



**PORT of
SAN DIEGO**
Waterfront of Opportunity

Updated Draft Health Risk Assessment

*Focusing on Diesel Particulate Matter
at the District's Marine Cargo Terminals*

June 14, 2022

Agenda Item #13
File #2022-0176

Regional and Community Level Analyses

Modeling Differences

CARB's Population Weighted Analysis

- Larger Geographic Areas (such as County or Census Block Levels)
- Overall Effect on Population / Weighted towards more densely populated areas
- Typically used to Support Rulemaking

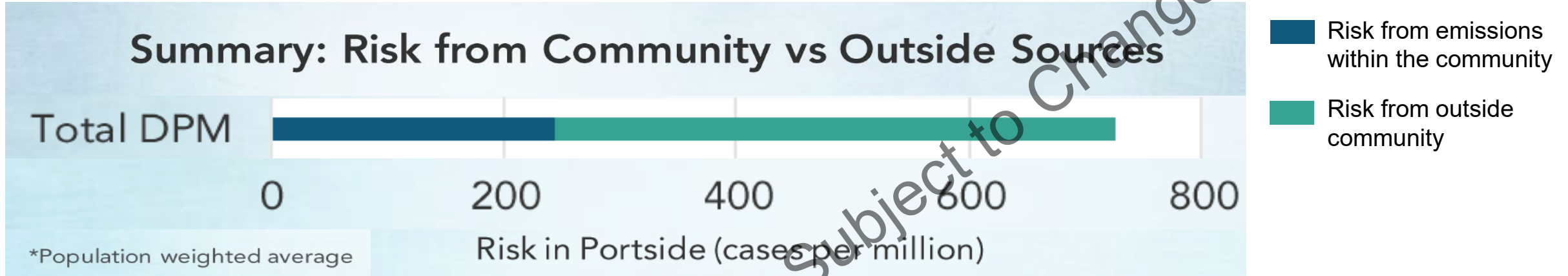


Port's Maximum Exposure Individual Resident (MEIR)

- Individual Receptor Level (Residence)
- Impact From a Specific source or facility
- More Granular Scale
- Easier to understand



CARB's DPM Risk Summary








Modeling Software: CALPUFF and CMAQ **Baseline 2017**

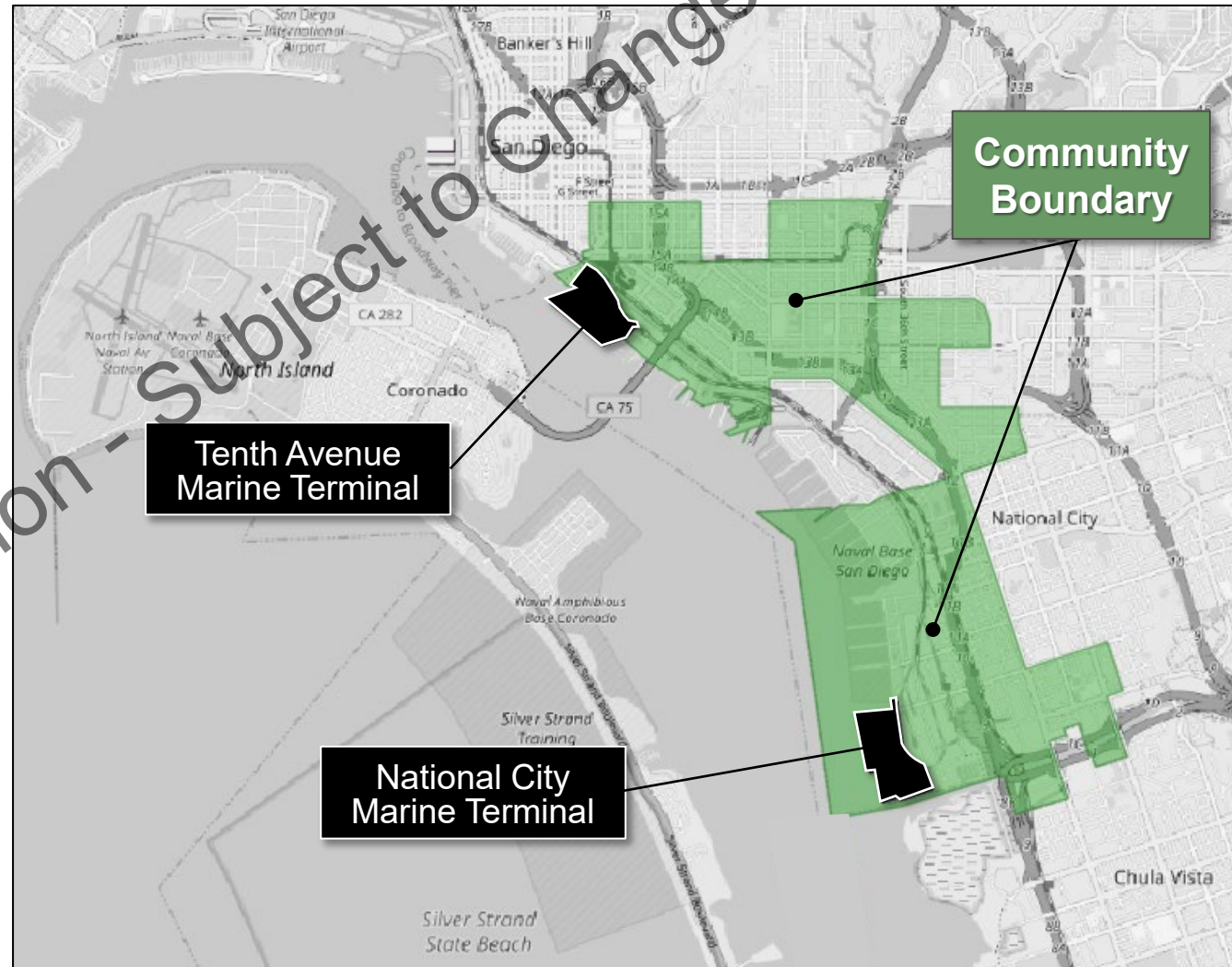
The highest regional contributions of diesel particulate matter is attributed to:

