



Bay Avenue & Hill Street Intersection City Council

February 2024



Kimley»»Horn

Project Objectives

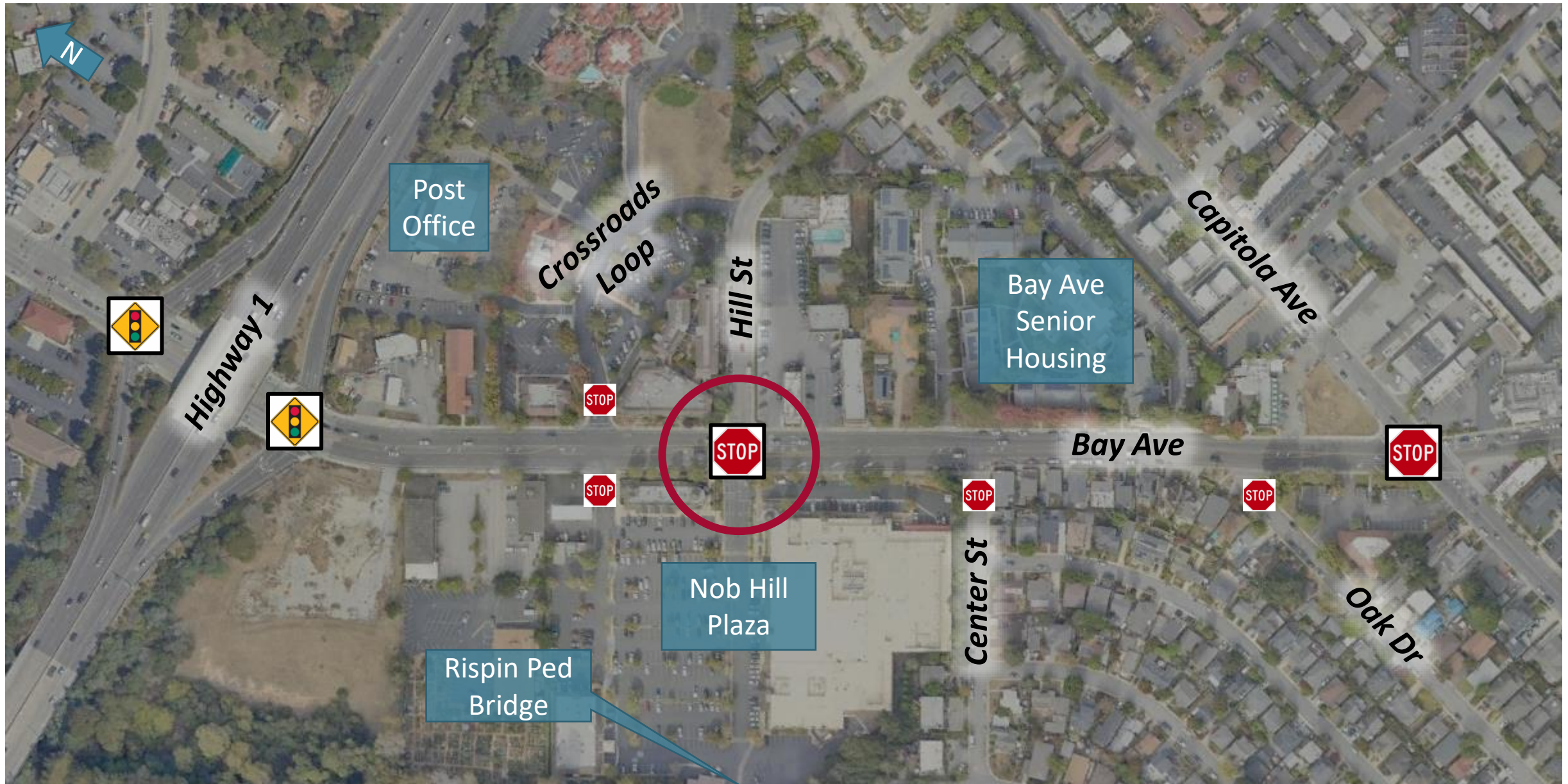
Determine feasible “Quick Build” improvements at Bay/Hill intersection to improve multimodal safety and operations

1. Gather community input
2. Utilize existing travel lanes to provide crossing improvements for bikes and pedestrians
3. Enhance bike and pedestrian access, safety, and visibility
4. Maintain acceptable traffic operations

Traffic Analysis Overview

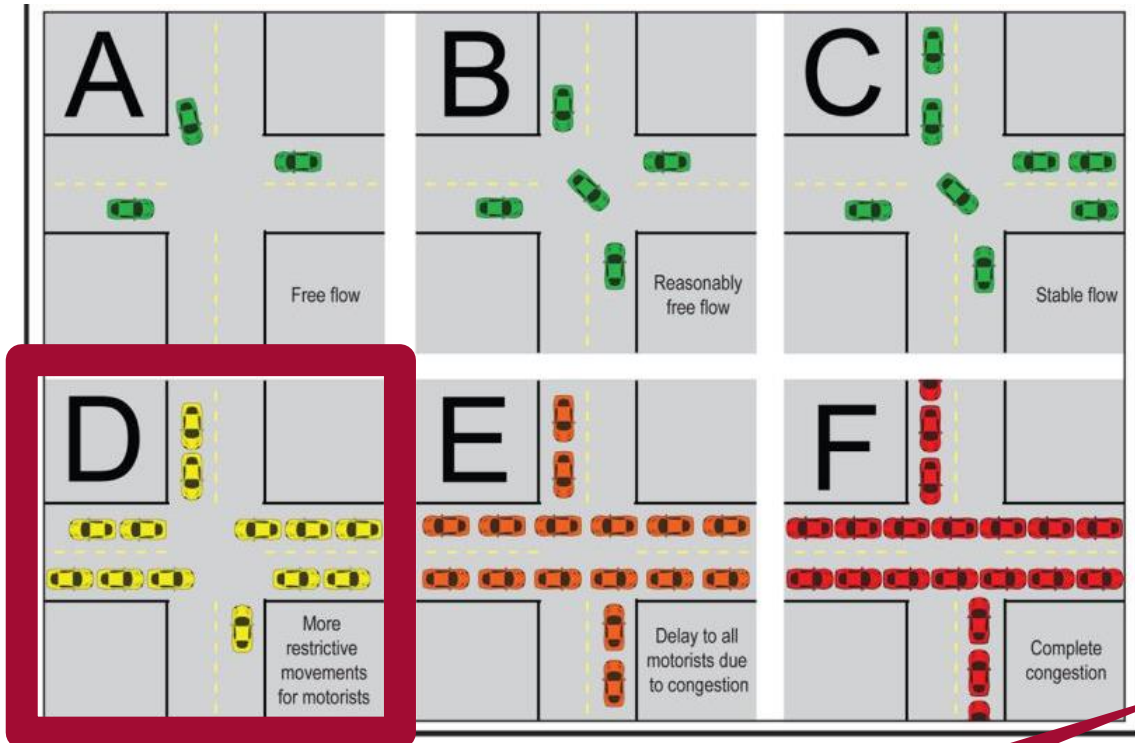
1. Existing Conditions and Traffic Data
2. Traffic Calming Toolbox
3. Public Outreach
4. “Quick-Build” Layout Alternatives
5. Next Steps & Council Direction

Existing Conditions



Level of Service (LOS)

- LOS is measured by average delay in seconds per vehicle
- LOS is not a measurement of safety



