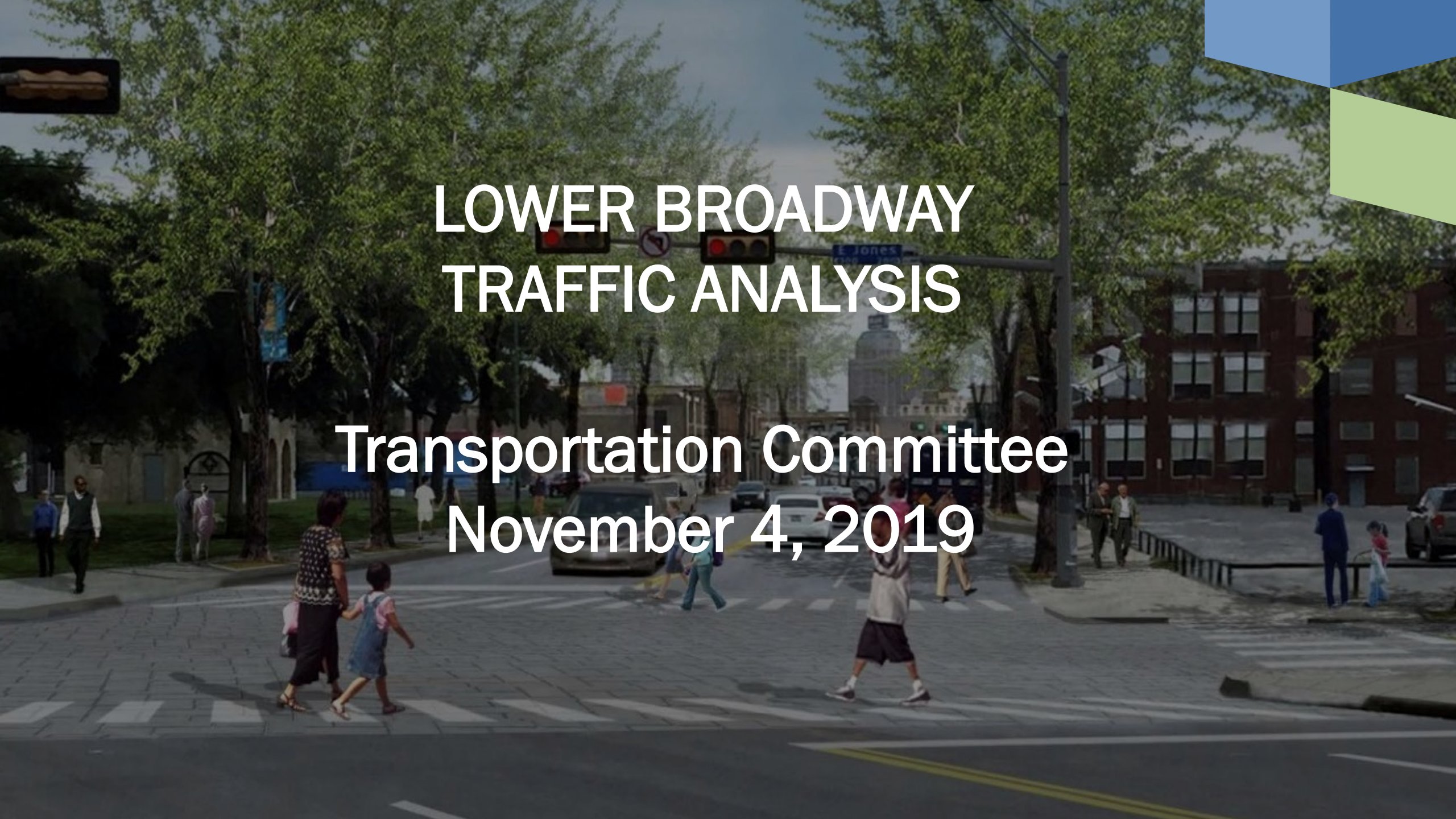
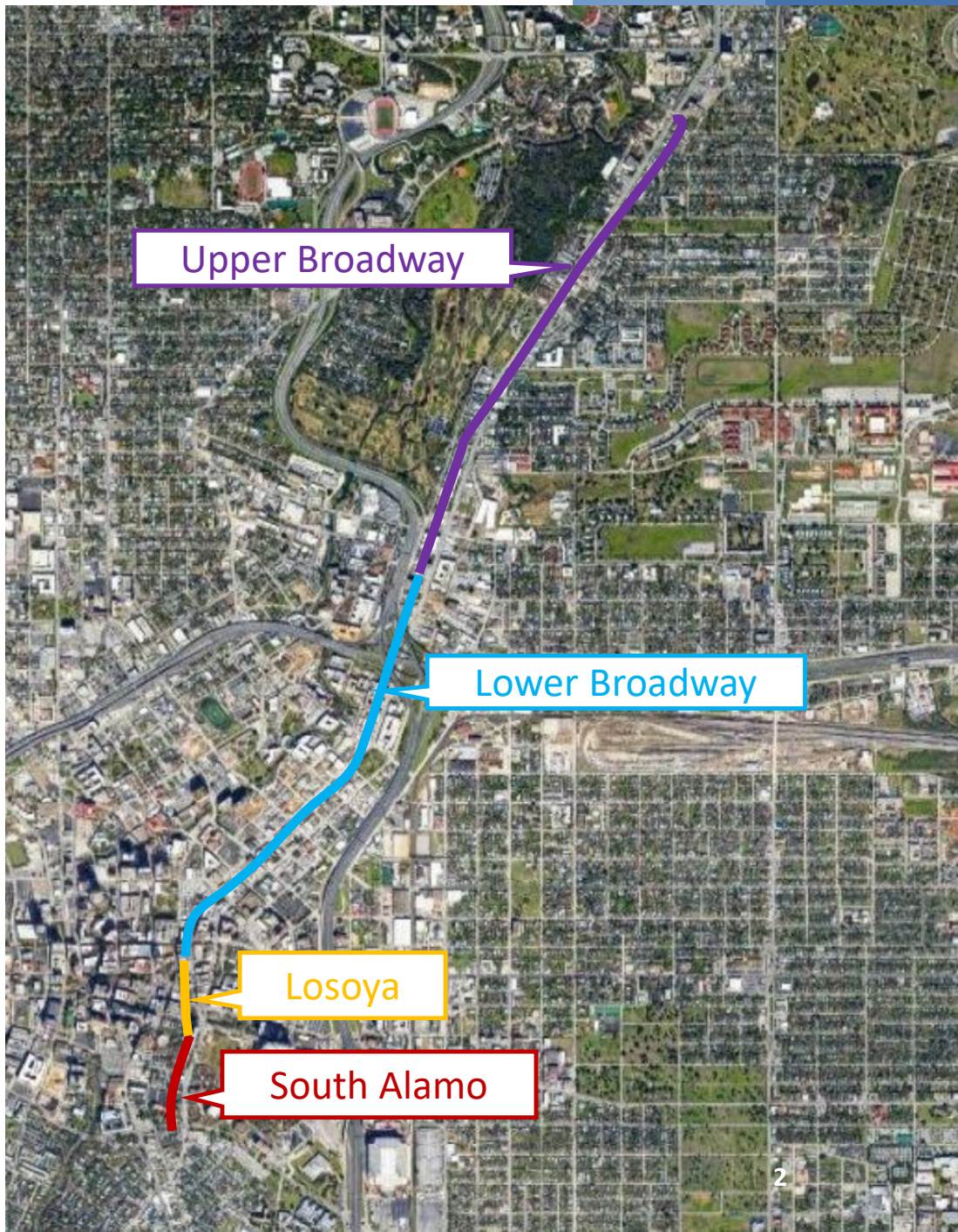


LOWER BROADWAY TRAFFIC ANALYSIS

