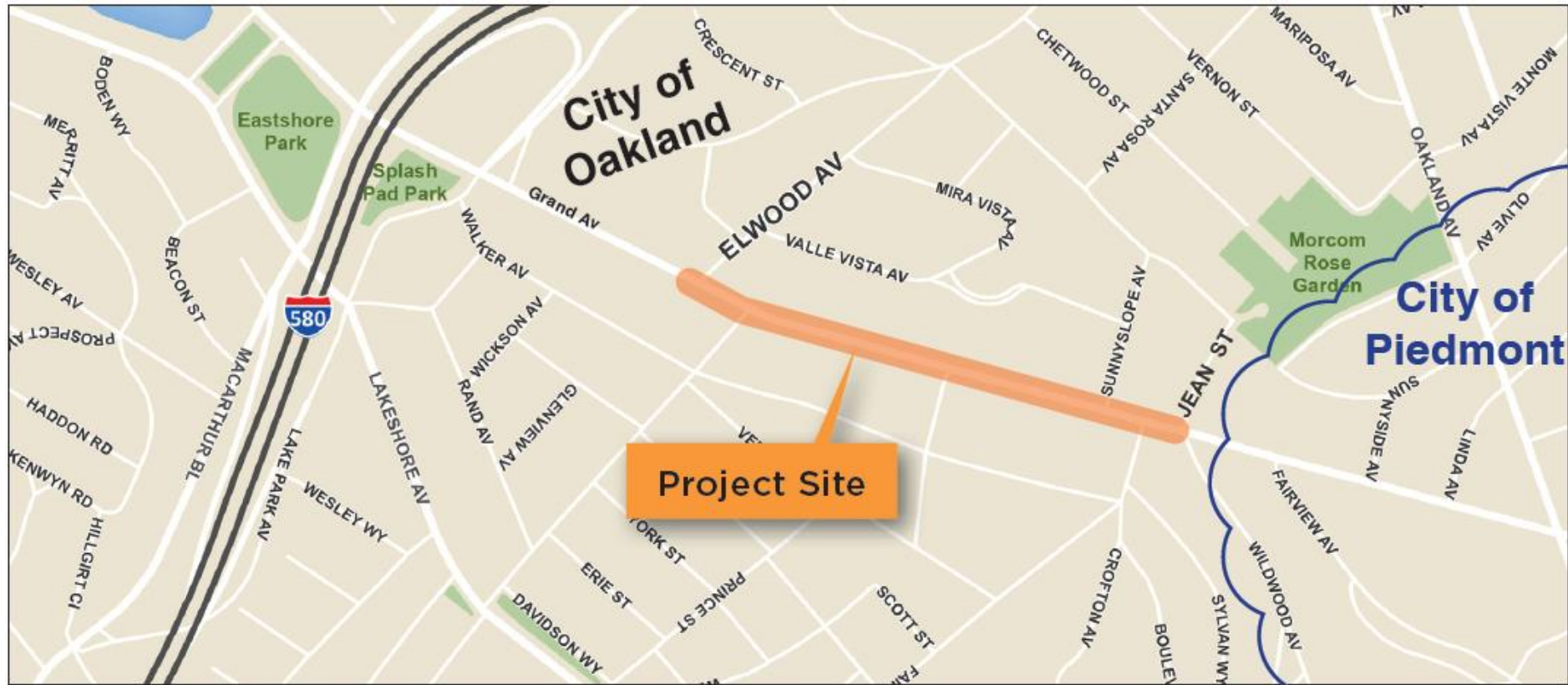




Grand Avenue Road Diet Jean St/Wildwood Ave to Elwood Ave

**Bicycle and Pedestrian Advisory
Committee Meeting
Thursday, June 18, 2015
Oakland City Hall**

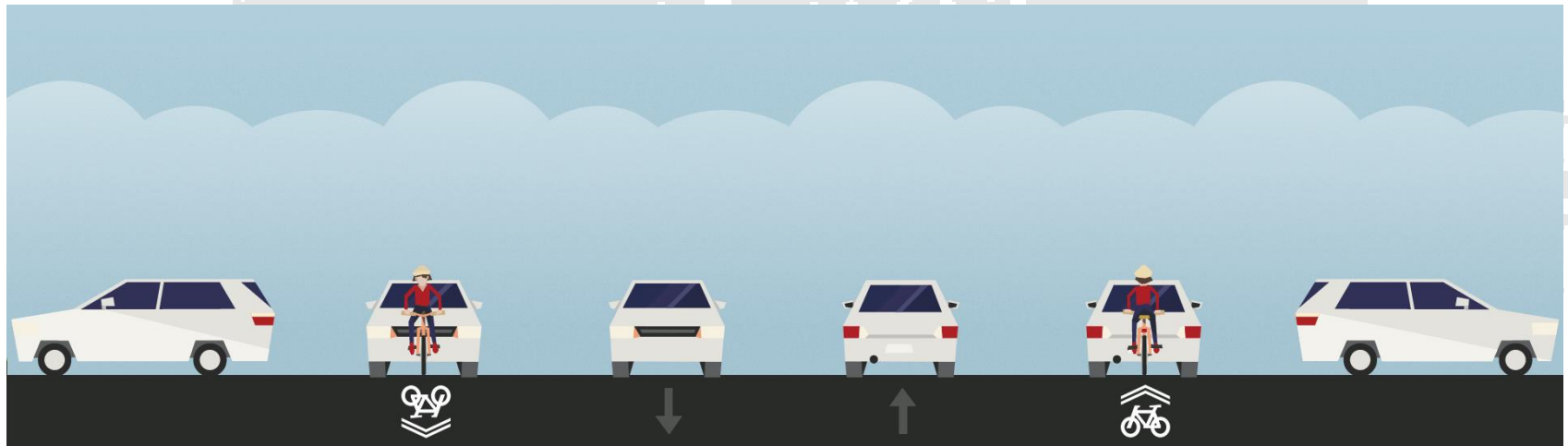
Location Map



Project Purpose

- Reduce collision rates for all roadway users
- Reduce the number of travel lanes to better match roadway vehicle demand
- Improve bicycle facilities
- Improve the pedestrian experience walking along and crossing Grand Avenue

Existing Cross Section



FRONT-IN
ANGLED
PARKING
15'

TRAVEL
LANE W/
SHARROW
13'

TRAVEL
LANE
12'

TRAVEL
LANE
12'

TRAVEL
LANE W/
SHARROW
13'

FRONT-IN
ANGLED
PARKING
15'

Challenges Posed by 4-lane Roads

Pedestrians

- Double threat
- Several lanes to cross

Bicyclists

- Shared lane with motorists
- Proximity to parked cars

Motorists

- Obstructions in lanes (e.g. parking)
- Lane changes to avoid obstructions



Photo source: Kittelson & Associates

Project Scope



- Evaluate alternatives for:
 - Reducing vehicle travel lanes from 4 to 3
 - Adding bicycle lanes
 - Types of on-street parking
- Reconfigure the roadway cross-section to better meet the needs of road users

Alternatives Considered

- The following alternatives were considered for the road diet on Grand Avenue
 - Back-in angle parking
 - Protected bicycle lanes
 - Traditional bicycle lanes



Source: City of Burnaby



Source: Biking Cupertino



Source: NACTO

Back-In Angle Parking



Photo source: Payton Chung via flickr



Photo source:
BikeWalkKC

Example in Philadelphia

Back-In Angle Parking: Benefits

- Improves visibility and field of vision when leaving parking space
- May decrease collisions between bicyclists and motorists
- Improves safety for motorists
- Access to rear storage in vehicles is away from moving vehicles



