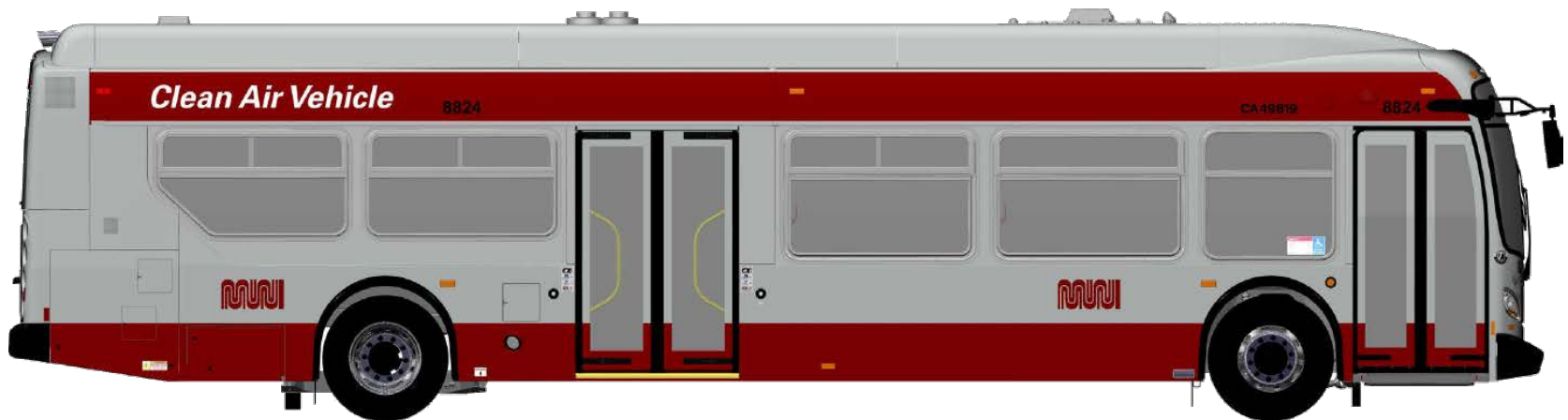




SFMTA

Introduction of the First **Green Zone** Program in the World



Overview

- What is the **Green Zone** Program?
- Diesel to Hybrid to Electric Path
- How does it work?
- Where are the **Green Zones**?
- Next Steps
- Advantages of the **Green Zone** Program

What is the **Green Zone** Program?

- Game changing sustainability improvement and the first program of its kind in the world!
- Testing the transformation of a Hybrid bus → a Part-time Electric Bus.
- Bus will go from running on an engine to running on a battery within the predefined testing area.

Diesel to Hybrid to Electric Path

- In 2005, SFMTA bought its first batch of hybrid-electric vehicles.
- In 2013, SFMTA began a vehicle procurement to replace all diesel coaches to hybrid-electric vehicles.
- In 2018, 68 hybrid-electric vehicles are being delivered with a new feature that allows for the **Green Zone** program.