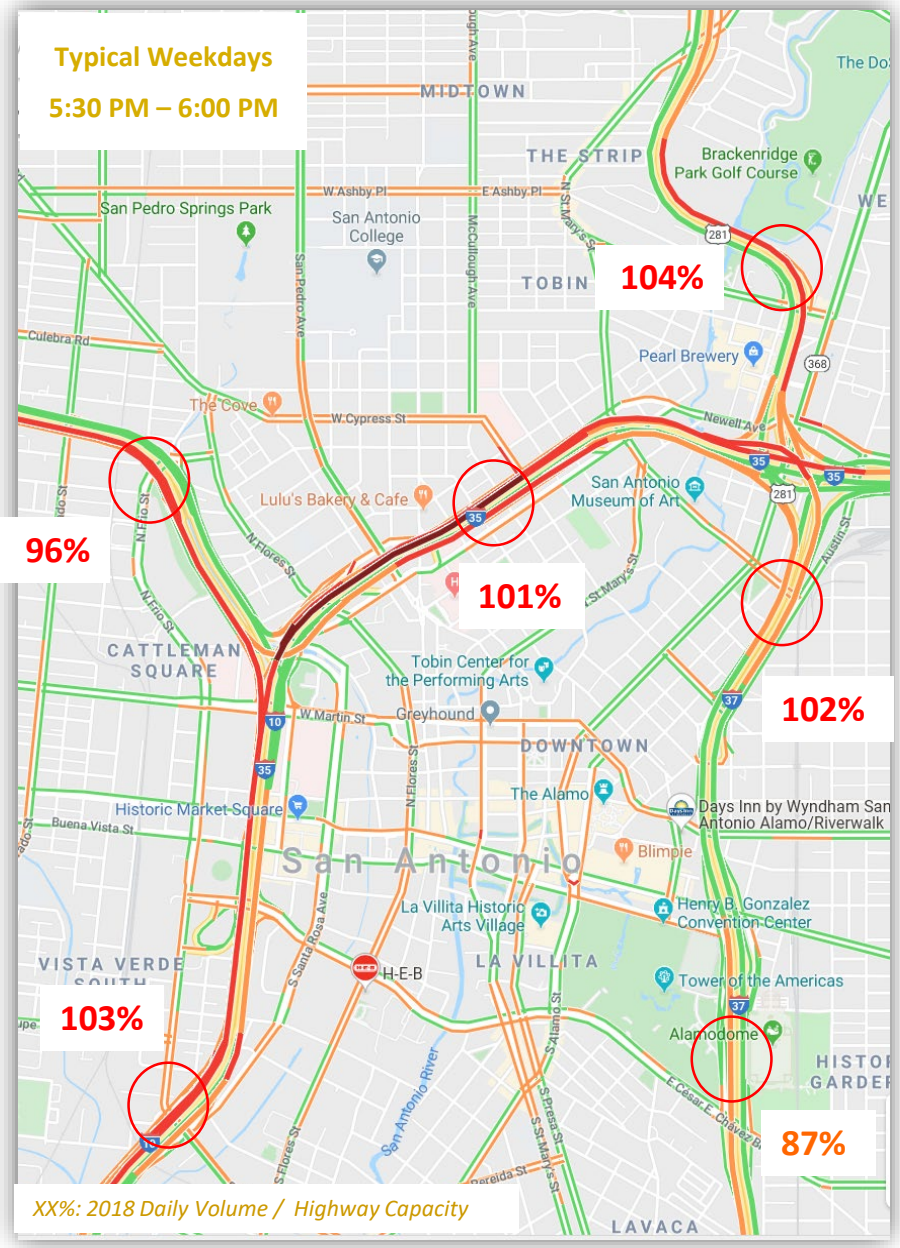
Transportation Committee
November 4, 2019

