

GIBBONS/HIGH/FERNSIDE INTERSECTION EVALUATION AND TRAFFIC STUDY OVERVIEW

Intersection Traffic Study

INTERSECTION SAFETY ISSUES

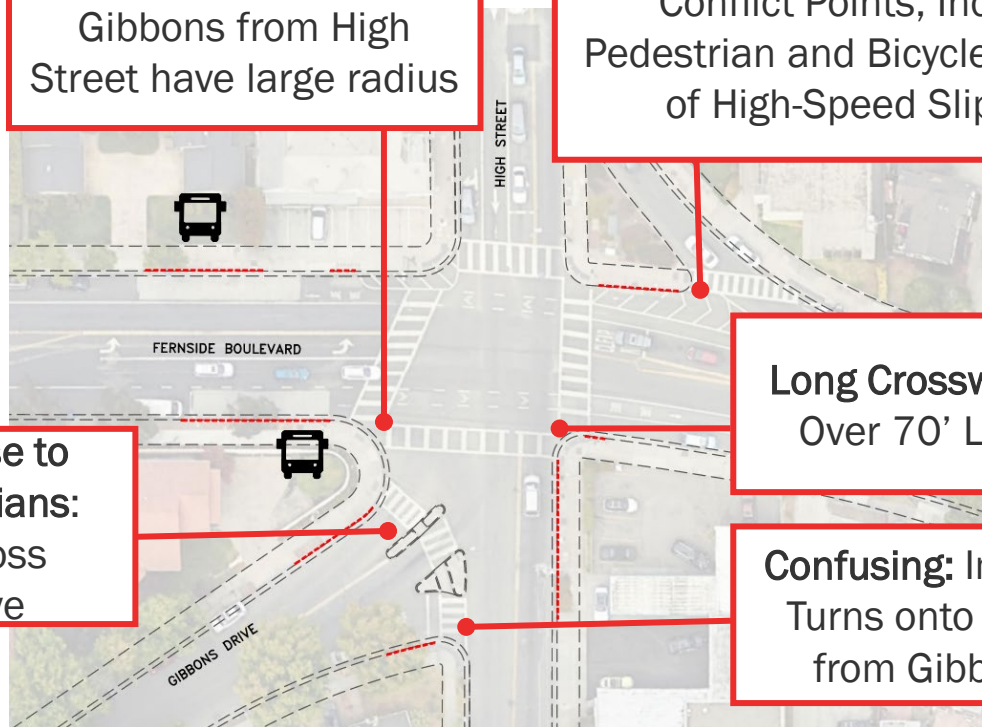
High-Speed: Turns onto Gibbons from High Street have large radius

Complicated Layout: Many Conflict Points, Including Pedestrian and Bicycle Crossings of High-Speed Slip Lane