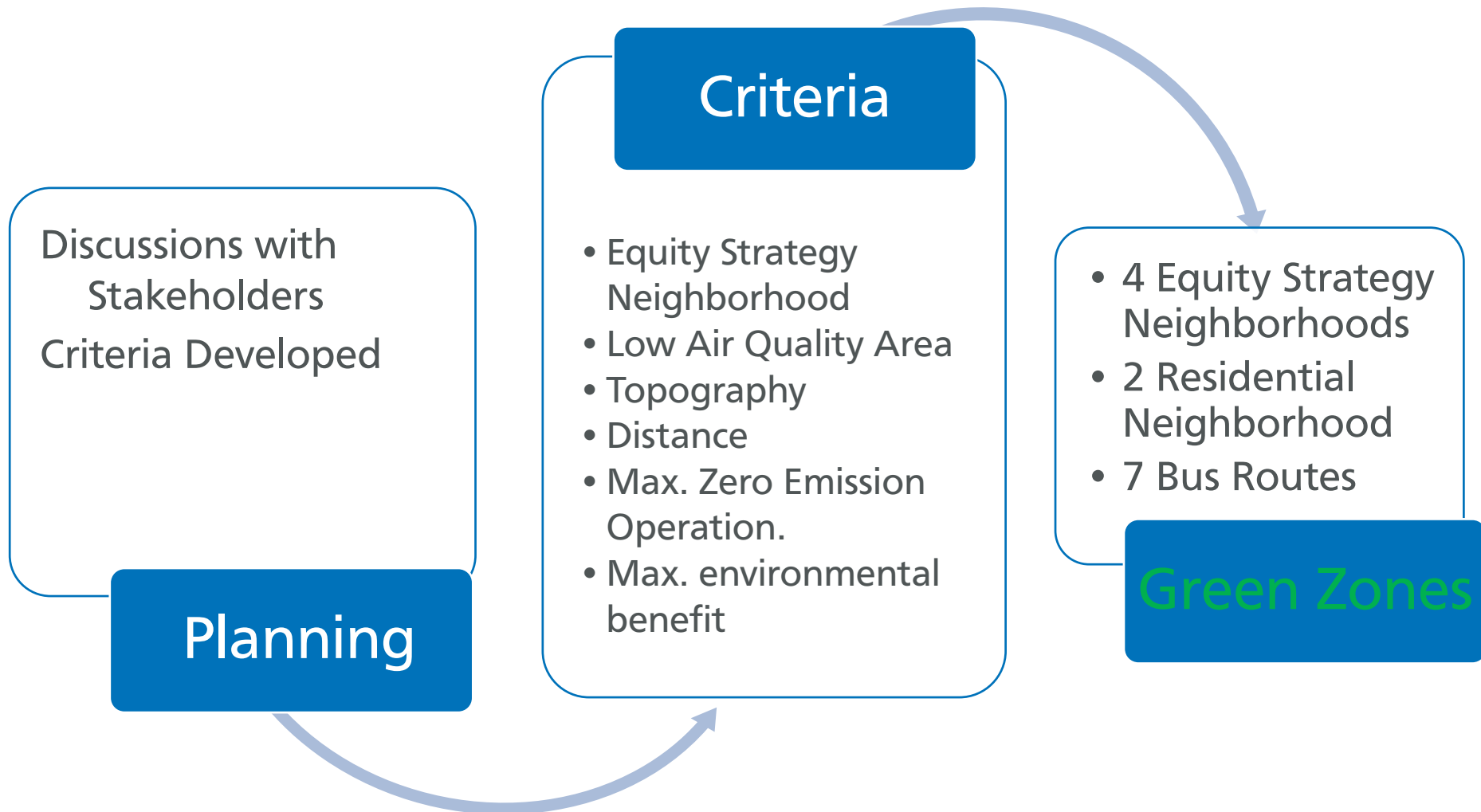
How does it work?

- ❑ Engine has start/stop (anti-idle) feature
- ❑ Battery technology has advanced – New battery's have higher energy capacity.
- ❑ Using computer technology, vehicles will be programmed with virtual boundaries. When a bus enters these boundaries, the engine will shut off and operates on battery mode.
- ❑ The On-board Bus computers will monitor battery life