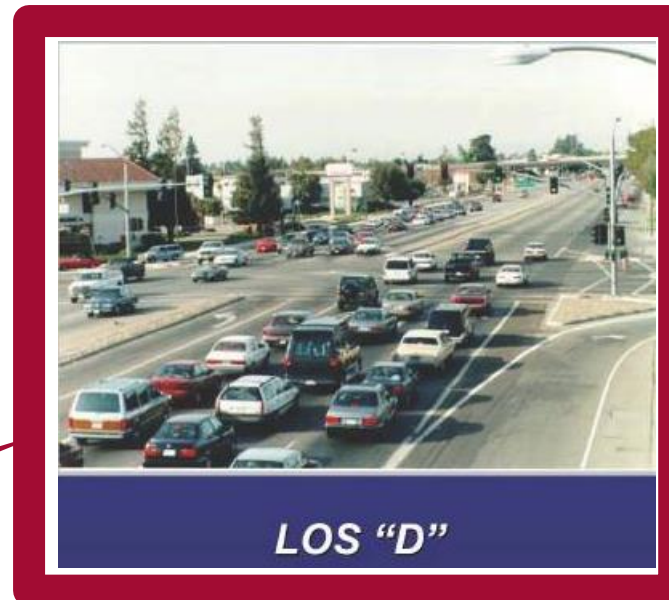
Capitola Standard
is LOS D



LOS "A"



LOS "C"



LOS "D"



LOS "F"