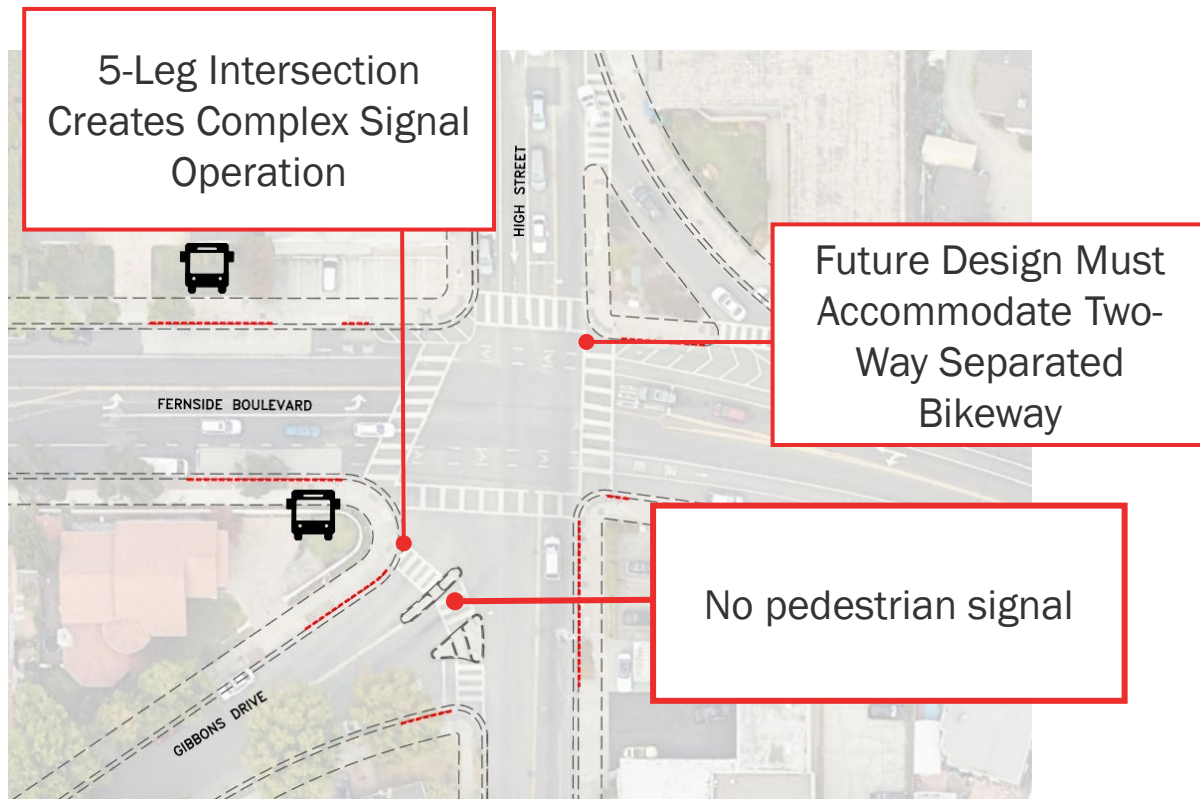
No Signal Phase to Protect Pedestrians:
Difficult to Cross Gibbons Drive

Long Crosswalks:
Over 70' Long

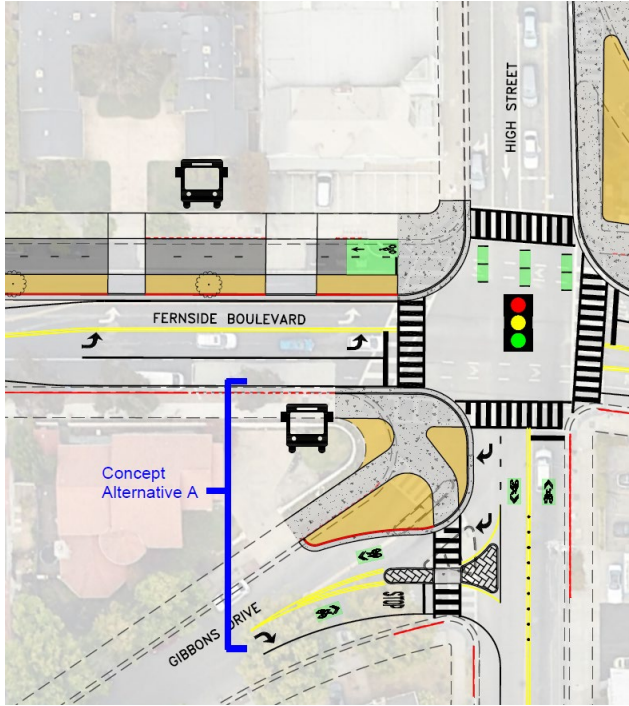
Confusing: Improper Left Turns onto High Street from Gibbons Drive