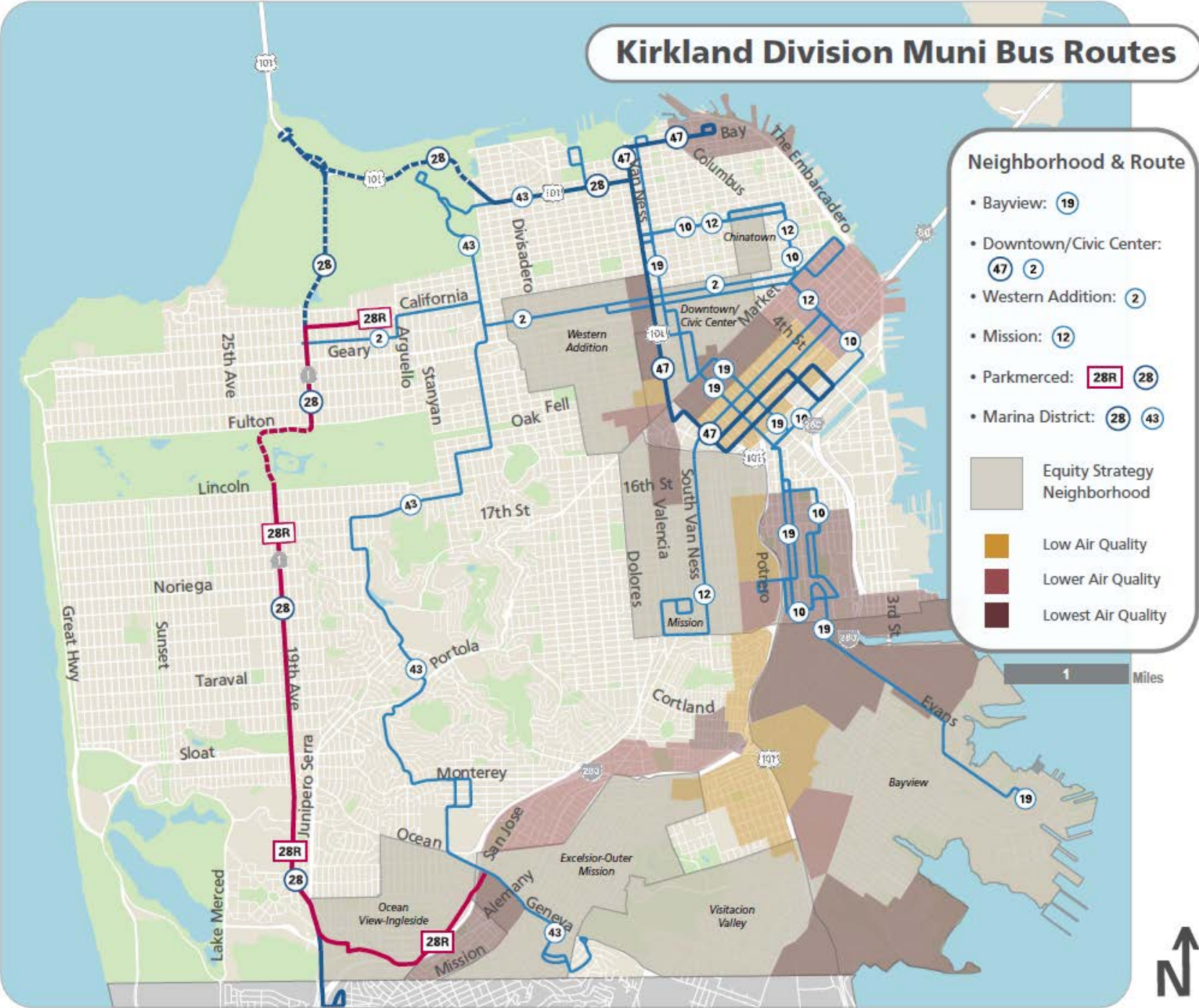
Where are the Green Zones?



Where are the Green Zones?



Kirkland Division Muni Bus Routes



Neighborhood & Route

- Bayview: 19
- Downtown/Civic Center: 47 2
- Western Addition: 2
- Mission: 12
- Parkmerced: 28R 28
- Marina District: 28 43

Equity Strategy Neighborhood
 Low Air Quality
 Lower Air Quality
 Lowest Air Quality