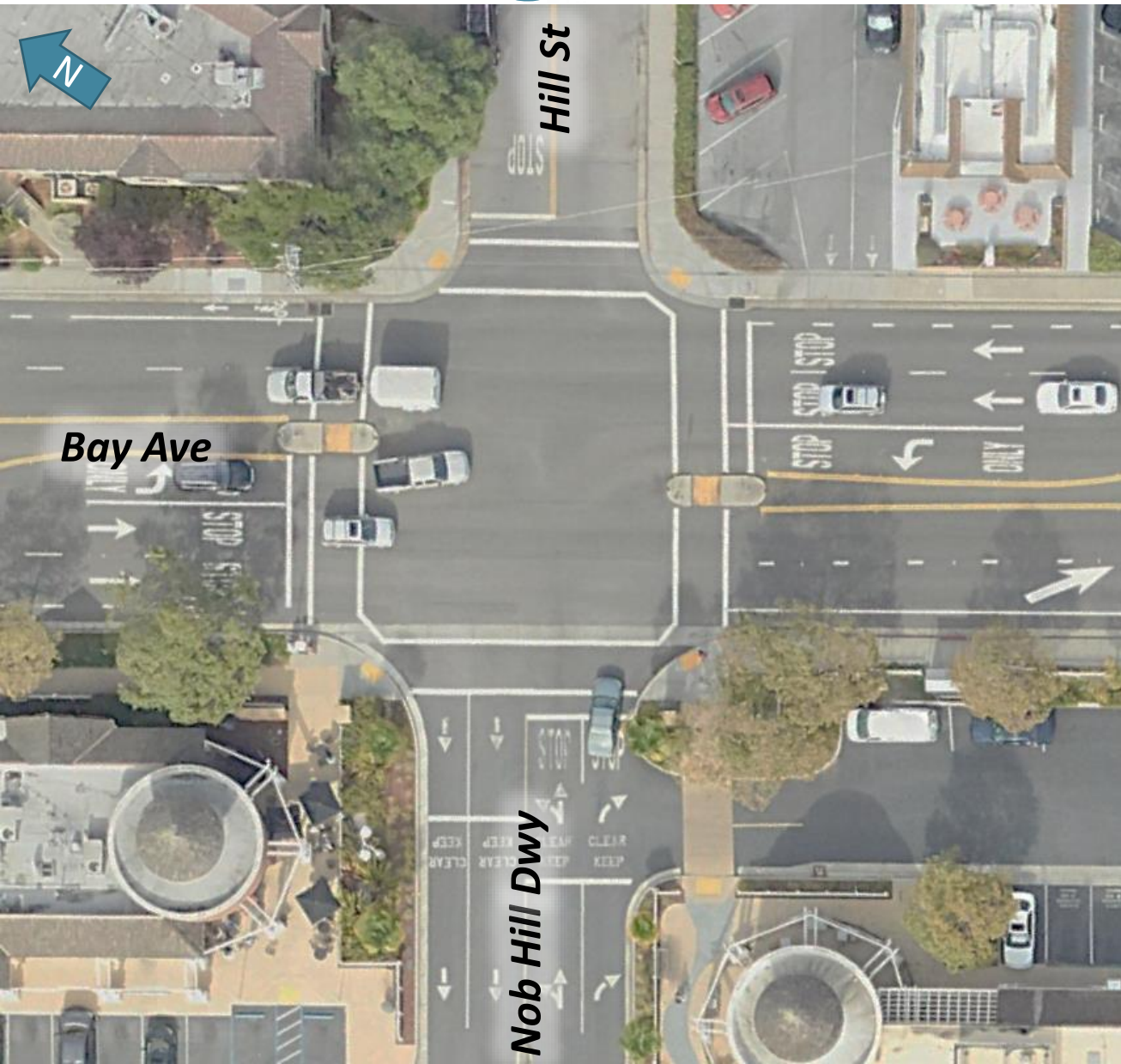
Existing Level of Service

AM LOS PM LOS

LOS Ranking A to F
LOS D is City Standard



Existing Conditions – Stop Control

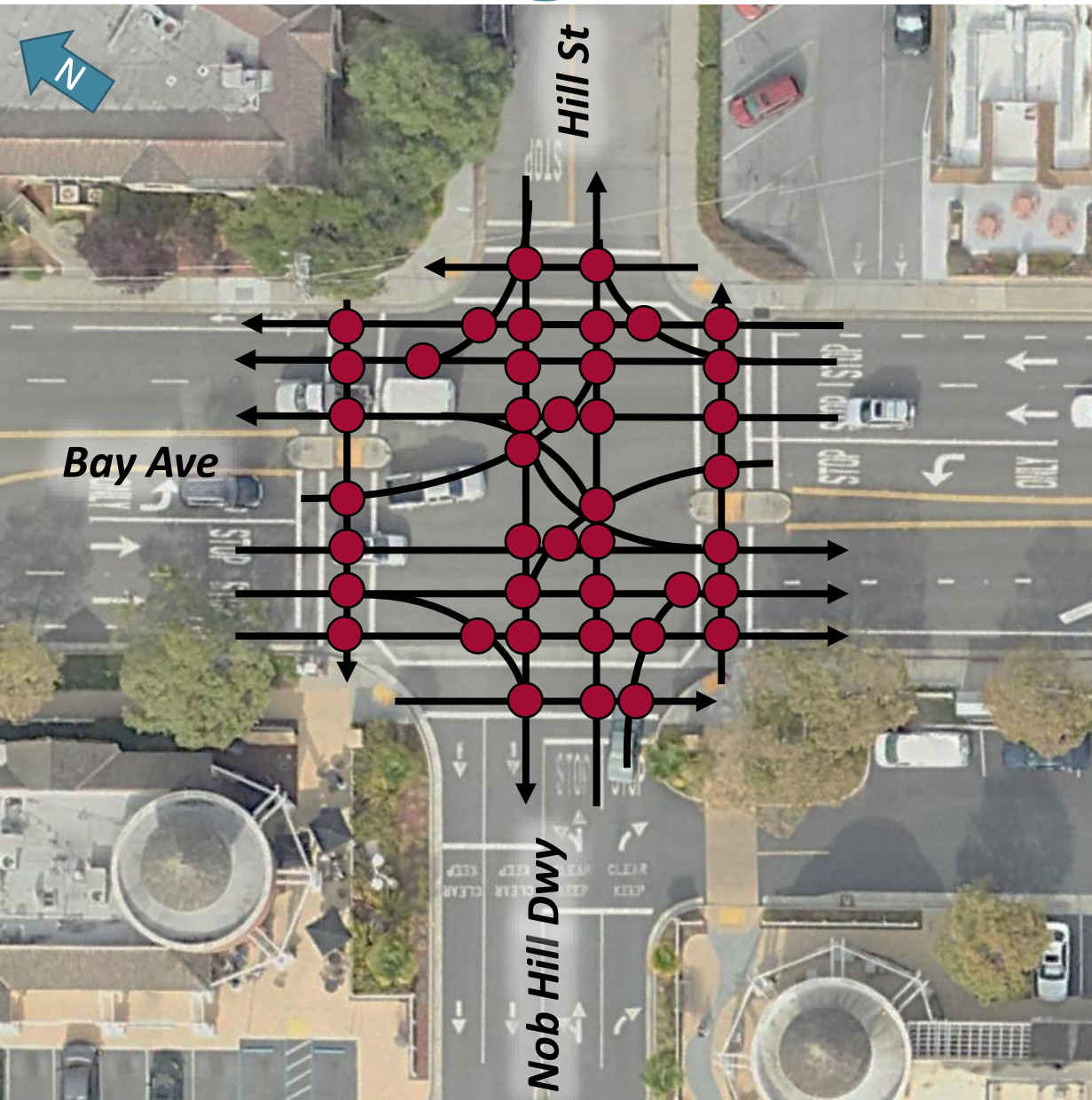


Multiple turn conflicts and limited visibility



Long pedestrian crossing distance

Existing Conditions – Conflicts

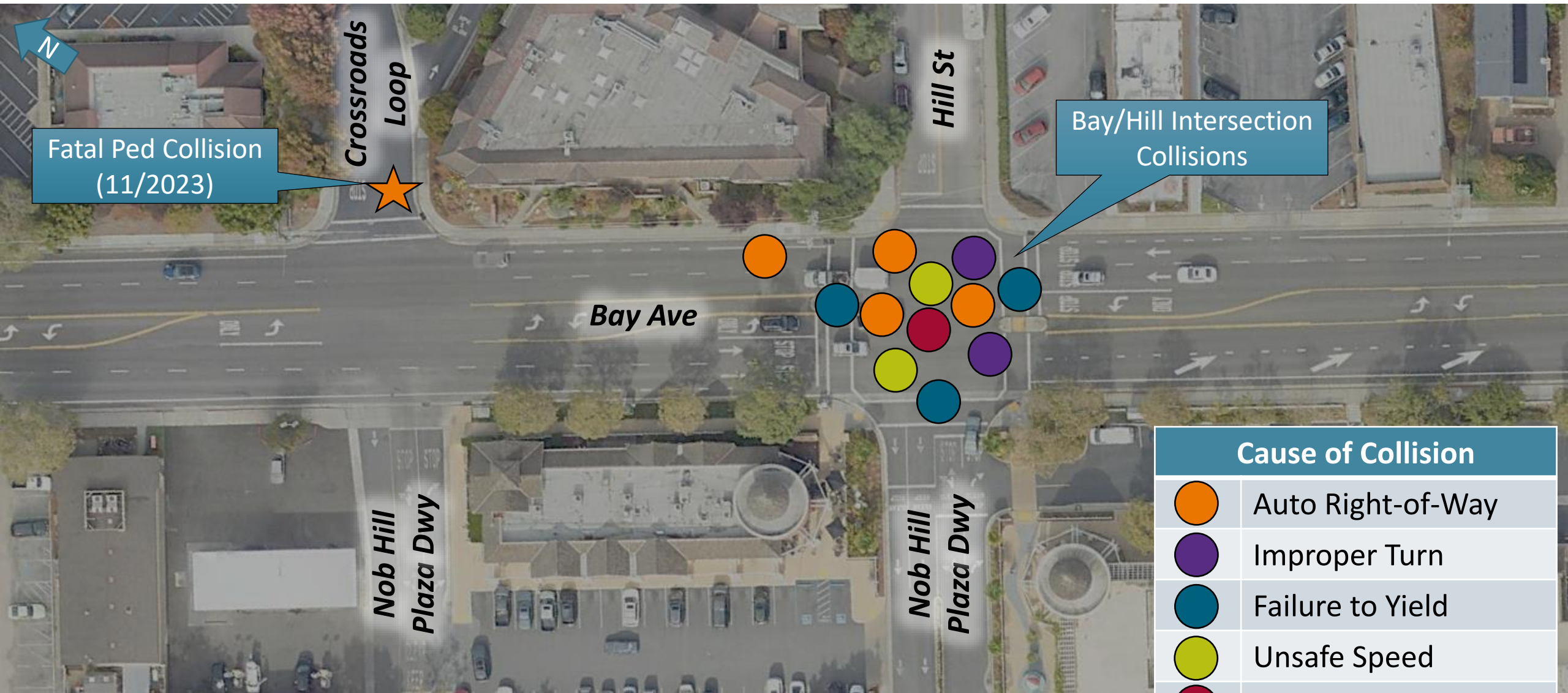


- 9 vehicle entry lanes and 41 potential conflict points at the intersection
- Multiple vehicle lanes cause:
 1. Multiple conflict points between vehicles, bikes, and pedestrians crossing the intersection
 2. Confusion of who has right-of-way
 3. Higher probability of accidents

Bay/Hill Collision Data (11/2017 – 12/2023)






Vehicle Collision Type	Count	Primary Collision Factor	Collision Severity
Head On	1	Other	Property Damage
Sideswipe	3	Improper Turn, Auto R/W	Property Damage
Broadside	4	Improper Turn, Auto R/W, Unsafe Speed	Injury, Property Damage
Hit Object	1	Improper Turn	Property Damage
Auto/Pedestrian	3	Failure to Yield	Injury
12 Total Vehicle Collisions			

Bay/Hill Collision Data (11/2017 – 12/2023)



Fatal Ped Collision
(11/2023)

Bay/Hill Intersection
Collisions

Cause of Collision	
	Auto Right-of-Way
	Improper Turn
	Failure to Yield
	Unsafe Speed
	Other

Travel Speed Impact to Pedestrian Fatality

● If hit by a person driving at:

● Person Survives the Collision

● Results in a Fatality



Source: ITE

Curb Extension and Road Diet



Curb Extension and Road Diet



Bike and Pedestrian Crossings



Signing Enhancements



LED Stop Signs are installed at Bay/Hill intersection

Public Outreach

- Subcommittee meetings with City staff and Council members
- Outreach with property owners
- Public workshop at Bay Avenue Senior Housing Community