INTERSECTION OPERATIONS AND SIGNAL PHASING ISSUES



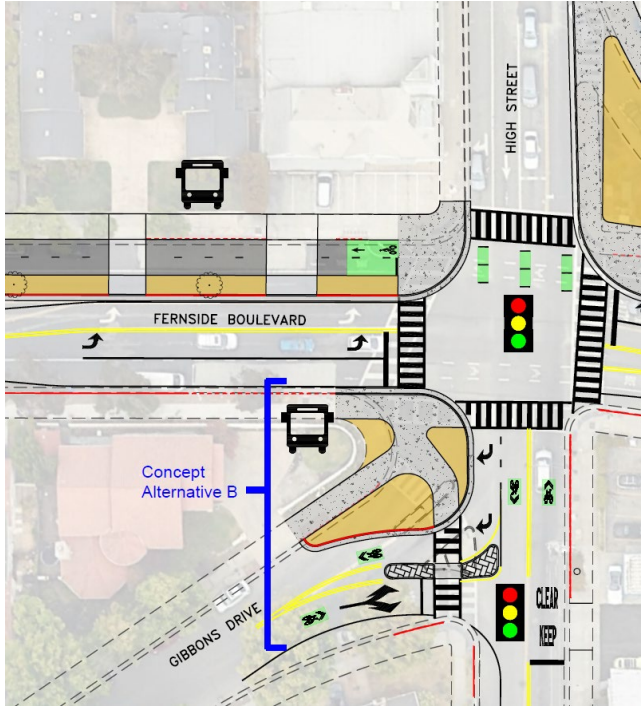
ALTERNATIVE A. REALIGN AND RESTRICT LEFT TURN



Description:

- Realigns Gibbons at High Street
- Restricts Gibbons exit to right only on High Street
- Shortens long pedestrian crossings
- Reduces turn radius onto Gibbons

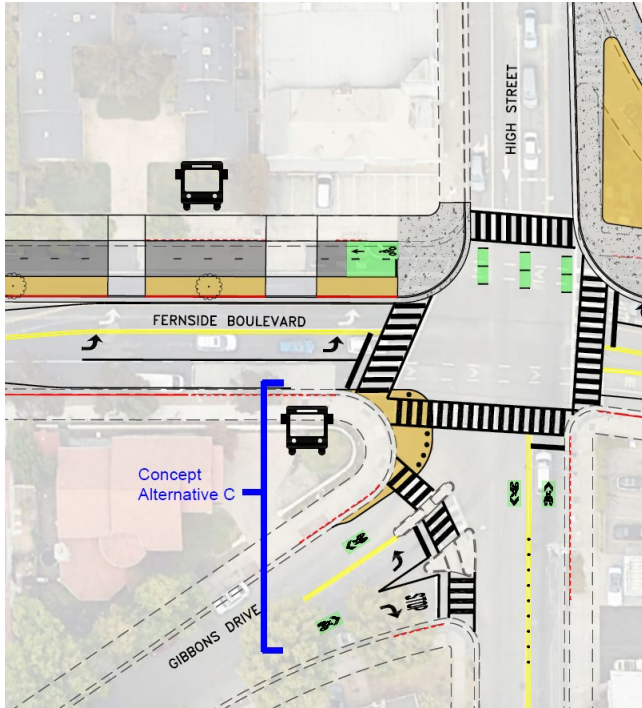
ALTERNATIVE B. REALIGN AND ALLOW LEFT TURN



Description:

- Realigns Gibbons at High Street
- Allows Gibbons exit right and left on High Street with a new signal
- Shortens long pedestrian crossings
- Reduces turn radius onto Gibbons