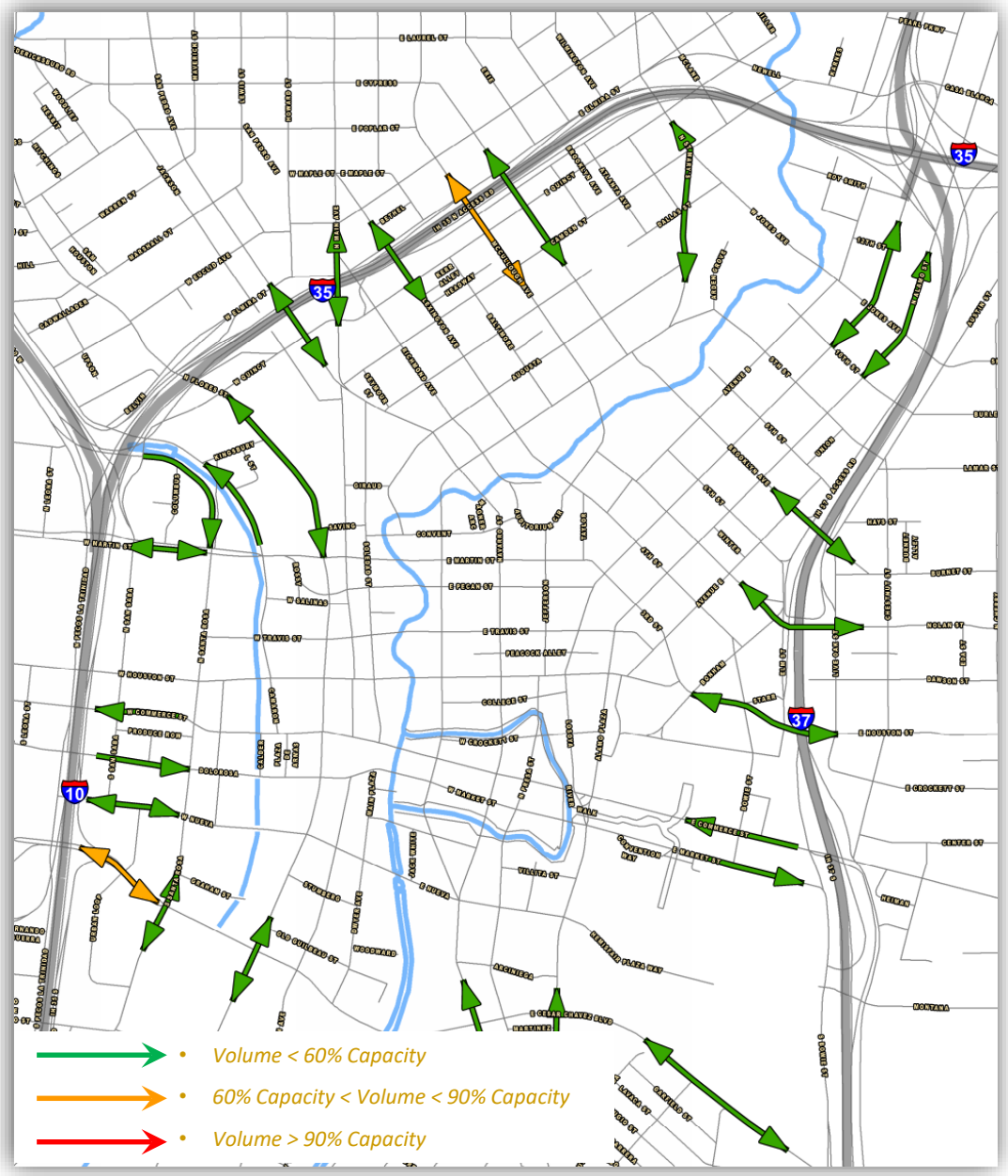
Broadway Segments

- Upper Broadway – 100’ ROW
  - » Hildebrand to Josephine