Source: Denver Post

Back-In Angle Parking: Drawbacks

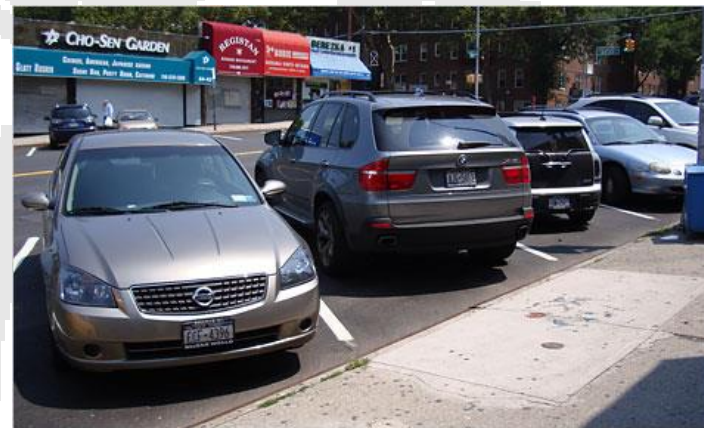
- Motorists are unfamiliar with maneuver
- Vehicles may overhang the sidewalk
- Vehicle exhaust expelled toward sidewalk
- Vehicles enter head-in from opposite side of street
- May result in loss of parking
- Inconsistent with the rest of Grand Avenue