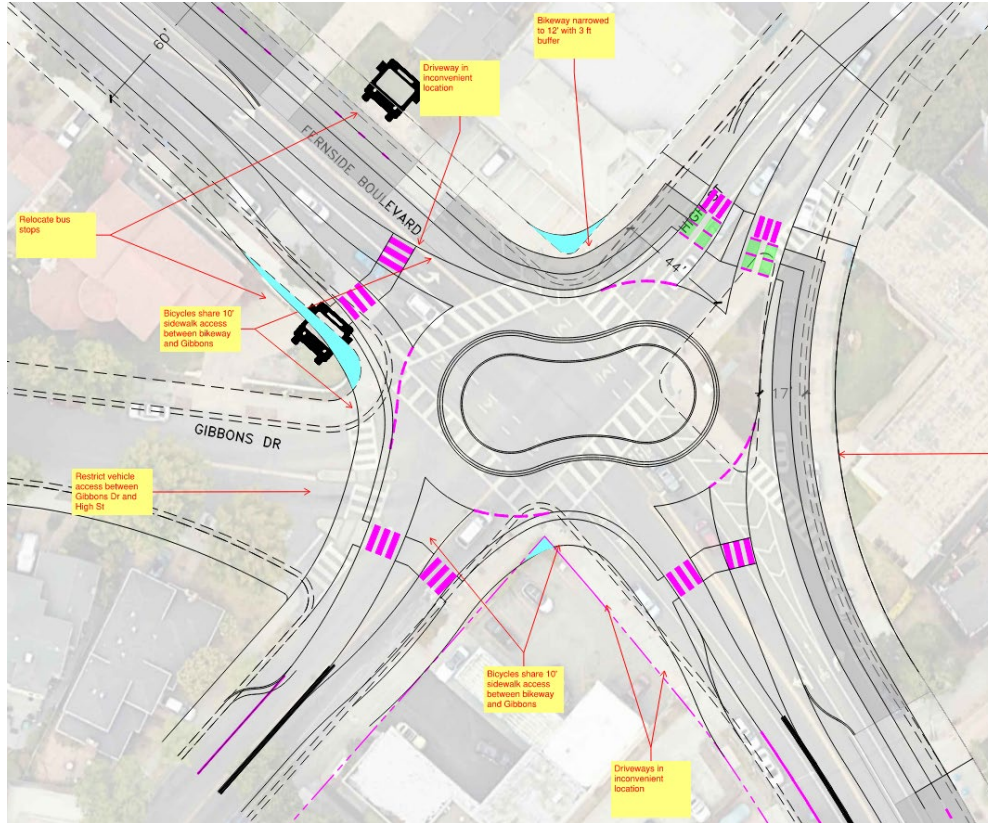
ALT C. LOW-COST IMPROVEMENTS



Description:

- No change to Gibbons alignment
- Adds a pedestrian signal crossing Gibbons Drive only in long-term implementation
- Reduces turn radius onto Gibbons with painted curb extension

INSUFFICIENT RIGHT OF WAY FOR ROUNDABOUT



Roundabout analyzed but not recommended:

- *Insufficient room for Gibbons leg*
- *Lengthened paths of pedestrian and bicycle travel*
- *Non-traditional lane configuration*
- *Right-of-way impacts*

TRAFFIC STUDY ANALYSES



Analysis 1

**Intersection Safety
and Operations**



Analysis 2

**Neighborhood
Traffic Circulation**



Analysis 1.

Intersection Safety and Operations

INTERSECTION ANALYSIS KEY QUESTION

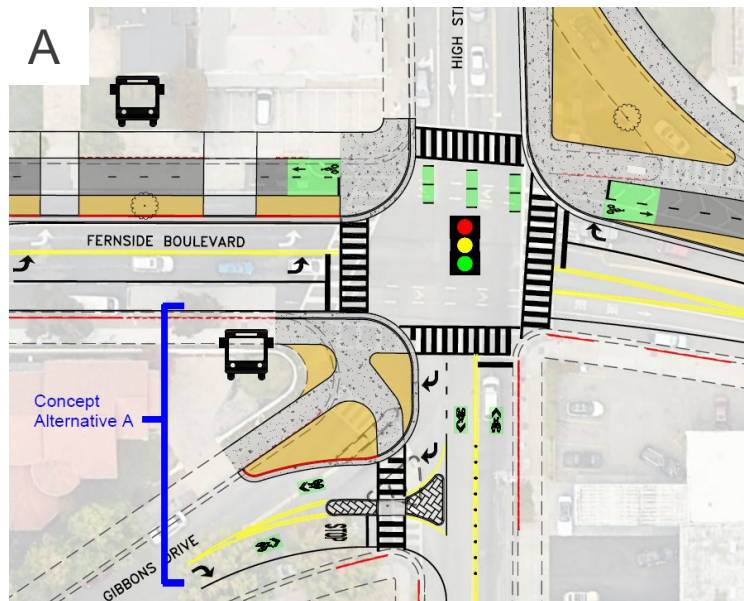


How well do the design alternatives improve safety and simplify traffic operations at Gibbons/High/Fernside?

Analysis takes alternatives in the context of the long-term Fernside Boulevard corridor design with the two-way bikeway.



ANALYSIS RESULTS: ALTERNATIVE A (TURN RESTRICTION)