- Lower Broadway – 72’-80’ ROW
  - » Josephine to Houston
- Losoya Street – 60’ ROW
  - » Houston to Market
- South Alamo Boulevard – 107’ ROW
  - » Market to Cesar Chavez



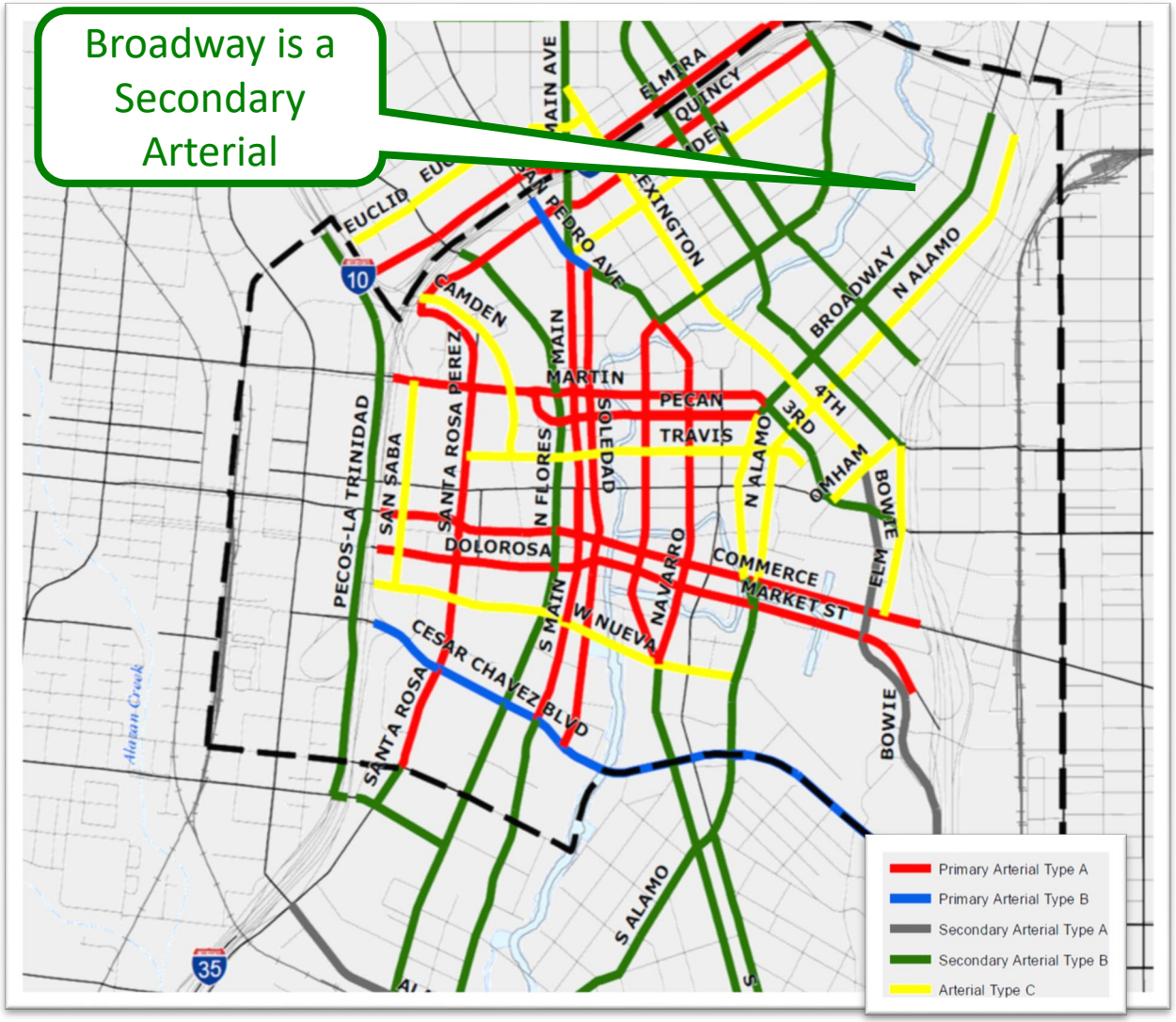