Source: Topeka Bikeways

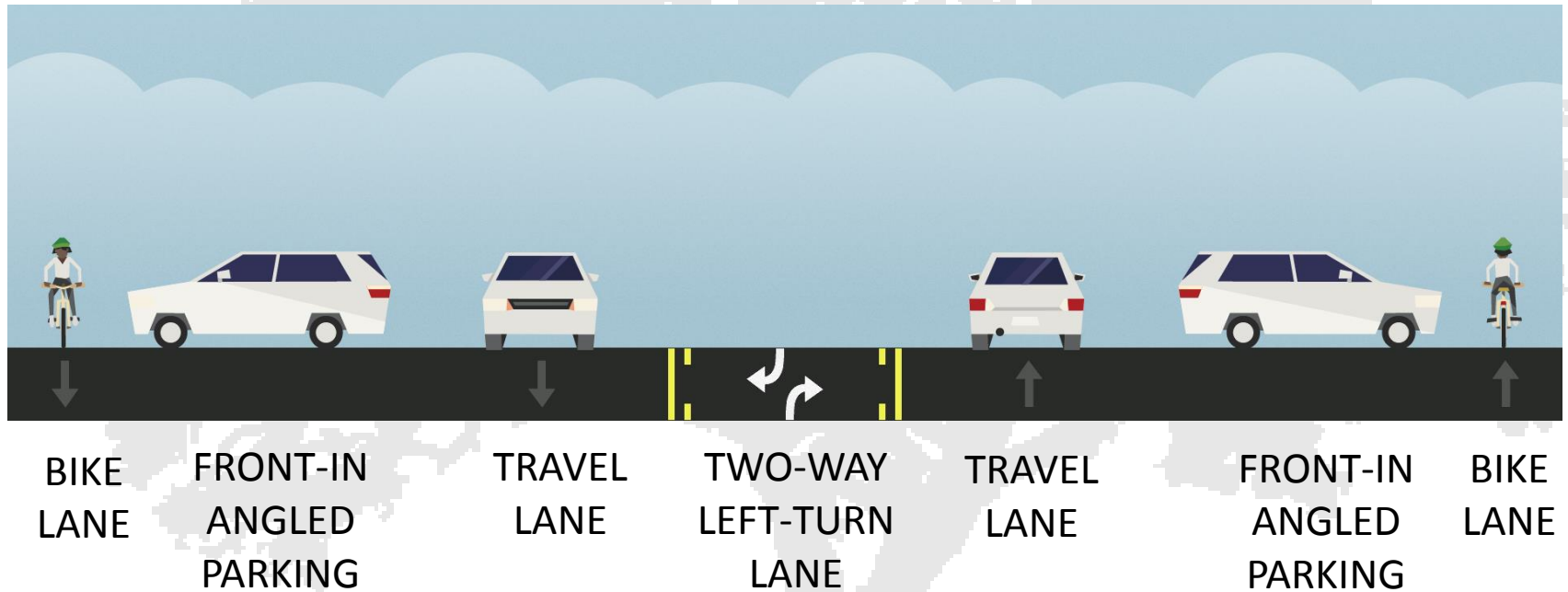


Source: Payton Chung via flickr



Source: New York Times

Protected Bike Lanes



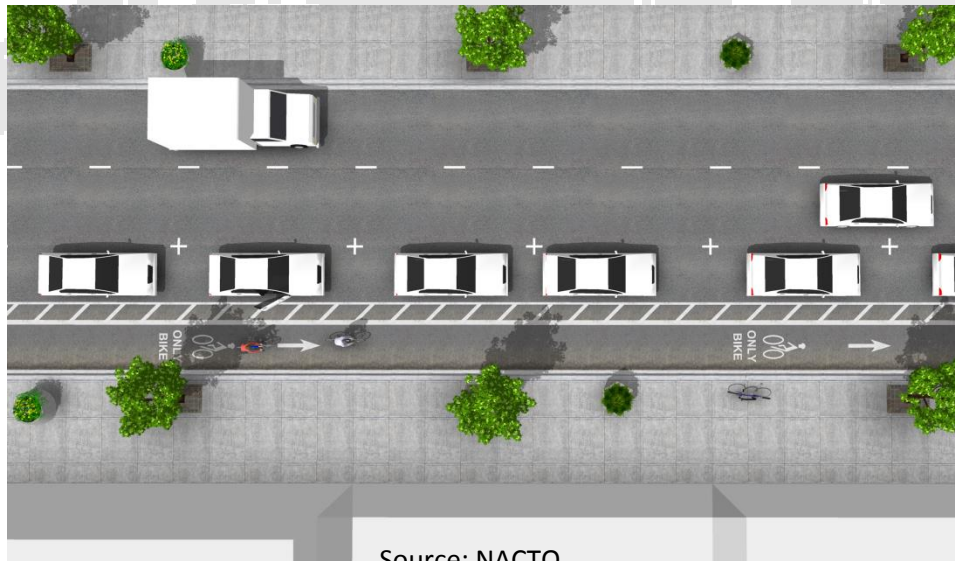
Protected Bike Lanes: Benefits