Community Feedback

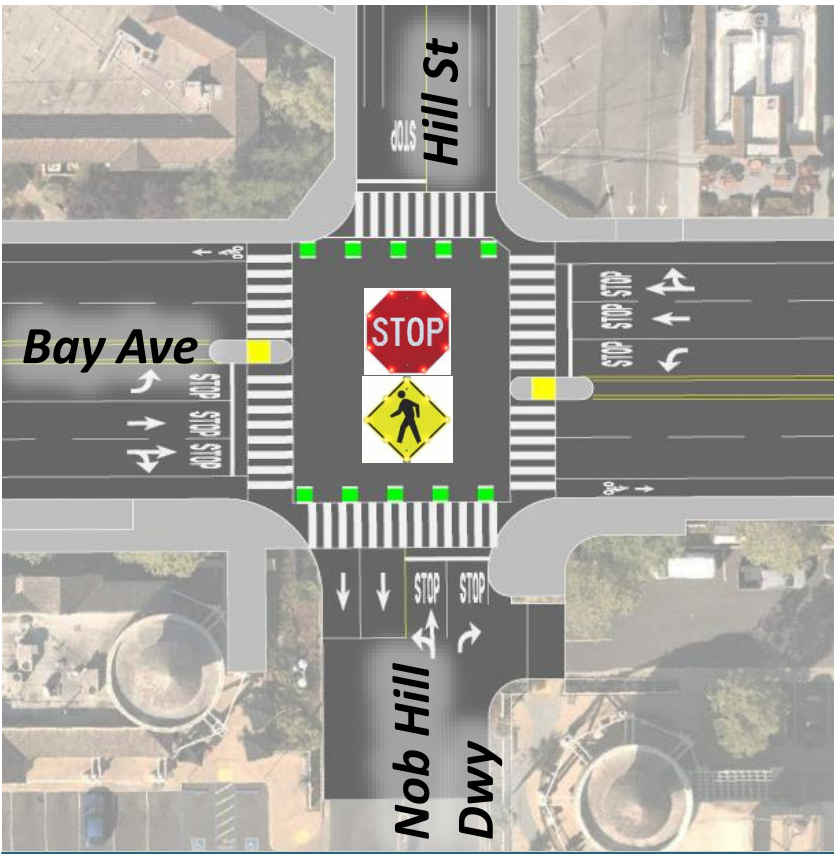
#	General Comment	Response / Recommendation
1	Community supports measures to improve bike and pedestrian visibility and safety	Proposed traffic calming improve multimodal access and safety
2	Community supports a solution that does not significantly impede access to adjacent properties	Proposed options maintain existing driveway access while improving bike/ped mobility
3	Community supports a solution that does not significantly impact vehicle operations	A traffic analysis was conducted for the Quick build options
4	Community supportive in a reduction of vehicle operations to improve road safety	Proposed options focus on enhancing bike/ped visibility and reducing exposure to oncoming traffic
5	Community raised concerns of street lighting and limited visibility at night	Proposed options to use retroreflective materials, street lighting to be a long-term improvement

Quick Build Layouts

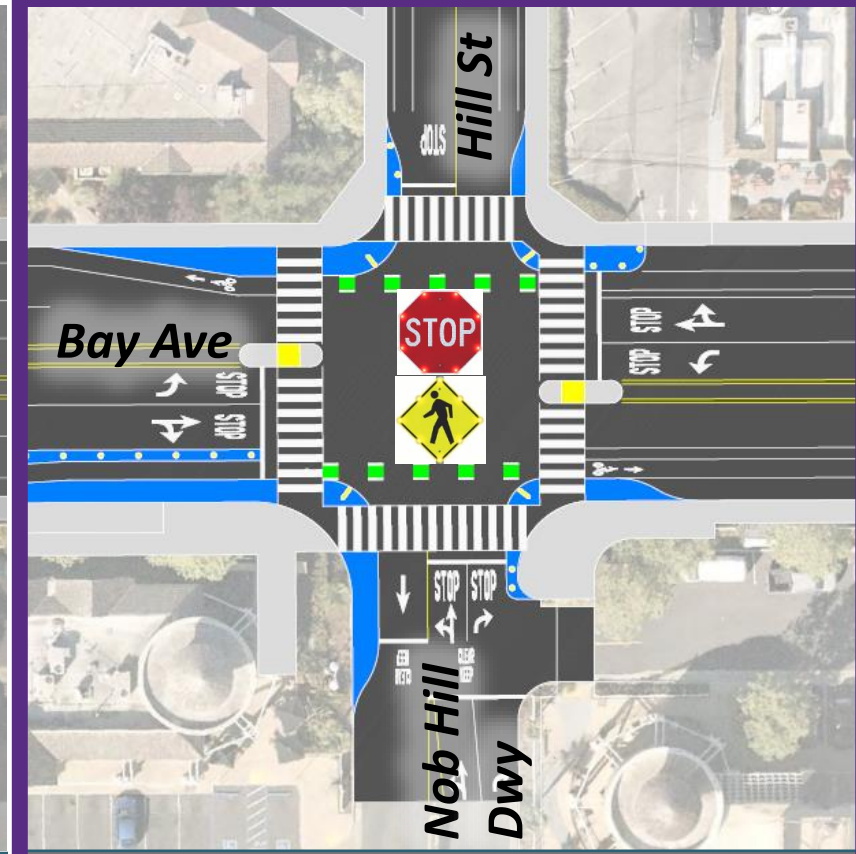
- Quick-build projects are reversible, adjustable traffic safety improvements that can be installed relatively quickly
- Quick-build projects are constructed within weeks or months and are intended to be evaluated and adjusted after construction.
- Potential for permanent or temporary interim installation