Broadway's Role in Downtown Transportation



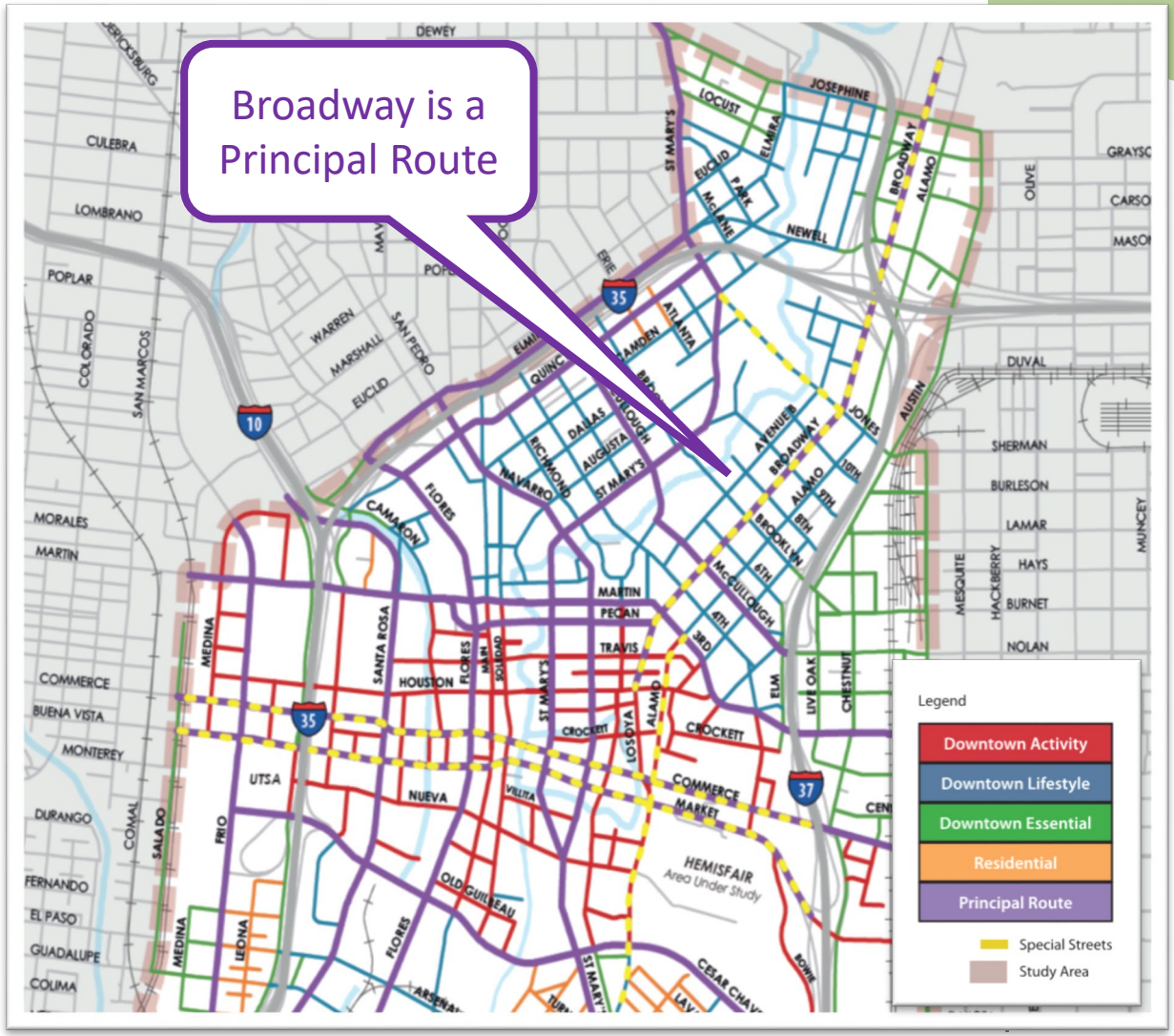


Broadway's Role in Downtown Transportation