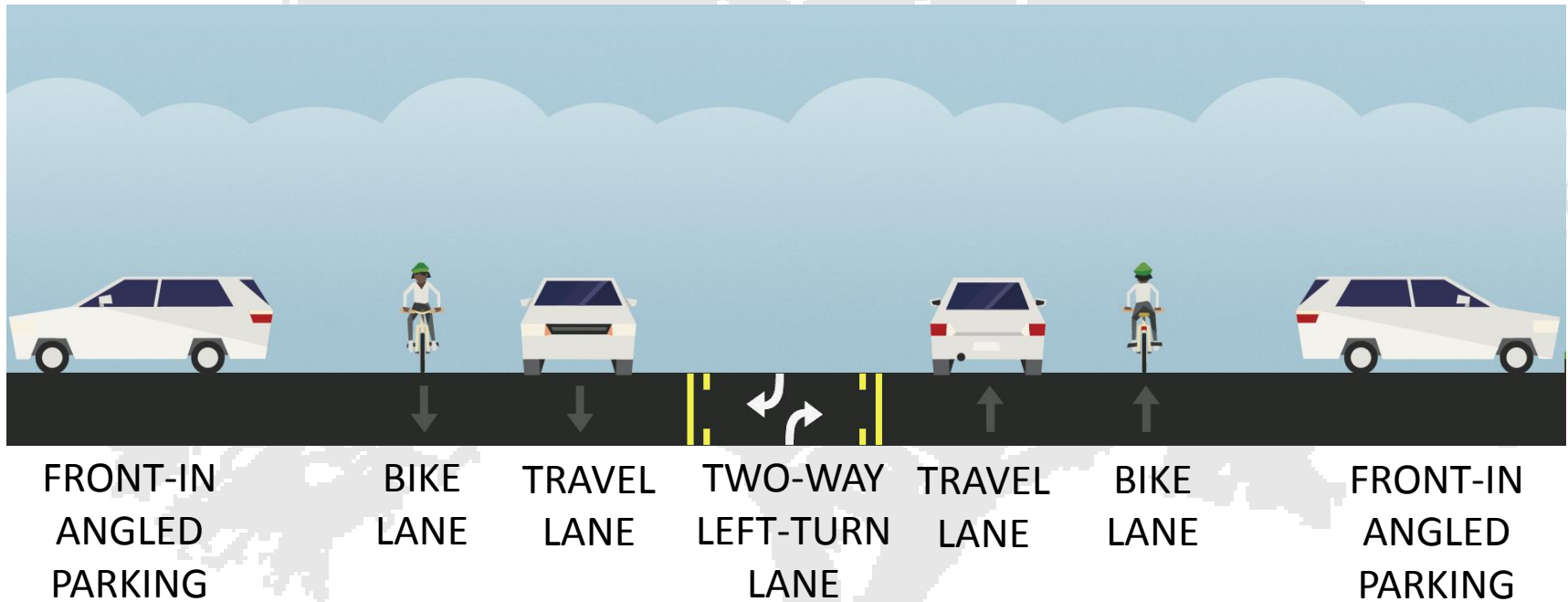
- Dedicates and protects space on street for bicyclists
- Reduces conflicts between motorists and bicyclists
- Reduces risk of motorists dooring bicyclists