- Regional transportation on the interstate highway system
- Commercial harbor craft
- Industrial operations and manufacturing
- Mexico and border region activity

Updated Draft Health Risk Assessment Source Types

AB 617 Community Boundary and Marine Cargo Terminal Boundaries

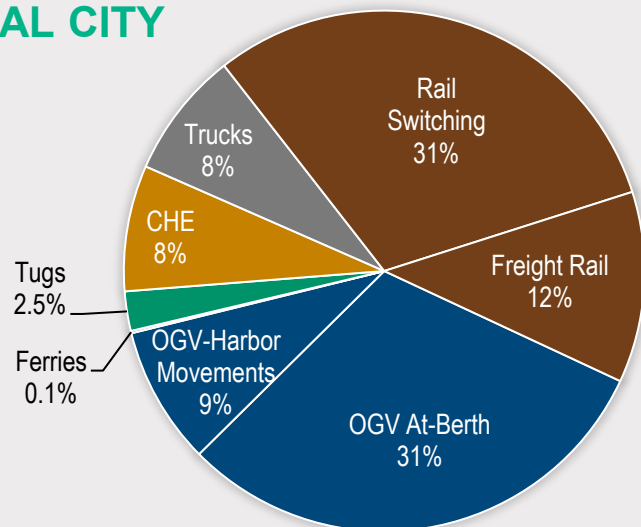
Source Type	Emission Source Summary (2019)
 Ocean-Going Vessels	329 calls
 Commercial Harbor Craft	2 Assist Tugs 2 Commuter Ferries
 Cargo Handling Equipment	184 pieces
 Heavy-Duty Trucks	~86,600 trips total (~237 average daily trips)
 Freight Rail	2.725 million tons



Residential Cancer Risk Results – Updated Baseline (2019)