Safety: Addresses Key Issues

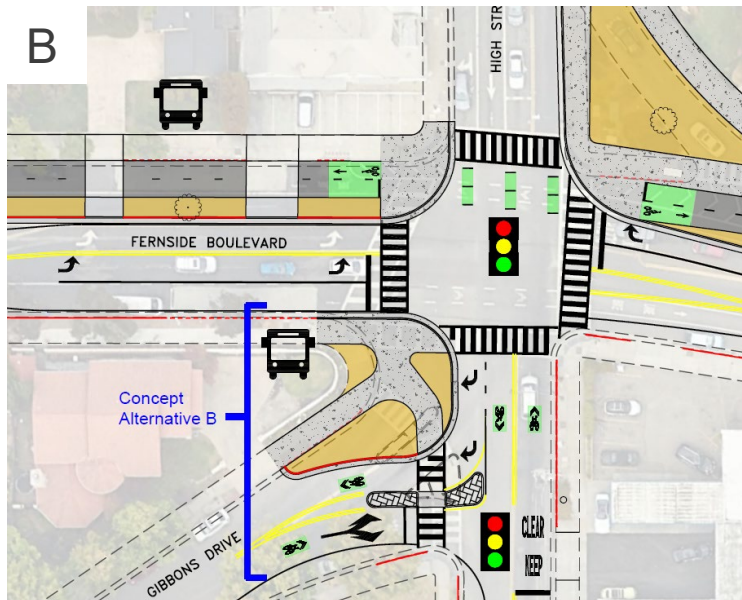
- Shorter pedestrian crossings
- Slowed vehicle turn speed
- Simplified intersection layout reduces number of conflict points



Operations: Minimal Change to Congestion

- Simplifies intersection with fewer signal approaches requiring dedicated phases
- In the near term, reduces traffic congestion
- Allows for addition of bikeway with minimal change to traffic congestion in long term

ANALYSIS RESULTS: ALTERNATIVE B (NEW SIGNAL)



Safety: Addresses Key Issues

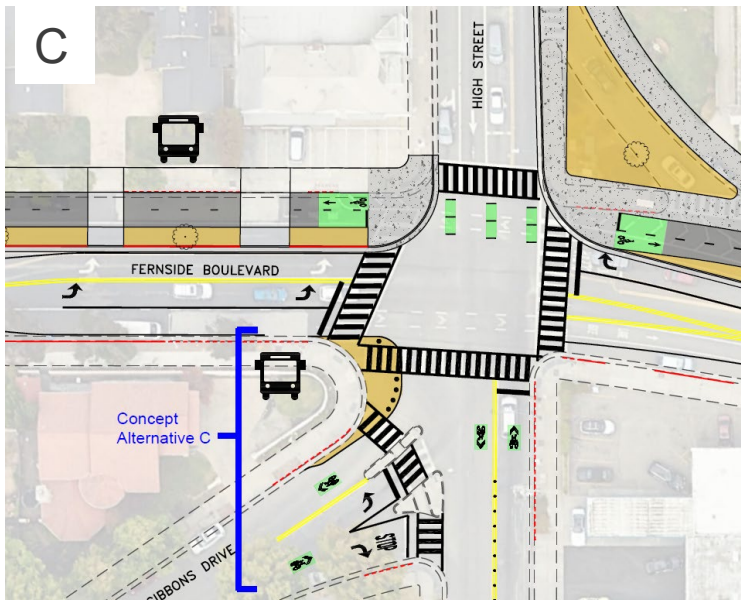
- Shorter pedestrian crossings
- Slowed vehicle turn speed
- Simplified intersection layout



Operations: Severe Congestion in Long Term

- In the near term, makes traffic congestion worse on High Street because of the additional signal.
- With long term addition of bikeway, makes traffic congestion on High Street much worse, risking spillover onto other neighborhood streets.

ANALYSIS RESULTS: ALTERNATIVE C (LOW COST)



Safety: Addresses Some Issues

- Slower vehicle turn speed



Operations: Severe Congestion in Long Term

- In the near term, traffic congestion would stay the same with paint-only changes.
- With long term addition of bikeway, makes traffic congestion on High Street worse because of the additional pedestrian signal.