Protected Bike Lanes: Drawbacks

- May require removing parking spaces near intersections
- Requires redesigning intersections to accommodate bicyclists turning left
- Requires redesigning intersections to manage conflict between motorists turning right and bicyclists going through



Traditional Bike Lanes



Traditional Bike Lanes: Benefits



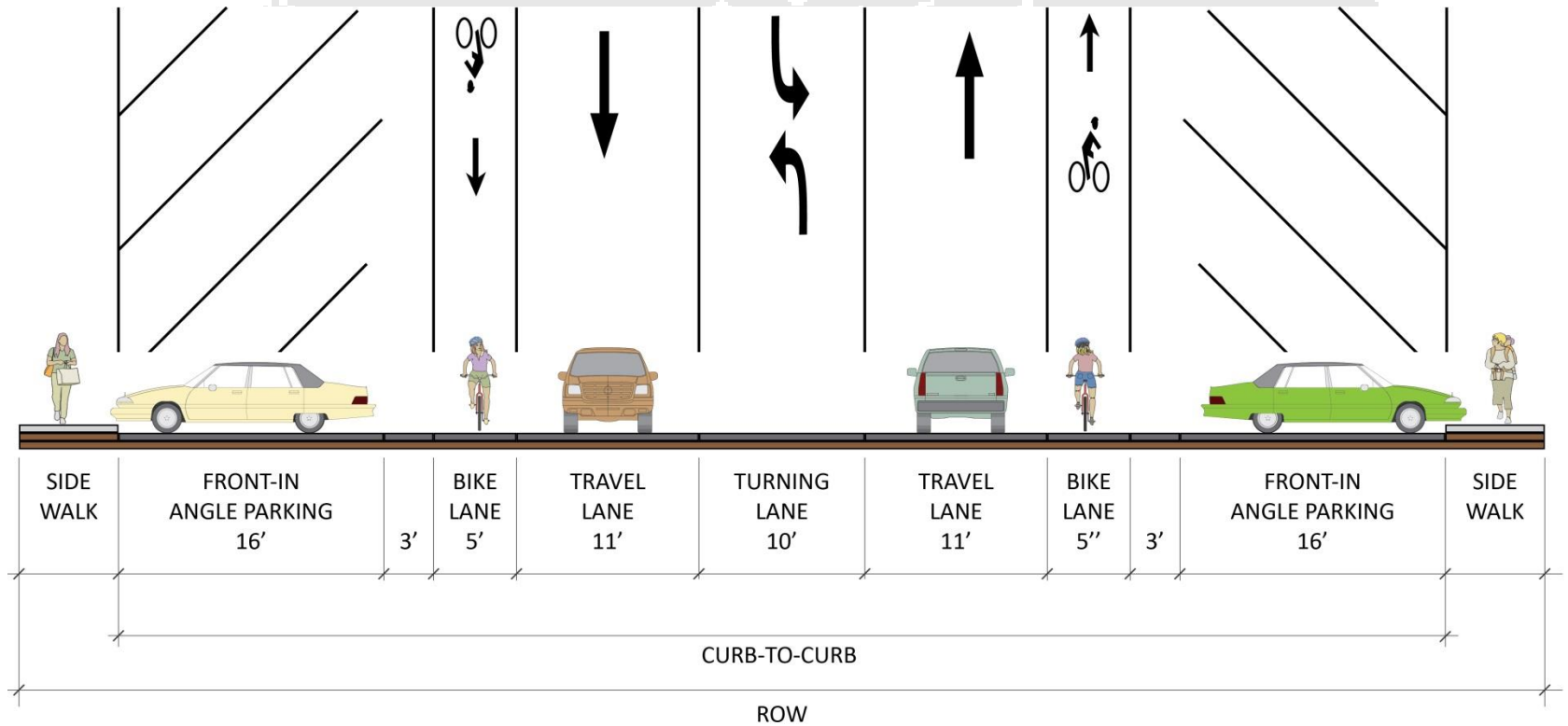
- Provides exclusive space in street for bicyclists
- Facilitates predictable behavior and movements between bicyclists and motorists
- Bicyclists can move into vehicle travel lanes as desired and needed
- Consistent with current striping on Grand Avenue