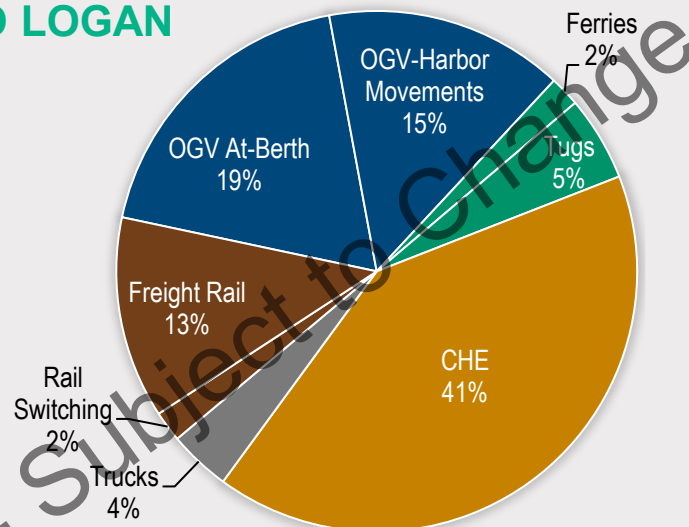
NATIONAL CITY

20.6
per million



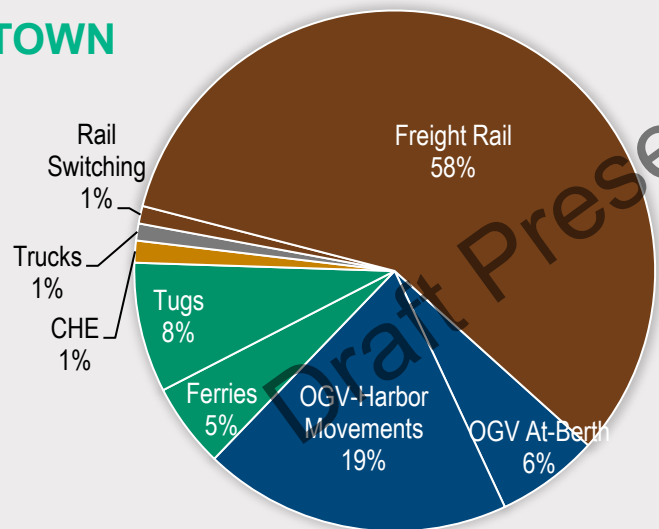
BARRIO LOGAN

19.7
per million



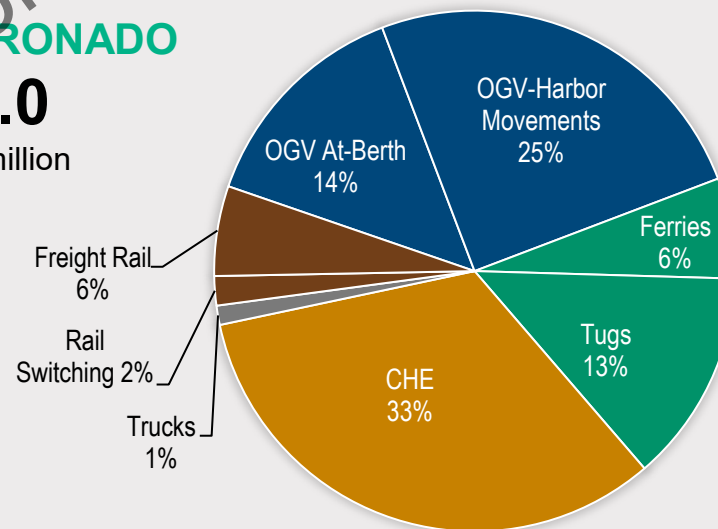
DOWNTOWN

18.9
per million



CORONADO





16.0
per million



- Oceangoing Vessels
- Commercial Harbor Craft
- Cargo Handling Equipment
- Heavy-Duty Trucks
- Rail

*Source Contribution
to Maximum Risk by
Community*

Key Modeling Adjustments Since December 2021 Based on Agency and Stakeholder Input

	<h2>Ocean Going Vessels</h2> <ul style="list-style-type: none"> • Updated Vessel Stack Height
	<h2>Trucks</h2> <ul style="list-style-type: none"> • Extended capture of Port truck trips on Interstates and non-designated surface streets • Updated truck fleet mix
	<h2>Commercial Harbor Craft</h2> <ul style="list-style-type: none"> • Updated fuel consumption (for tugs) and updated CARB emission factor (for tugs and ferries)
	<h2>Rail</h2> <ul style="list-style-type: none"> • Updated fuel consumption and emission factor