INTERSECTION ALTERNATIVES SUMMARY



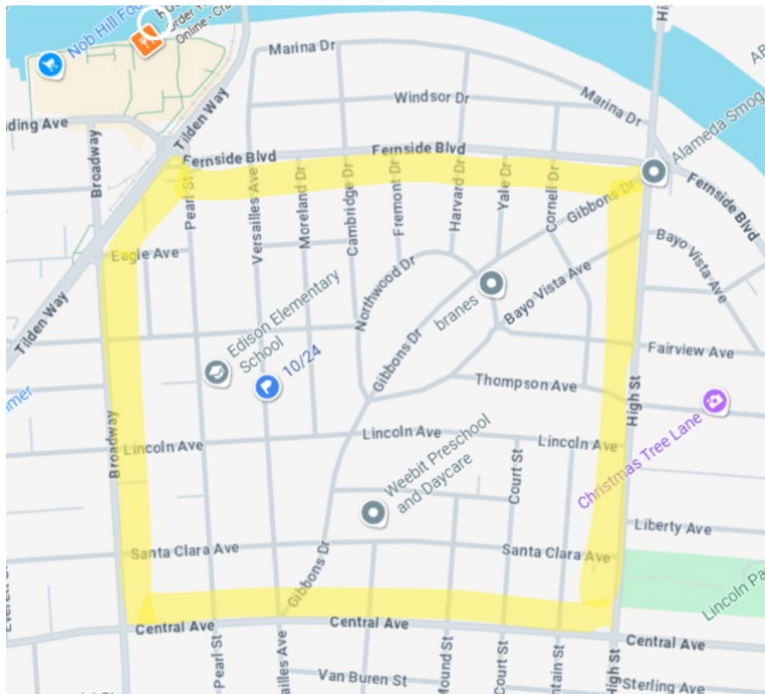
Alternative	Safety	Congestion: Near-Term	Congestion: Long-Term
A	 Improvement	 Improvement	Minimal Change
B	 Improvement	 Worse	 Worse
C	 Minor Improvement	No Change	 Worse



Analysis 2.

Neighborhood Traffic Circulation (with Alt. A)

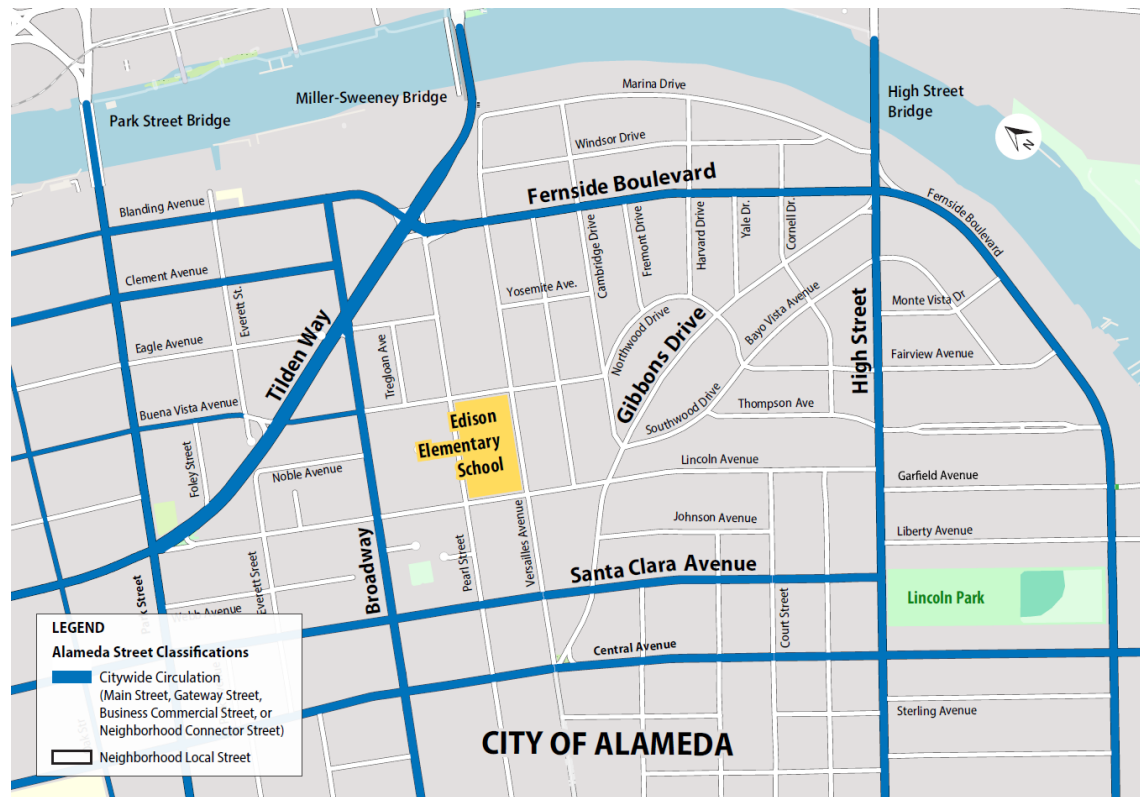
TRAFFIC CIRCULATION ANALYSIS KEY QUESTION



What effect does the turn restriction in Alternative A have on cut-through traffic, and how will traffic redistribute in the neighborhood?