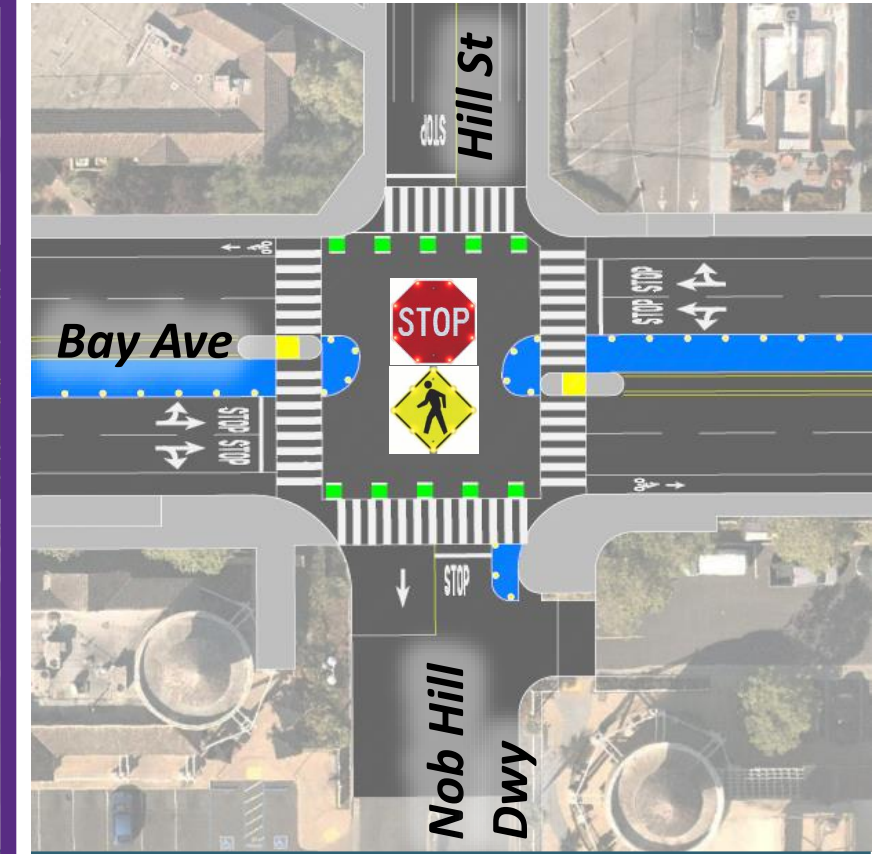
Quick Build Layouts



Option 1 – Signing & Striping

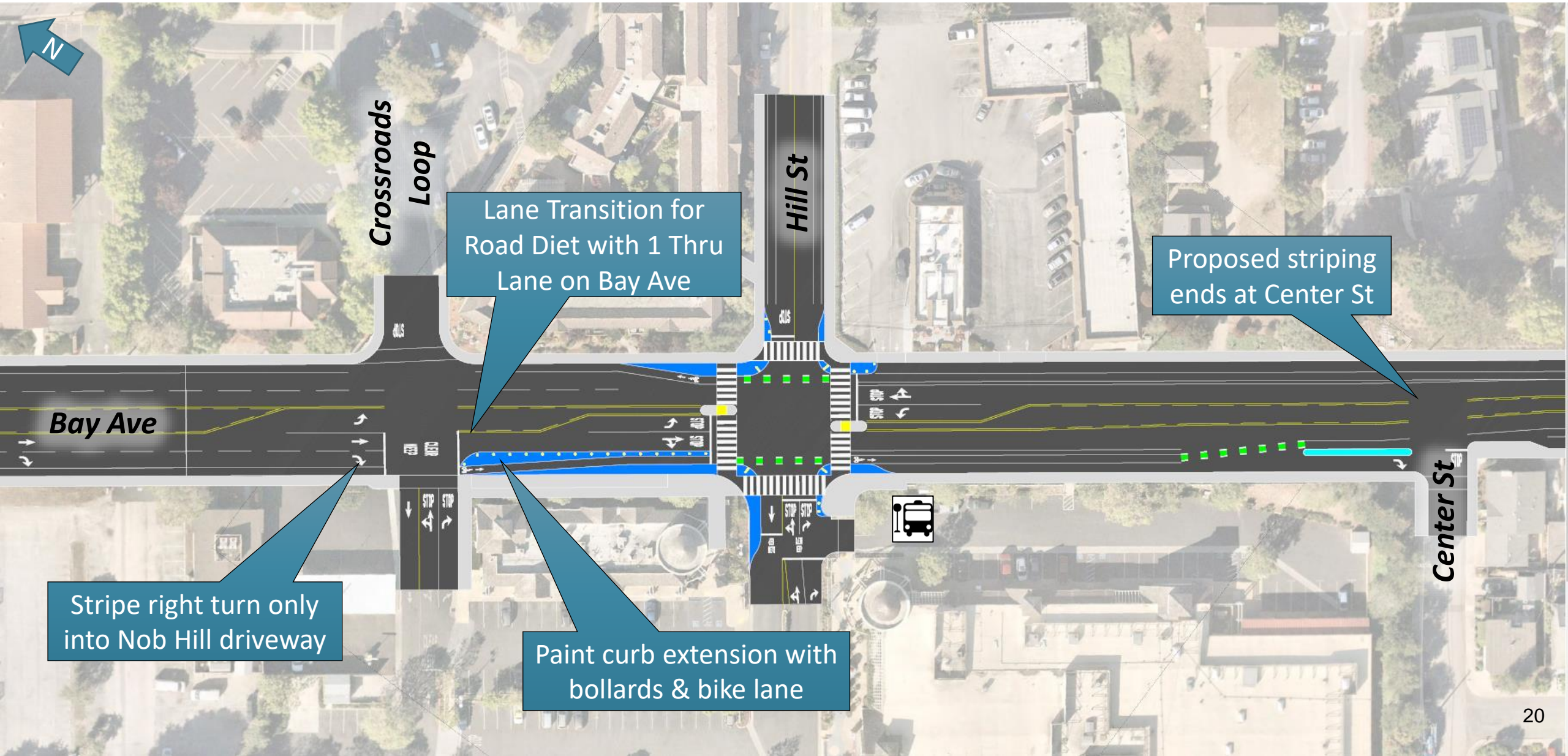


Option 2 – Road Diet



Option 3 – Median

Quick Build Option 2 – Road Diet



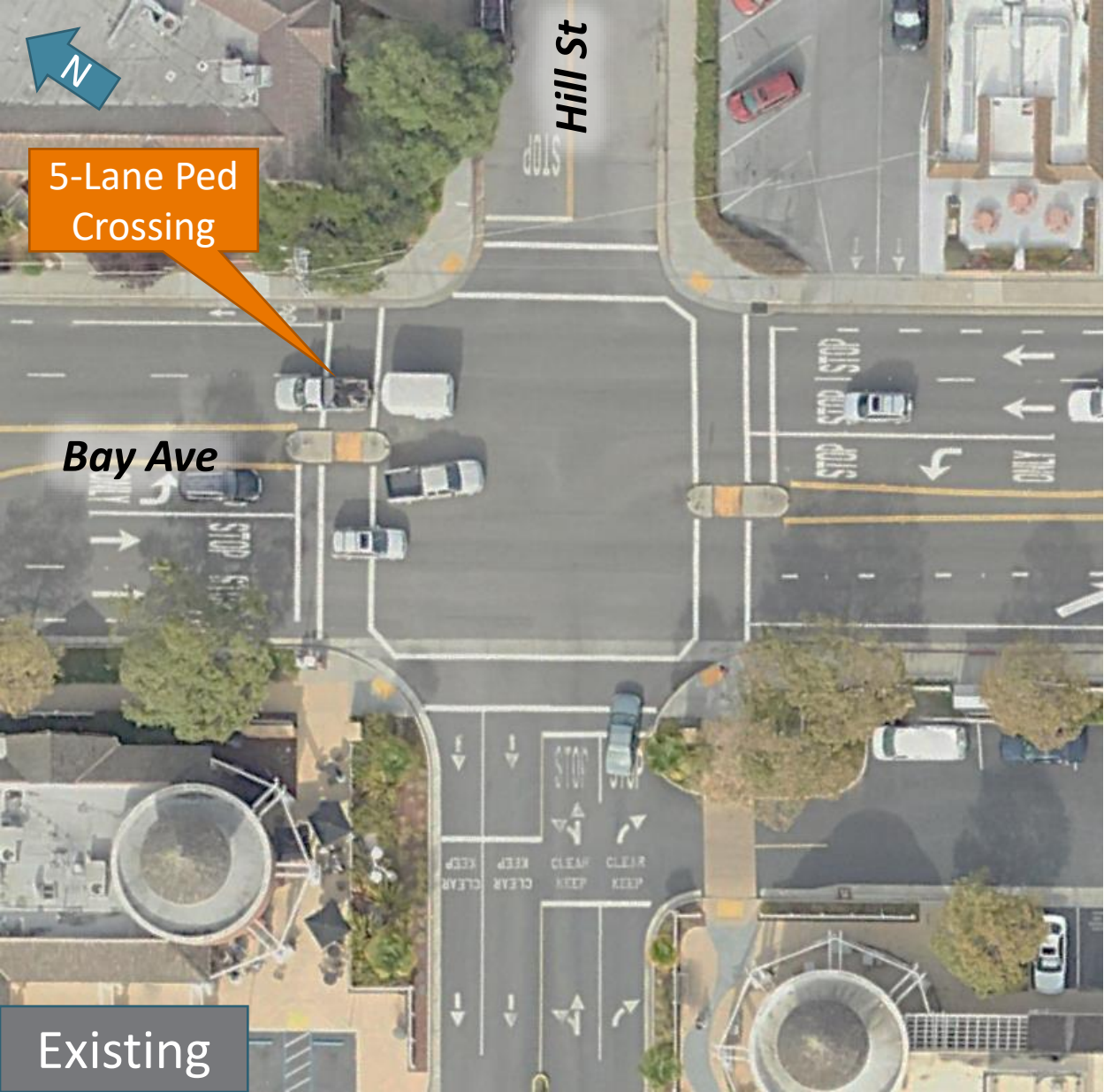
Lane Transition for Road Diet with 1 Thru Lane on Bay Ave