**The Updated HRA Report will include a complete list of all technical modeling changes*

Source Apportionment Comparison Between Preliminary and Updated Modeling Efforts

Preliminary

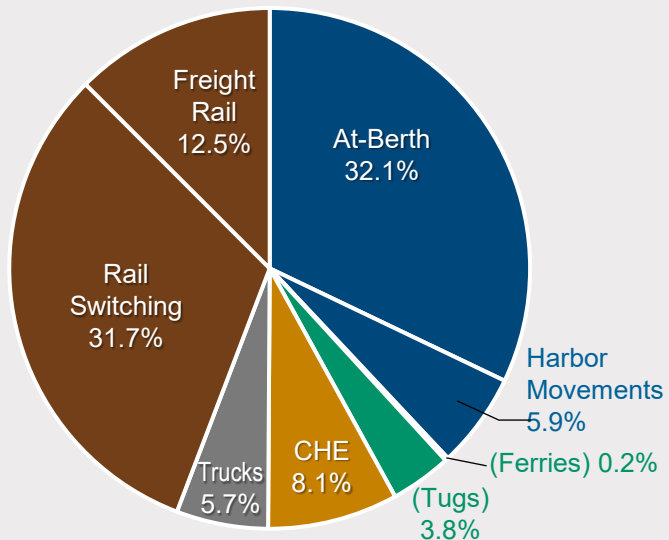
December 2021

NATIONAL CITY

Preliminary
Draft HRA

19.5

per million



Updated

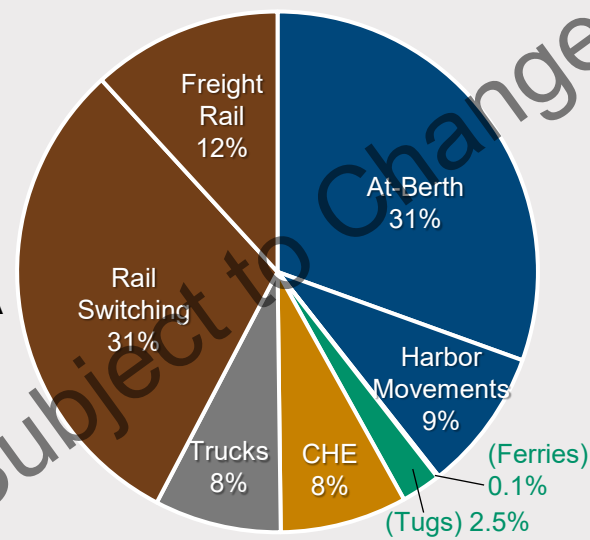
June 2022

NATIONAL CITY

Updated
Draft HRA

20.6

per million



Preliminary

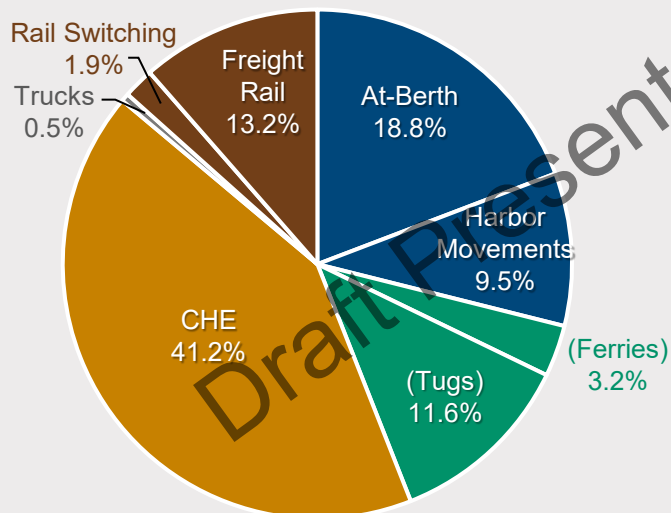
December 2021

BARRIO LOGAN

Preliminary
Draft HRA

19.6

per million



Updated

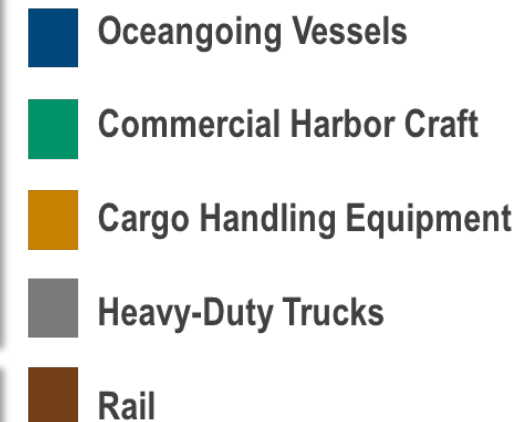
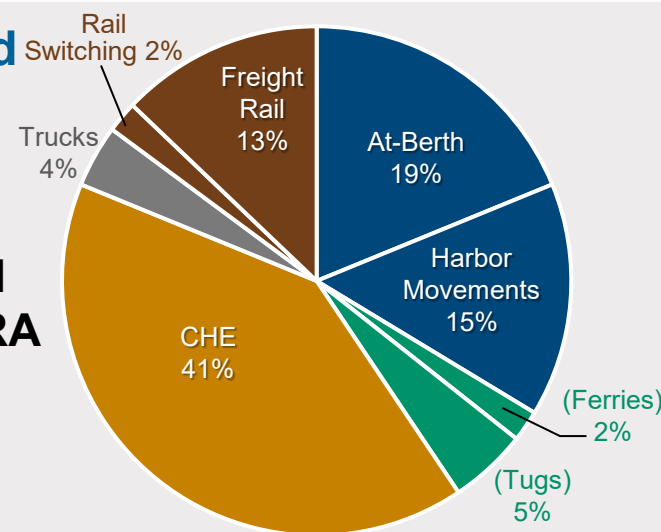
June 2022