Traffic circulation for Alternatives B & C not studied because they don't have a turn restriction.

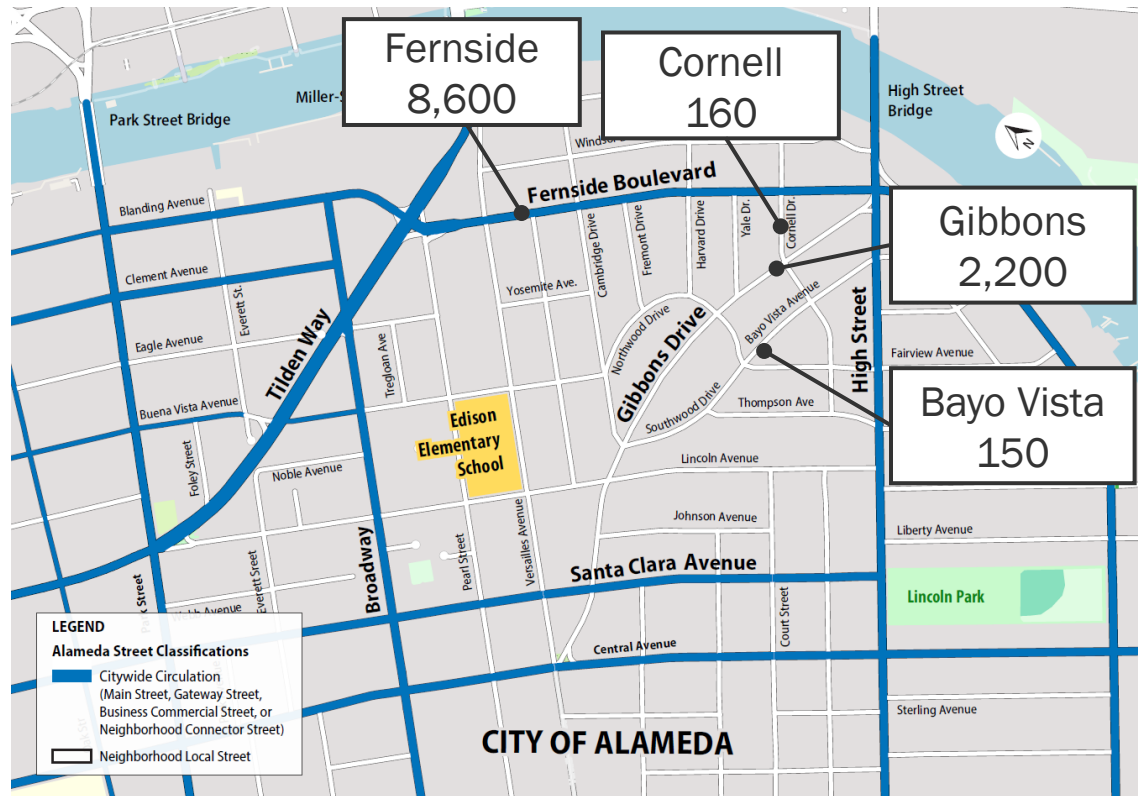
EXISTING NEIGHBORHOOD CIRCULATION



All streets inside the study area are classified as **Neighborhood Local Streets**:

- Target design speed 20 mph
- Target traffic volumes <1,000-4,000 vehicles per day
- Neighborhood Greenway targets <1,500 vehicles per day

EXISTING ESTIMATED DAILY TRAFFIC VOLUMES



Neighborhood Local traffic volumes <1,000-4,000* vehicles per day

Neighborhood Connector traffic volumes 4,000-18,000* vehicles per day

*High end of target ranges are the maximum capacity of each classification

GIBBONS DRIVE EXISTING TRAFFIC



31 mph

85th percentile speed



>55%

Northbound vehicles
cutting through



With the Alternative A left turn restriction, how will drivers who use Gibbons Drive today access High Street?