Proposed striping ends at Center St

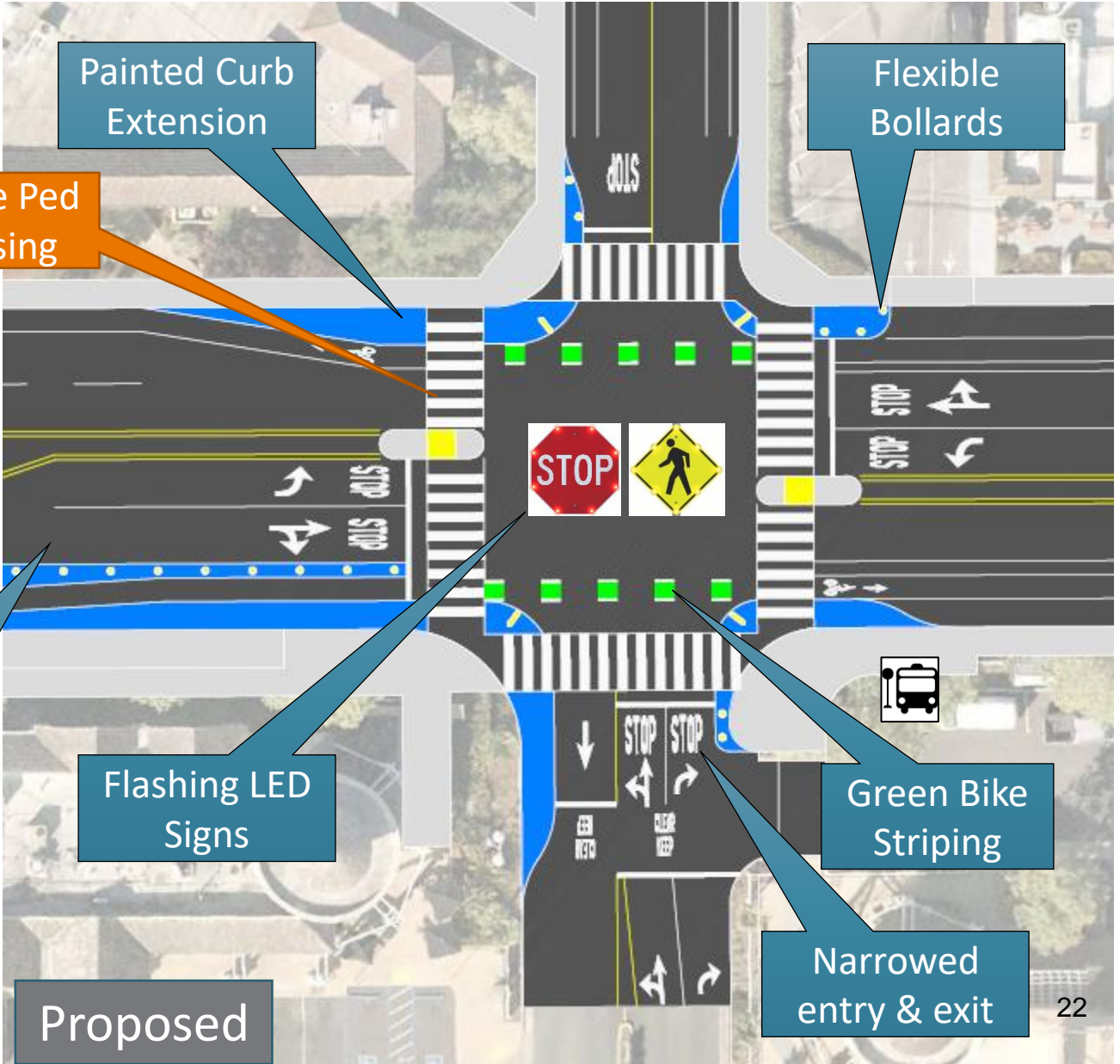
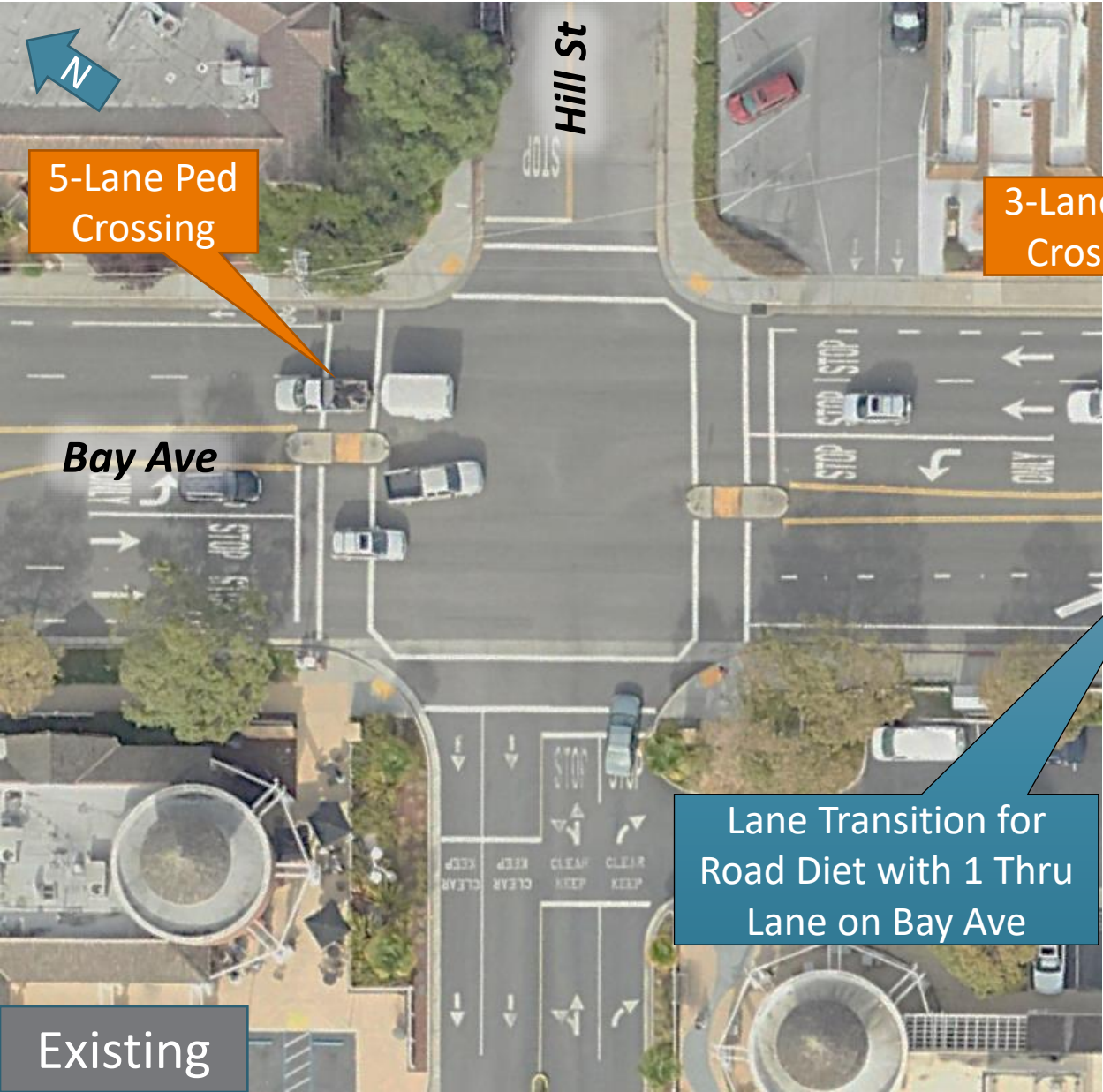
Stripe right turn only into Nob Hill driveway