BARRIO LOGAN

Updated
Draft HRA

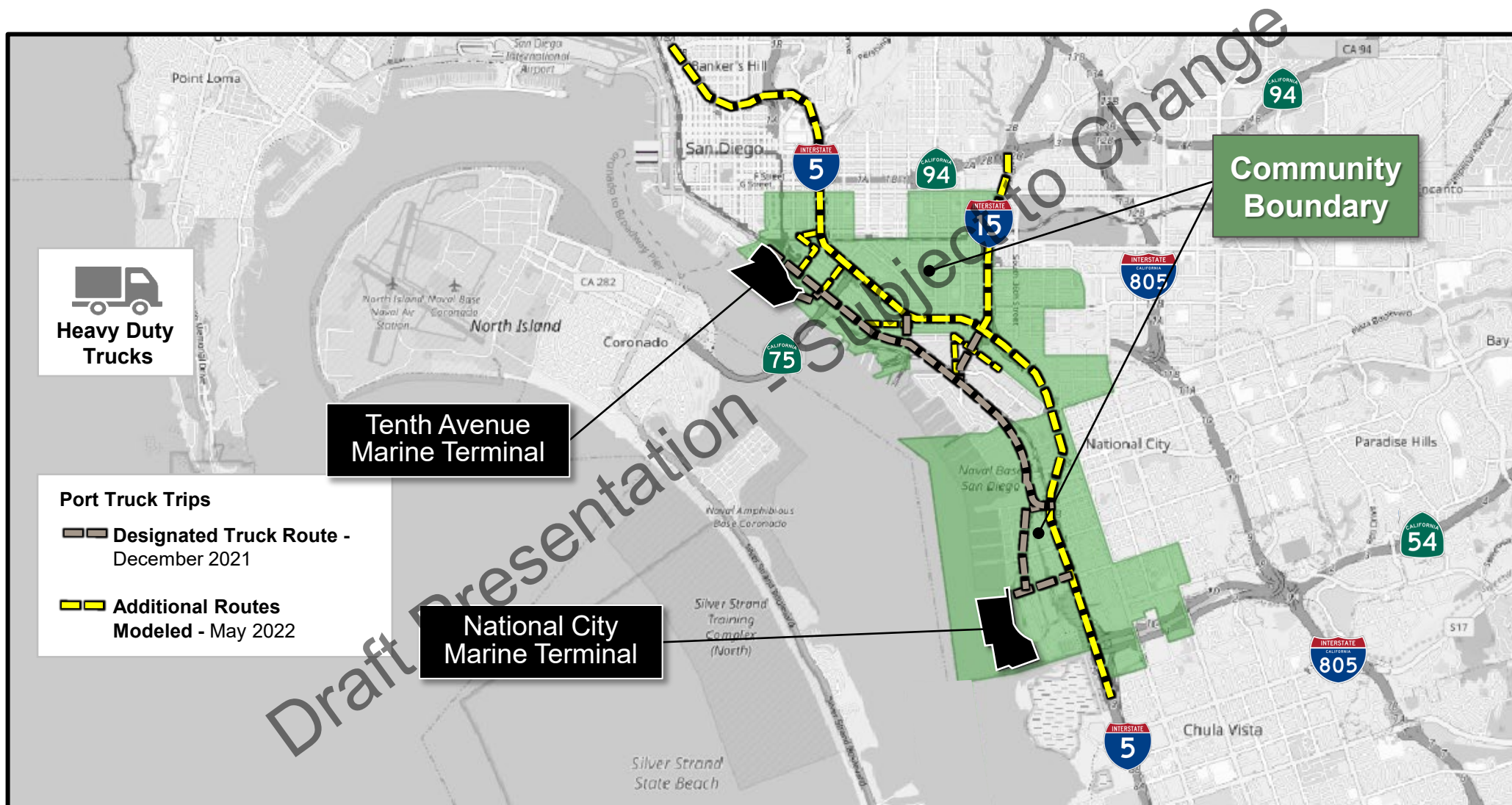
19.7

per million

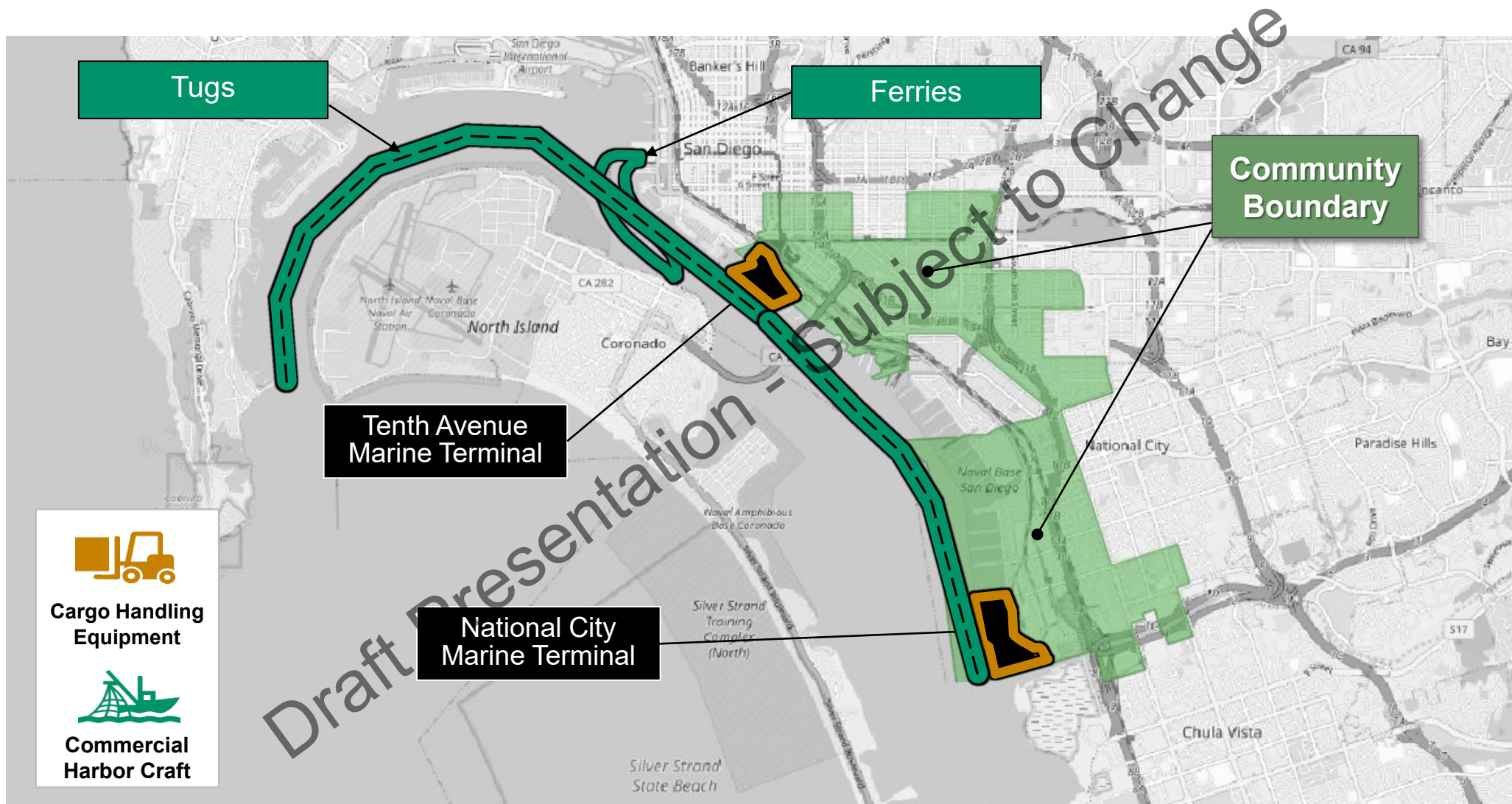


Bonnet was approved by BPC on 5/10/2022 and reductions are not quantified here.