Traditional Bike Lanes: Drawbacks



- Does not protect bicyclists from moving or parked vehicles
- Bicyclists may not be as visible to motorists reversing out of front-in angle parking

Proposed Plan



Effects on Bicyclists

Mineta Transportation Institute Bicycle Level of Traffic Stress: Suitable for whom?

LTS 1: Everyone

LTS 2: All adults

LTS 3: Most adults

LTS 4: Experienced adults

Factors that determine LTS

1. Number of vehicle lanes
2. Speed of motorists
3. Presence of parking
4. Bike lane presence/width
5. Separation between bike lane and motor vehicle lanes



Broadway

Effects on Bicyclists

- Dedicated street space for bicyclists
- 3' clearance between bike lane and angled parking
- May modestly reduce vehicle speeds
- Bike lane obstruction by parking maneuvers
- Bicycle level of traffic stress (Mineta Transportation Institute)
 - Current conditions: Level 4
 - With road diet: Level 3

Effects on Pedestrians

- Two mid-block crosswalks:
 - 3612 Grand Ave (near Margenes Bridal)
 - Existing crossing delay: > 2 minutes (peak period)
 - Expected crossing delay: 25 seconds (peak period)
 - 3758 Grand Ave (near Safeway)
 - Existing crossing delay: > 2 minutes (peak period)
 - Expected crossing delay: 20 seconds (peak period)