Paint curb extension with bollards & bike lane

Quick Build Option 2 – Road Diet

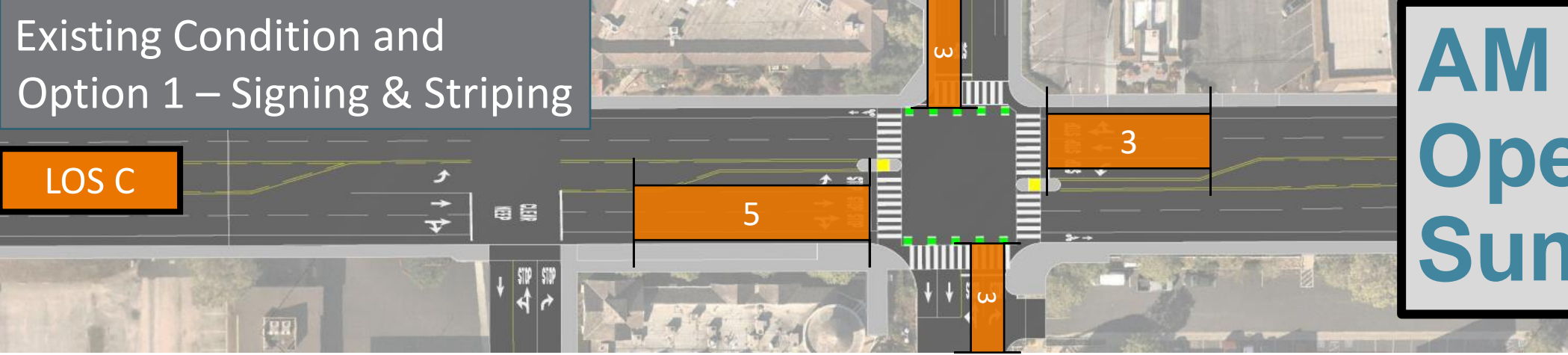


Quick Build Option 2 – Road Diet



Existing Condition and Option 1 – Signing & Striping

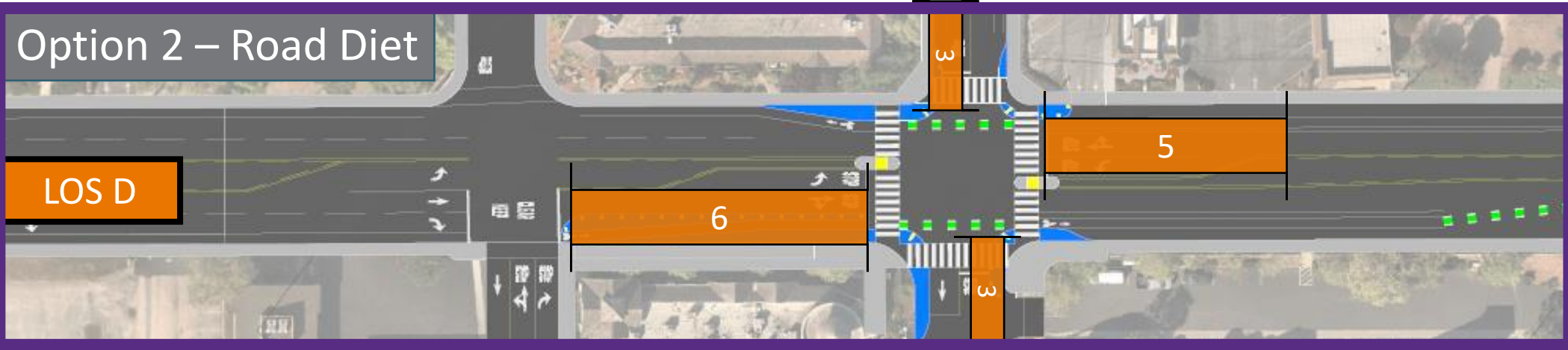
LOS C



AM Traffic Operations Summary

Option 2 – Road Diet

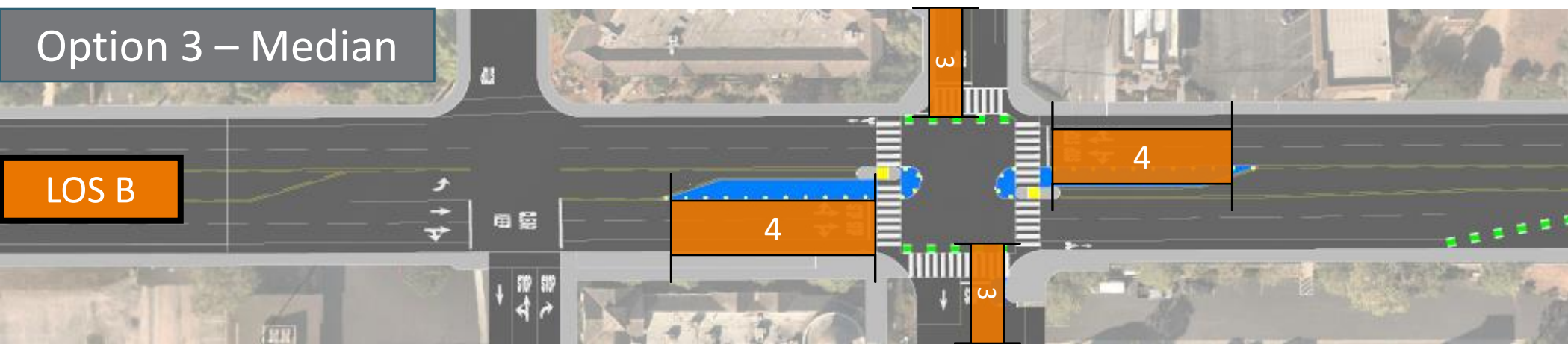
LOS D



95% Queue (# cars)