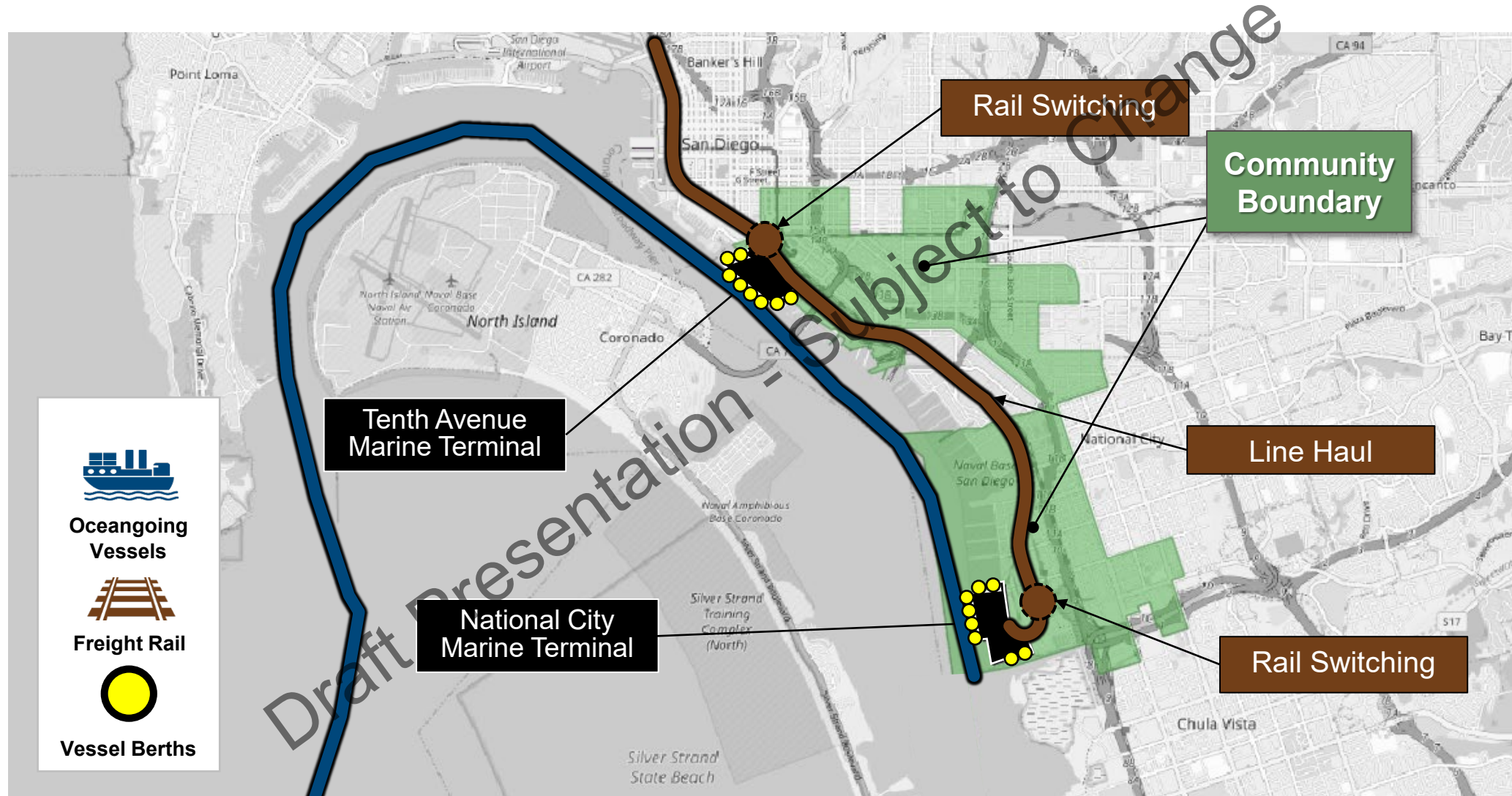
Heavy Duty Trucks



Ferries, Tugs, and Cargo Handling Equipment



Oceangoing Vessels and Freight Rail



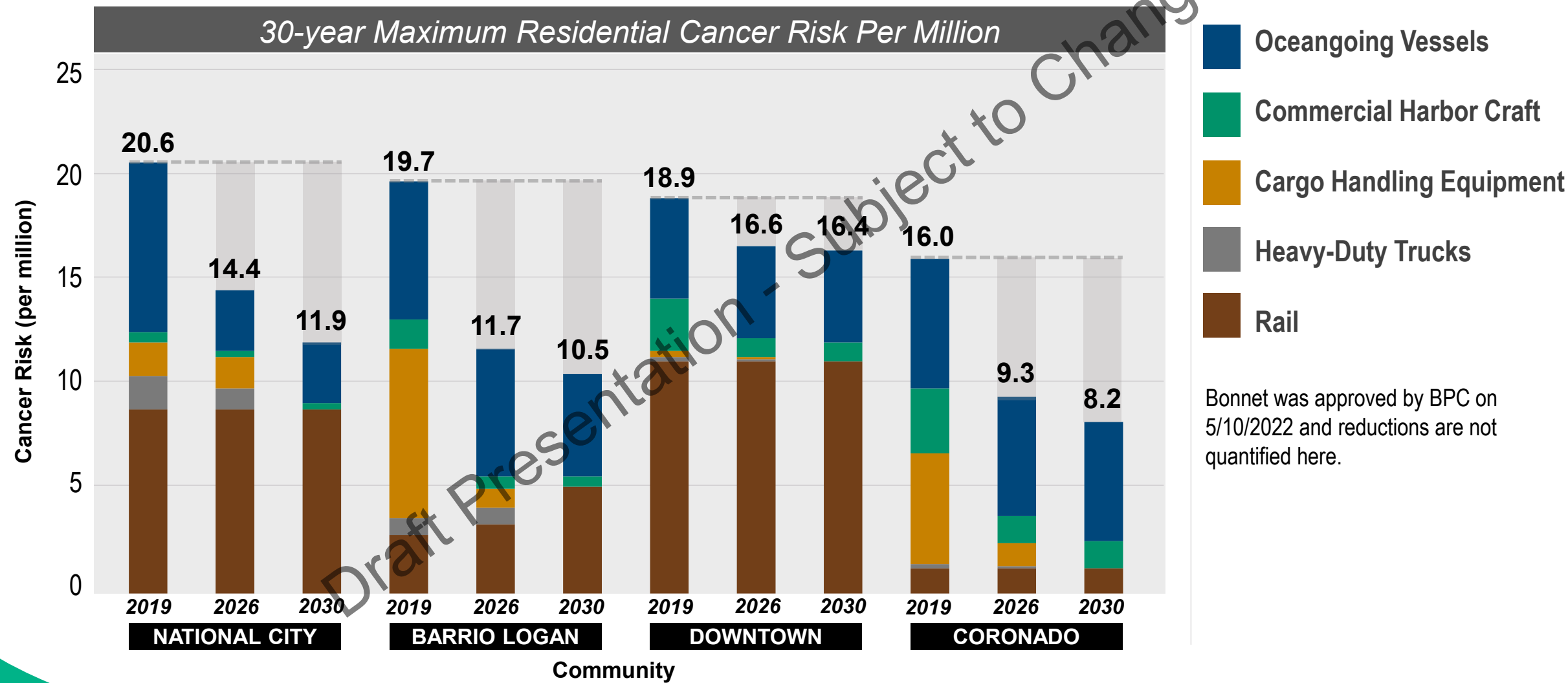
Forecasted MCAS 2026 and 2030

Draft Presentation - Subject to Change

MCAS Modeling Inputs for 2026 and 2030

Source Category	Measure (Year Implemented)
Commercial Harbor Craft	Electric Tugboat (2026) & Electric Short-Run Ferries (2026)
Cargo Handling Equipment	Electric CHE at TAMT (2025) + Electric 100% CHE at TAMT & NCMT (2030)
Trucks	40% Zero Emission Trucks (2026) + 100% Zero Emission Trucks (2030)