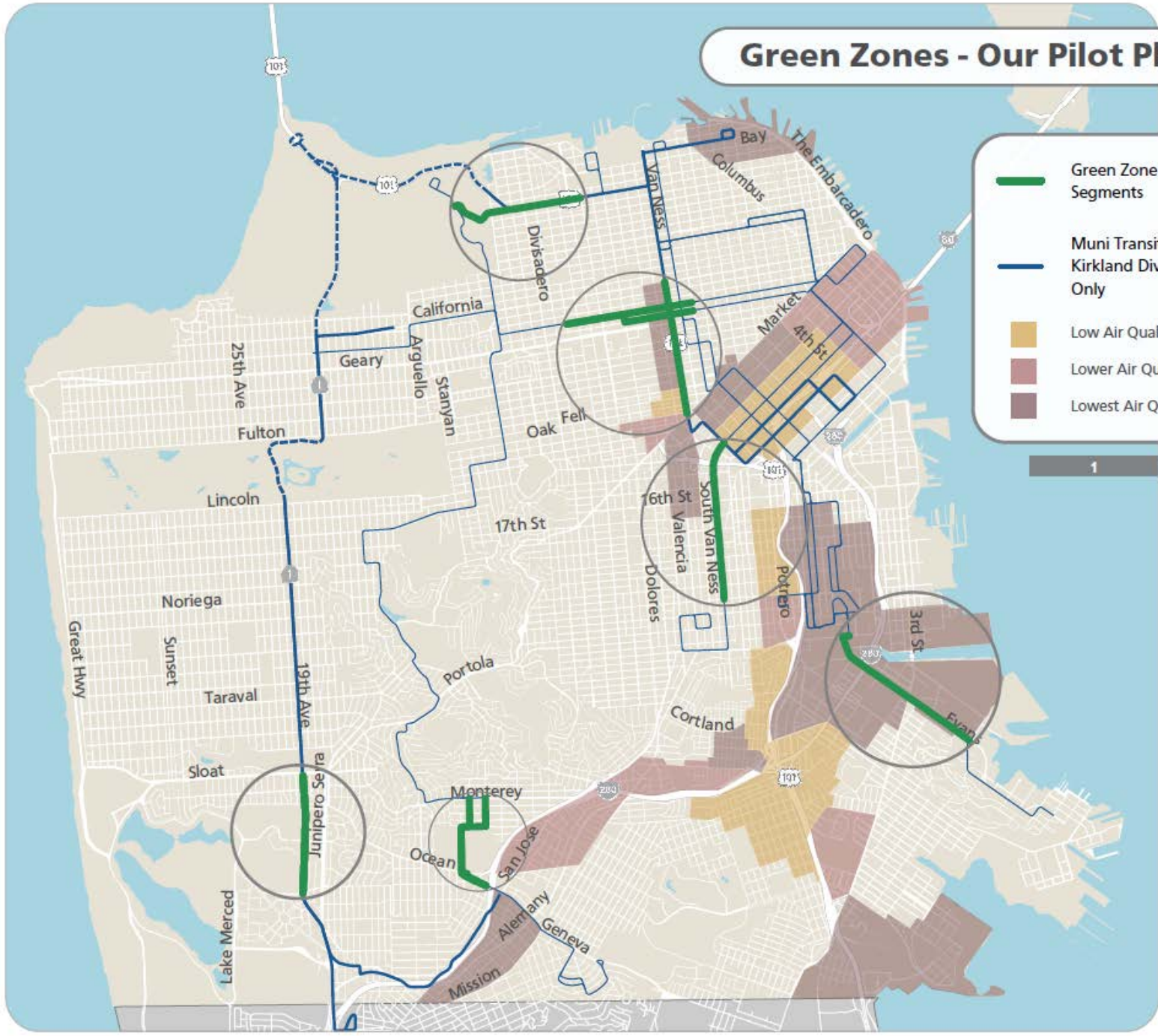
1 Miles



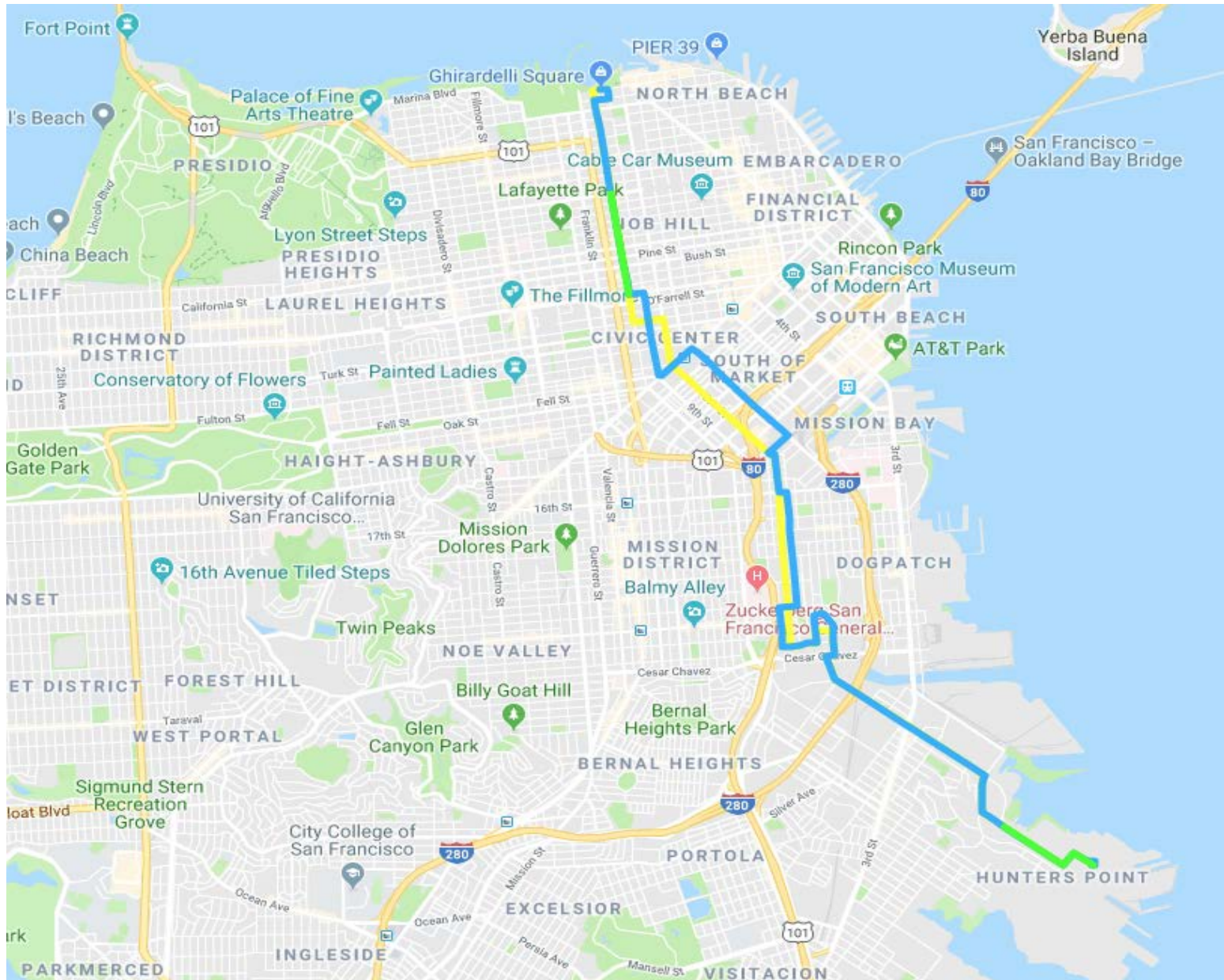
Green Zones - Our Pilot Plan

- Green Zone Route Segments
- Muni Transit Lines, Kirkland Division Only
- Low Air Quality
- Lower Air Quality
- Lowest Air Quality

1 Miles



Route 19 Soft Launch Green Zones



Where are the Green Zones?