Option 3 – Median

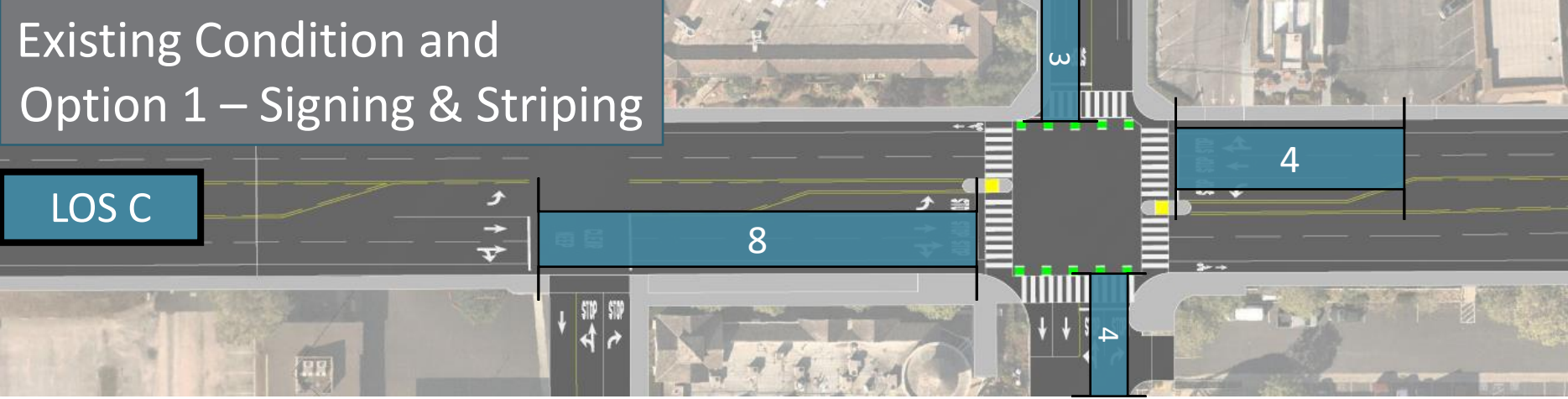
LOS B



Midday Traffic Operations Summary

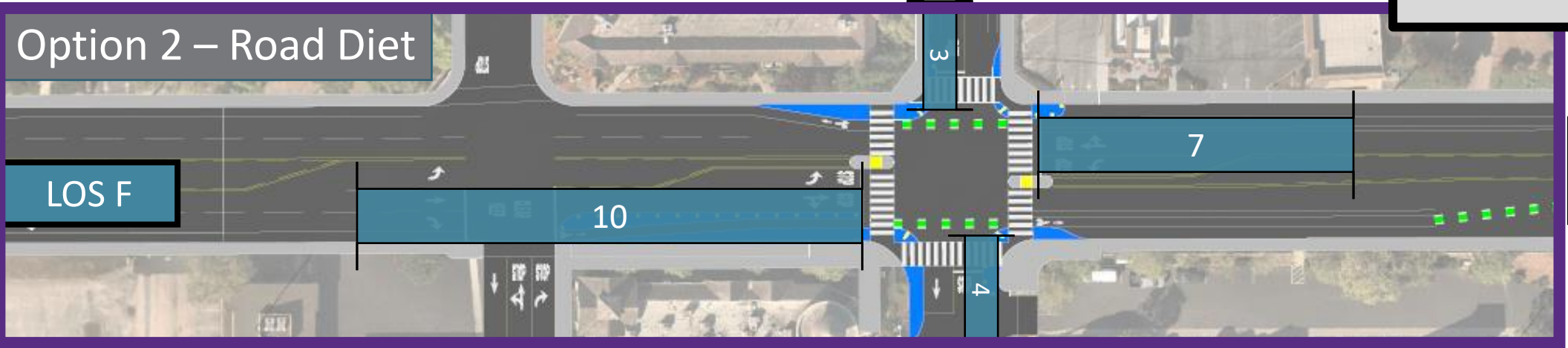
Existing Condition and Option 1 – Signing & Striping

LOS C



Option 2 – Road Diet

LOS F



95% Queue (# cars)

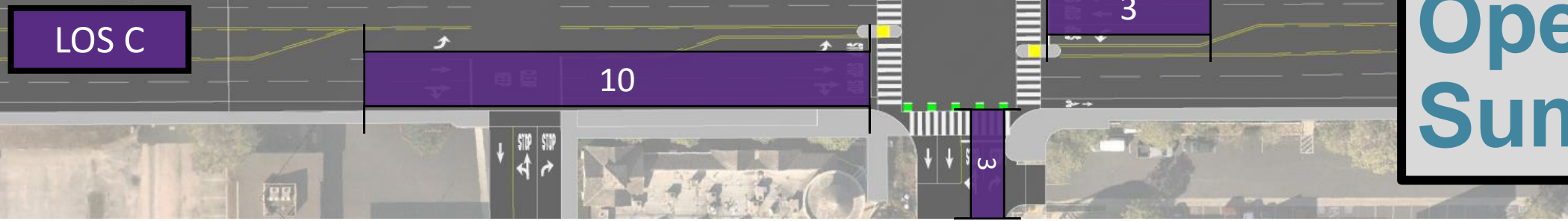
Option 3 – Median

LOS C



PM Traffic Operations Summary

Existing Condition and Option 1 – Signing & Striping

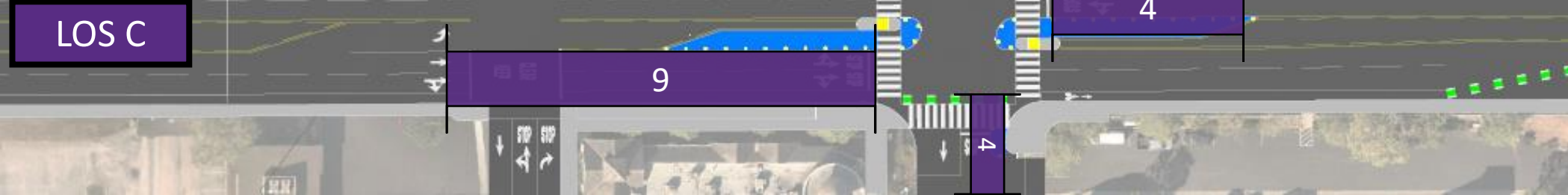


Option 2 – Road Diet



95% Queue (# cars)

Option 3 – Median



Quick Build Option Summary

Preferred
Option

Criteria	Existing Intersection	Option 1 Signing & Striping	Option 2 Road Diet	Option 3 Median
Bike & Pedestrian Safety & Visibility	<u>Low</u> 41 conflict points	<u>Medium</u> 41 conflict points Marked crossings	<u>High</u> 32 conflict points Marked crossings Curb extensions Bike lane buffer	<u>Medium</u> 38 conflict points Marked crossings Wider ped median
Pedestrian Crossing Exposure	<u>High</u> 5-lane crossing	<u>High</u> 5-lane crossing	<u>Low</u> 3-lane crossing	<u>Medium</u> 4-lane crossing
Intersection Level of Service	<u>Good</u> AM Peak: <u>C</u> Midday: <u>C</u> PM Peak: <u>C</u>	<u>Good</u> AM Peak: <u>C</u> Midday: <u>C</u> PM Peak: <u>C</u>	<u>Ok</u> AM Peak: <u>C</u> Midday: <u>F</u> PM Peak: <u>D</u>	<u>Good</u> AM Peak: <u>B</u> Midday: <u>C</u> PM Peak: <u>C</u>
Impact to Vehicle Queues	Low	Low	Medium	Medium

Next Steps

Short Term

- City Council direction on Quick Build Option
- Spring 2024 to Summer 2025: Quick Build improvements and evaluation period

Long Term

- 2024: Bay Avenue Corridor Safety Study
- On-going: Pursue funding opportunities
- Summer 2026 earliest: Bay Avenue corridor improvements pending available funds

Recommended Action

- Authorize construction of the proposed Bay Avenue/Hill Street intersection quick-build project