Ocean Going Vessels	Vessel Speed Reduction (2022) & Shore Power at NCMT (2025)

2019 Baseline Comparison to Forecasted Risk With MCAS Modeling Inputs for 2026 and 2030



Residential Cancer Risk Comparisons – Barrio Logan



Residential Cancer Risk Comparisons – National City

Baseline 2019



Rail	8.8
Ocean Going Vessels	3.1
Cargo Handling Equipment	1.6
Trucks	1.6
Harbor Craft	0.5
TOTAL	20.6

2026



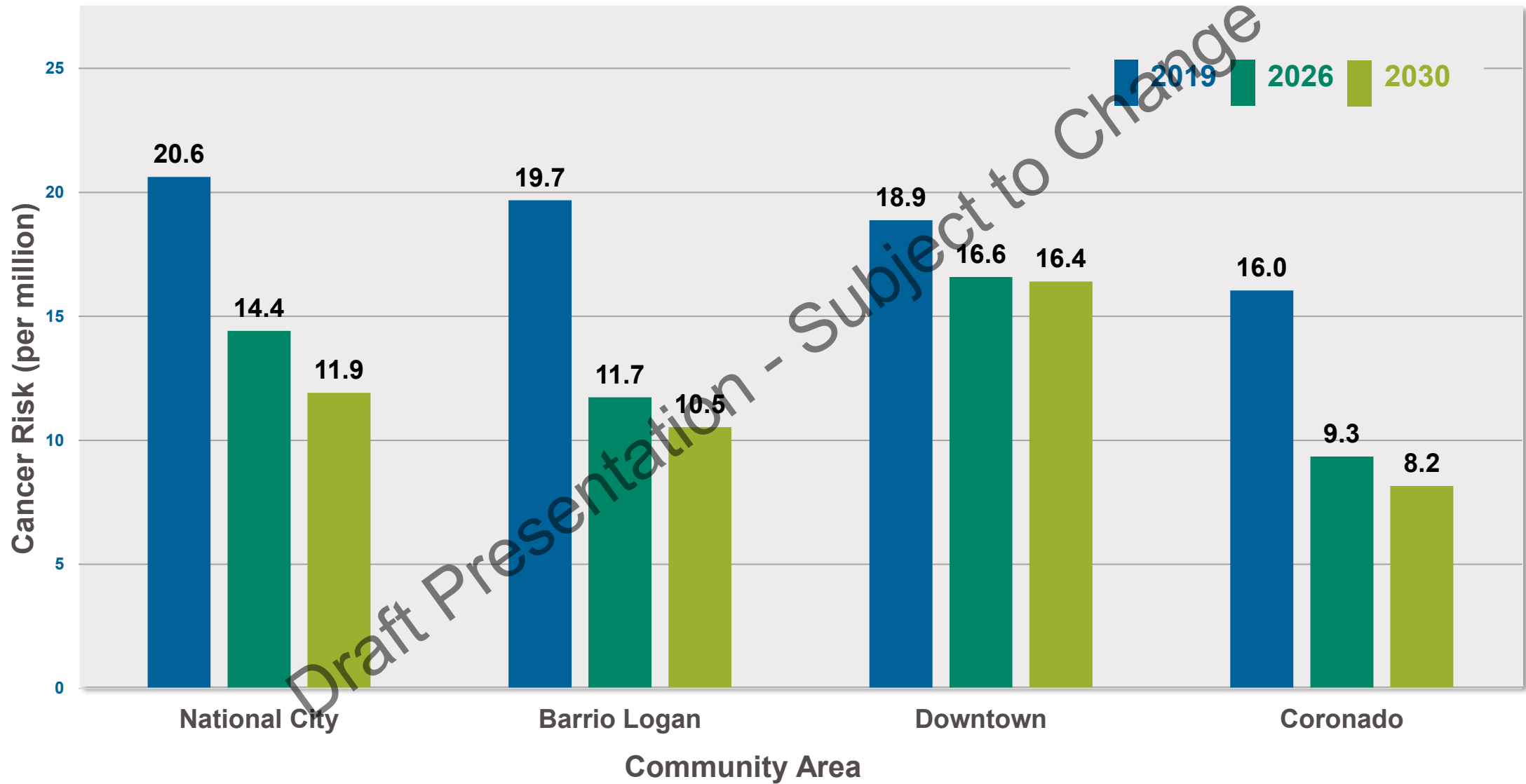
Rail	8.8
Ocean Going Vessels	2.9
Cargo Handling Equipment	1.5
Trucks	1.0
Harbor Craft	0.3
TOTAL	14.4

