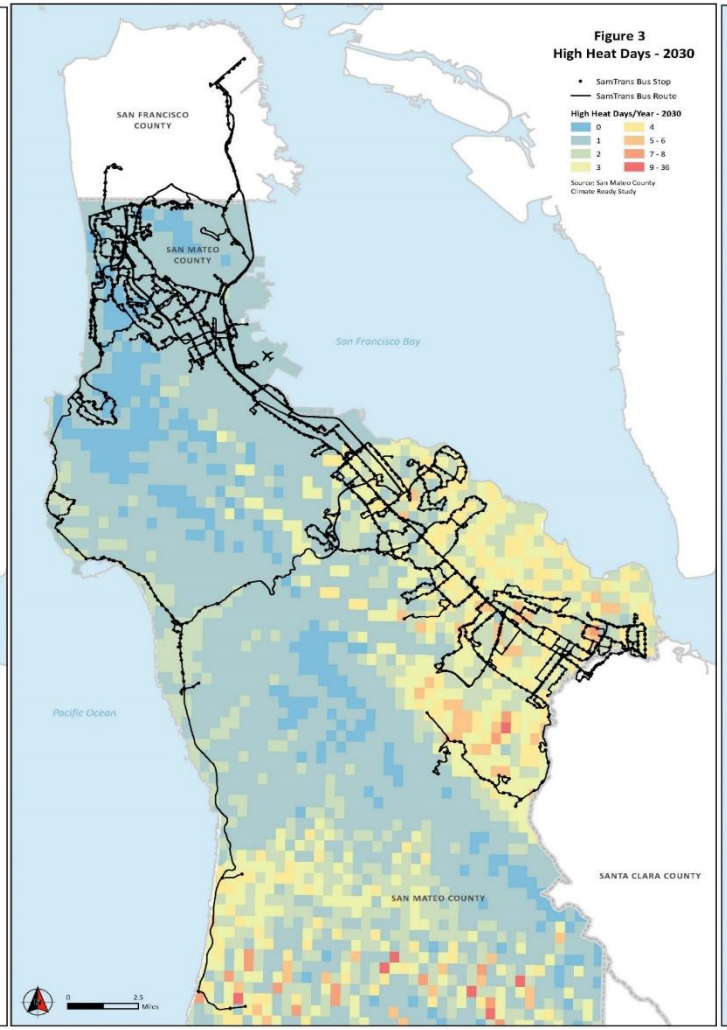
High Heat Analysis Summary

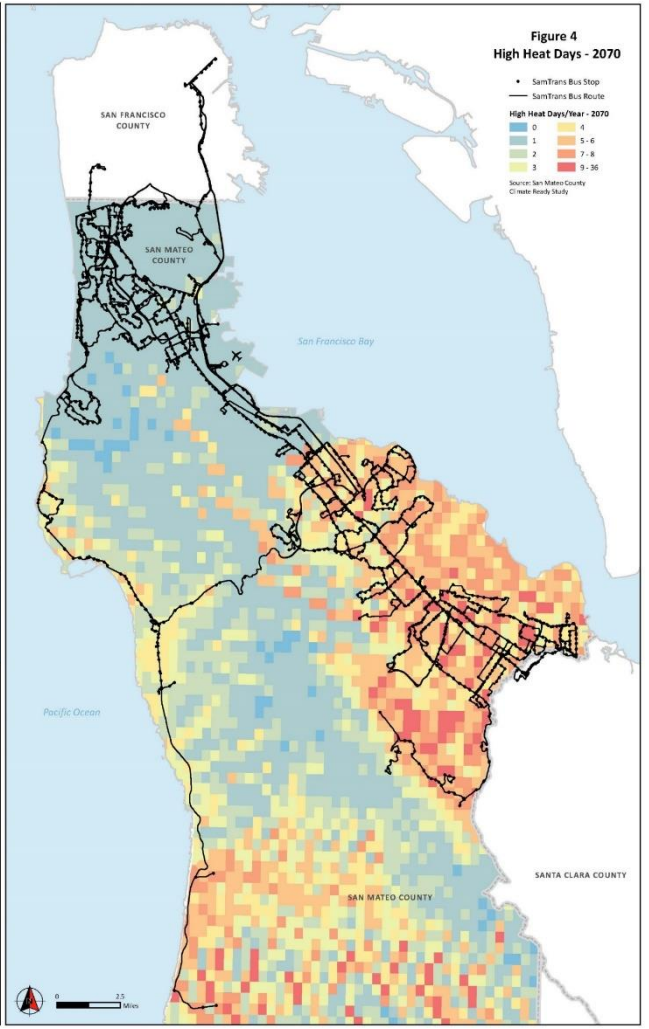
- Purpose: assess the vulnerability of SamTrans' bus base facilities, employees, and riders to climate intensified high-heat