The analysis assumes redistribution through the neighborhood based on:

- Distance
- Street characteristics
- Number of turns and stop signs
- Street parking occupancy

RESULTS: ALTERNATIVE A TRAFFIC REDISTRIBUTION



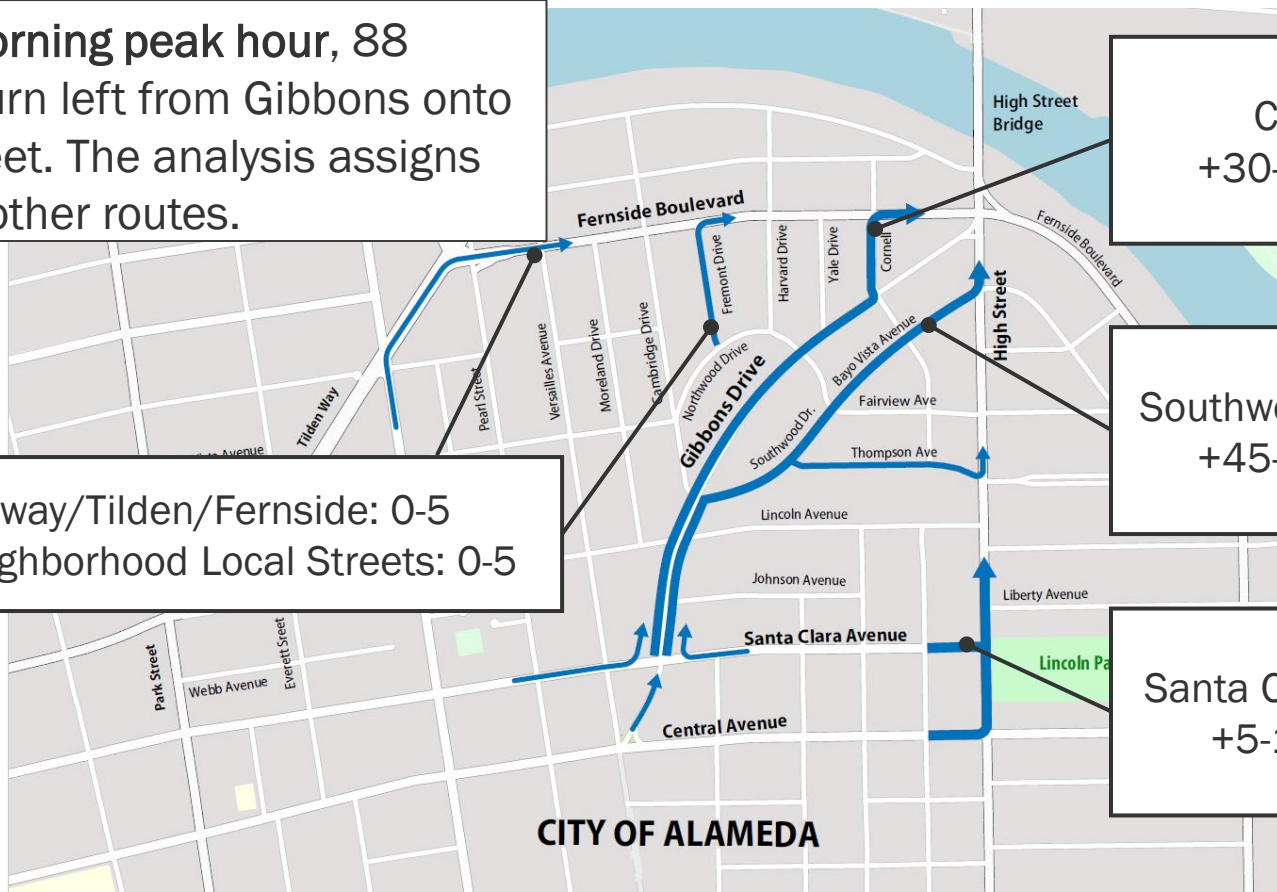
In the morning peak hour, 88 drivers turn left from Gibbons onto High Street. The analysis assigns them to other routes.

Cornell Dr
+30-35 vehicles

Southwood/Bayo Vista
+45-50 vehicles

Broadway/Tilden/Fernside: 0-5
Other Neighborhood Local Streets: 0-5

Santa Clara or Central
+5-10 vehicles



HOW DO DAILY TRAFFIC VOLUMES COMPARE WITH OTHER STREETS?