2030



Rail	8.8
Ocean Going Vessels	2.9
Cargo Handling Equipment	0.0
Trucks	0.0
Harbor Craft	0.3
TOTAL	11.9

2019 Baseline Comparison to Forecasted Risk With MCAS Modeling Inputs for 2026 and 2030



Current Projects

Dole – Five new ZE Yard Trucks

Acquired April 2022

First All-Electric Mobile Harbor Crane

Operational Summer 2023 (expected)

1st All Electric Tug in the United States

Operational Summer 2023 (expected)

Barge Based Bonnet

Public Private Partnership Agreement Authorized by Board in May 2022

Operational by 2025 (expected)

Shore Power

Install 2 plugs / alternative technology at NCMT

Operational by 2025 (expected)

Harbor Drive 2.0

Project Approval / Environmental Document - Dec 2023 (expected)

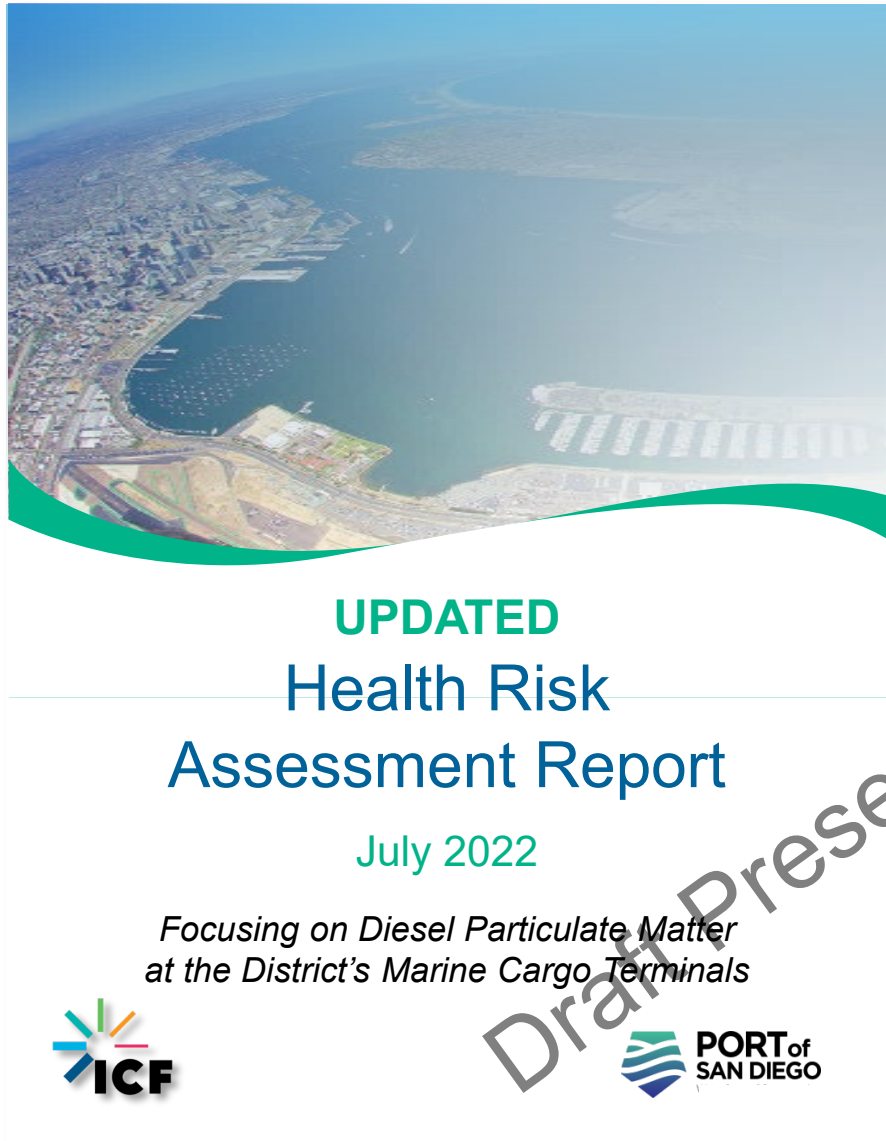
Final Design - Dec 2024 (expected)

Construction - Jan 2025 through Dec 2026 (expected)



Next Steps

- Post the Updated Health Risk Assessment on District's Website for 30 days (July 2022)
- Finalize Health Risk Assessment and Transmit to Board
- Continue to work with CARB and APCD as they finalize Regional Toxics Risk Modeling
- Stay engaged with AB 617 Steering Committee





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