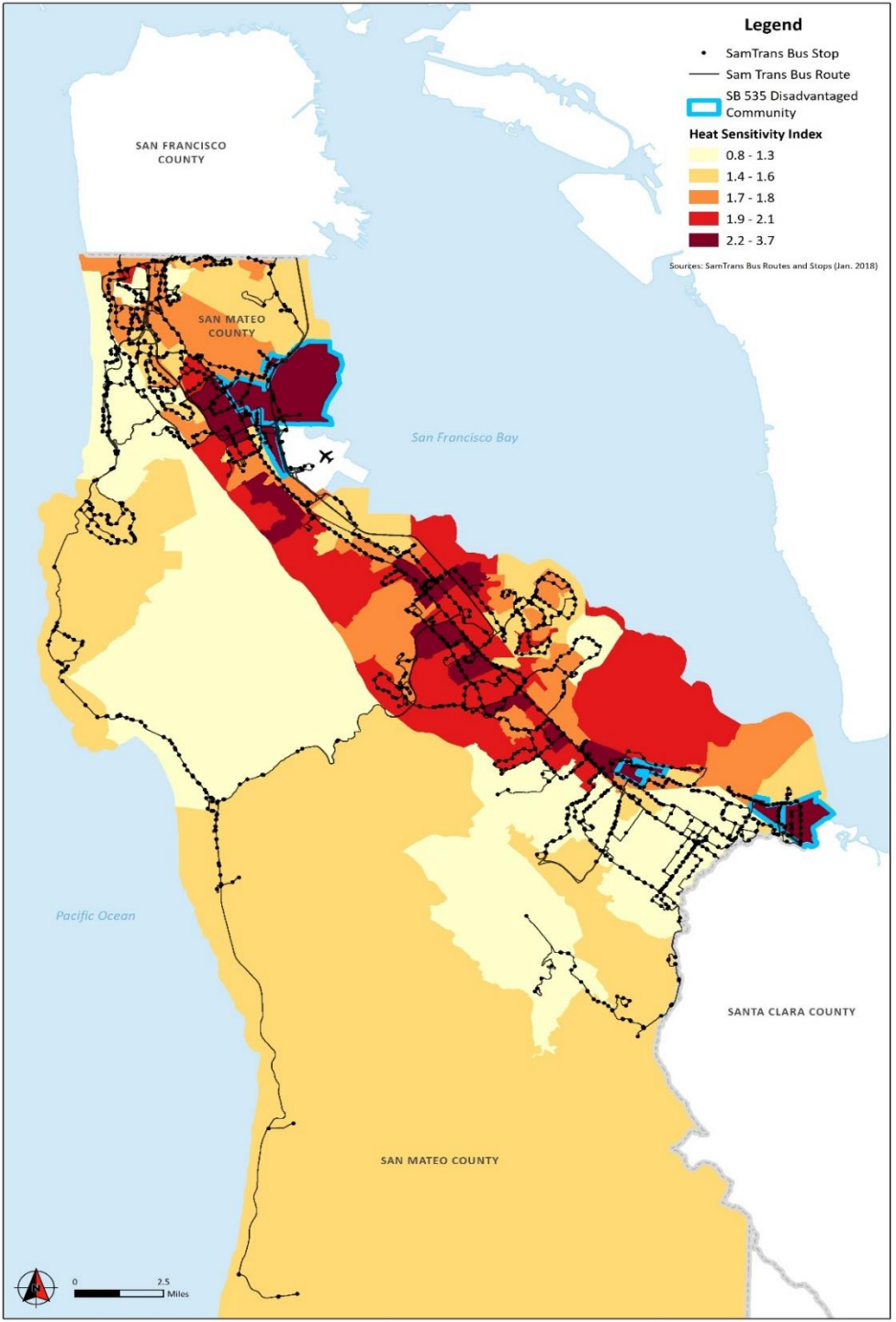
Year	Temp Increase (°F)	Max High Heat Days	Increase in Air Conditioning Days
1995	-	13	-
2030	1.4 to 2.2	21	89%
2070	3.8 to 5	35	676%

High Heat Projections Through 2070









Heat Sensitivity Index

The index accounts for:

- Income / poverty level
- Asthma rate
- % Age 65+
- % No access to vehicle
- % People with disability impacting movement
- SB 535 CalEnviroScreen communities
- Heat Island Effect

Heat Response Actions

- Develop bus stop design that protects from heat
  - Bus Stop Improvement Plan underway, accounts for Heat Index findings
- Exploring additional research analyzing relationship between extreme weather and ridership, paratransit rider vulnerability

Thank you

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