Equity Strategy Neighborhoods

Western Addition, Downtown / Civic Center, Bay View, Mission

Residential Neighborhoods

Park Merced, Marina

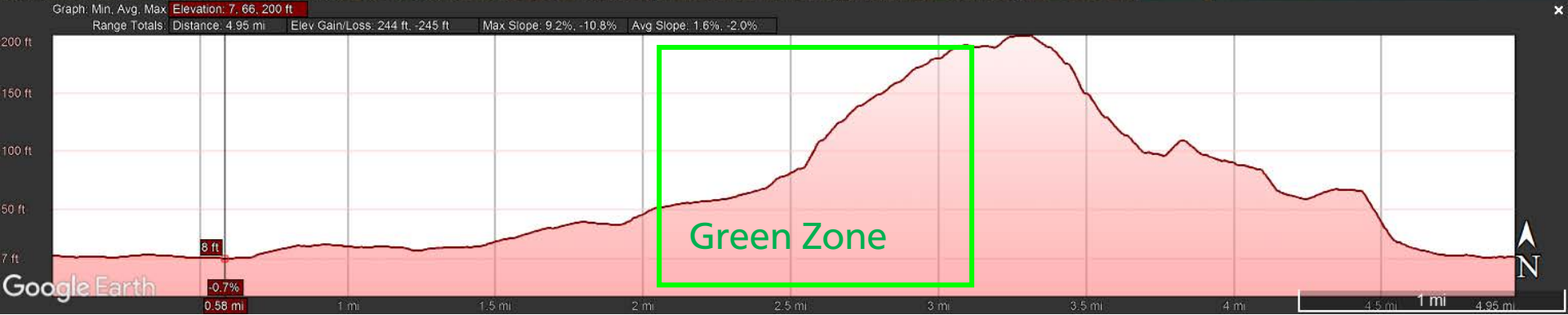
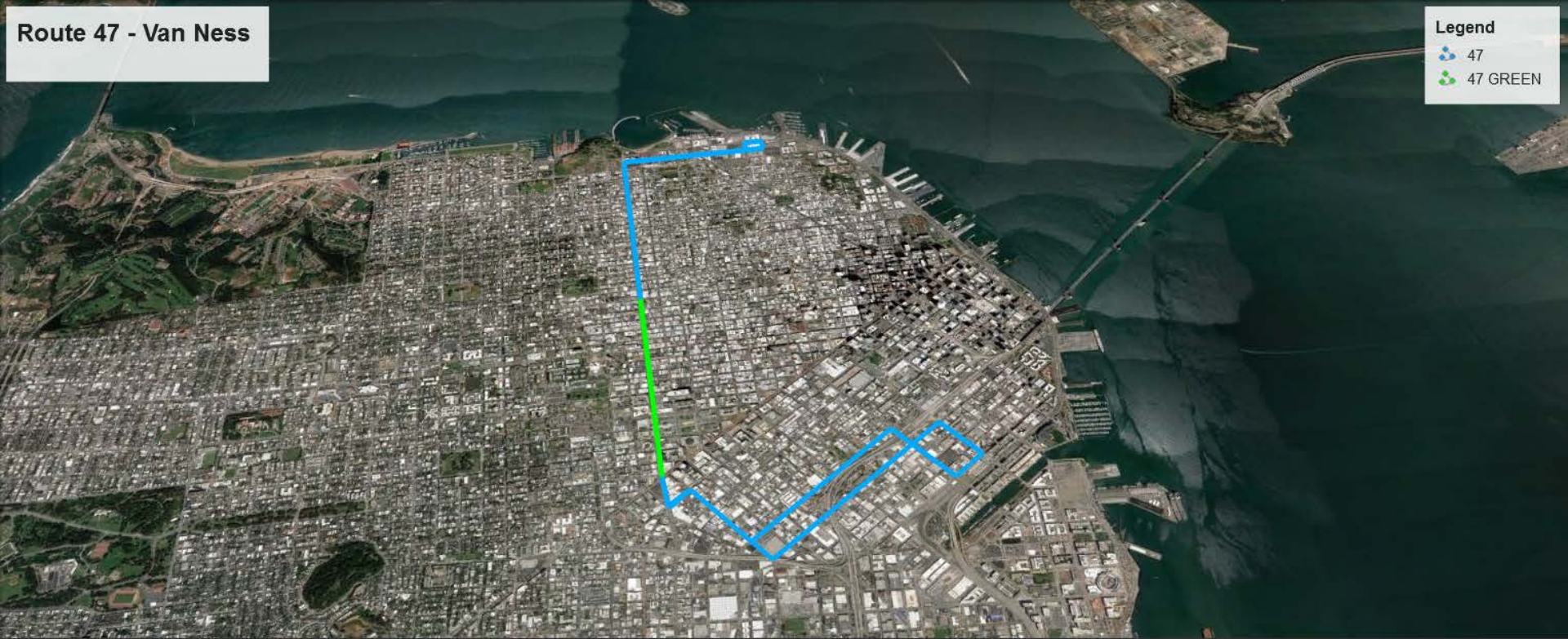
Bus Routes

- 2 – Clement
- 12 – Folsom/Pacific
- 19 – Polk
- 28 – 19th Ave
- 28R – 19th Ave Rapid
- 43 – Masonic
- 47 – Van Ness

Next Steps

- Implementation
 - Soft launching on bus route 19, Polk
 - **Green Zones**
 - 1st Zone – 1.4 miles at the Hunter Point Terminal
 - 2nd Zone - Polk St between Geary Blvd to Broadway
 - Evaluate performance data
 - Deploy and expand **Green Zone** onto other identified bus routes
- Internal Conversation
 - Operations Division (explain operational procedures to minimize misunderstandings)
 - Maintenance Division (enhance maintenance procedures)
- Community Outreach
 - Communicate **Green Zone** information to the public
 - Convey benefits of **Green Zone** technology

Route Study (Route 47)



Advantages

- Replace 68 aged buses with **Green Zone** hybrid-electric buses
- Taking advantage of higher energy capacity battery to run up to 1/3 of the route with engine off
- Noise reduction
- Comfortable ride experience
- Milestone accomplishment for SFMTA – path of the SFMTA Zero Emission Policy
- SFMTA is the pioneer for the **Green Zone** Operation.