Effects on Motorists

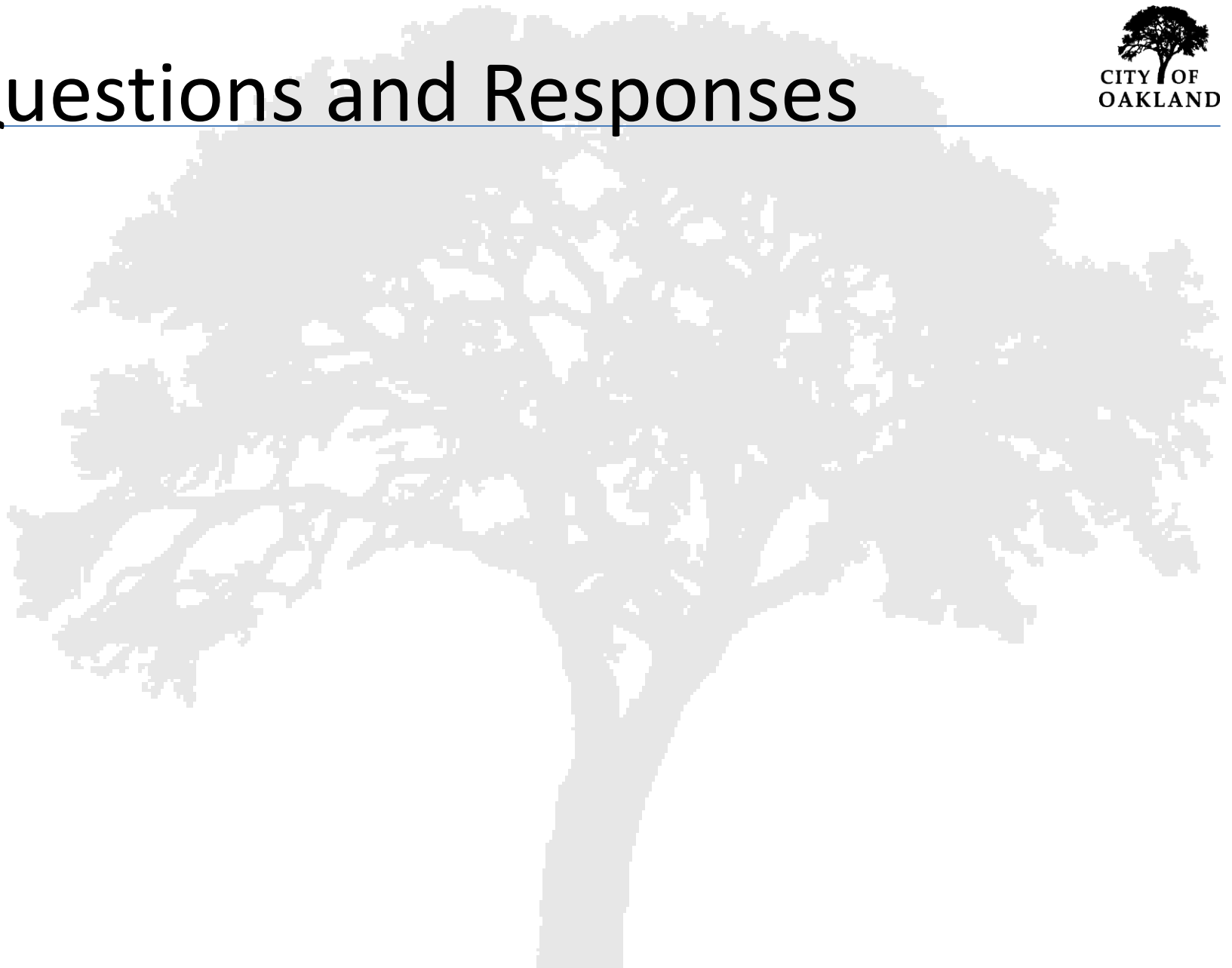
- Up to 5 second reduction in average delay at:
 - Boulevard Way (AM/PM peak hours)
 - Sunnyslope Ave (AM peak hour)
 - Weldon Ave (AM/PM peak hours)
- Up to 4 second increase in average delay at:
 - Jean/Wildwood (AM/PM peak hours)
 - Sunnyslope Ave (PM peak hour)
 - Mandana Ave (AM peak hour)
 - Elwood (AM/PM peak hours)
- 19 second increase in average delay at Mandana Ave (PM peak hour)

Potential Safety Improvements



- Reduce risk of side-swipe collisions
 - 15 occurred between 2009 and 2013.
- Reduce risk of collisions involving pedestrians crossing Grand Ave.
 - 5 occurred between 2009 and 2013.
- Reduce bicycle collision rate
 - 6 occurred between 2009 and 2013.

Questions and Responses



Southern Transition



Northern Transition