Major Thoroughfare Plan

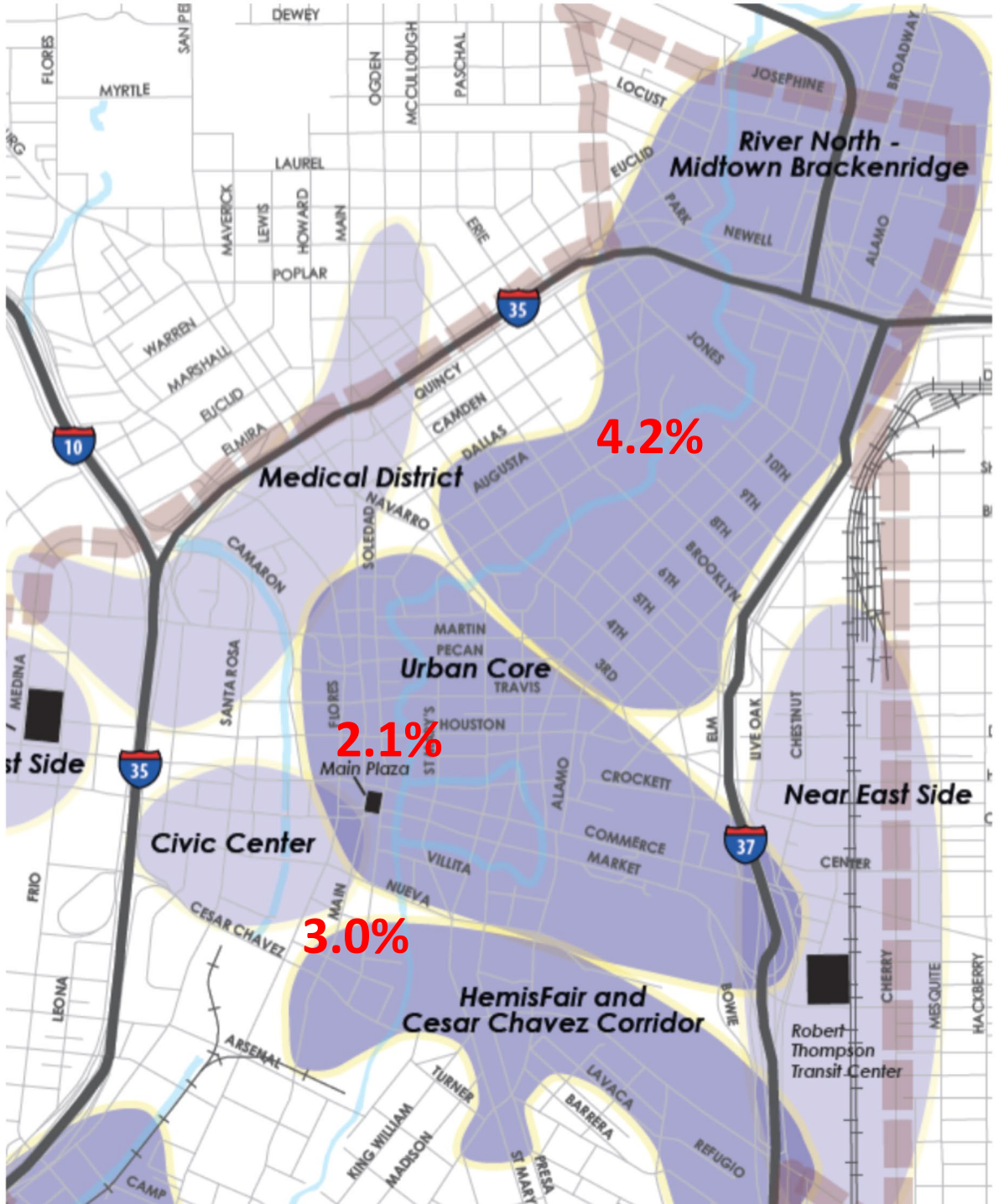


Downtown Transportation Study



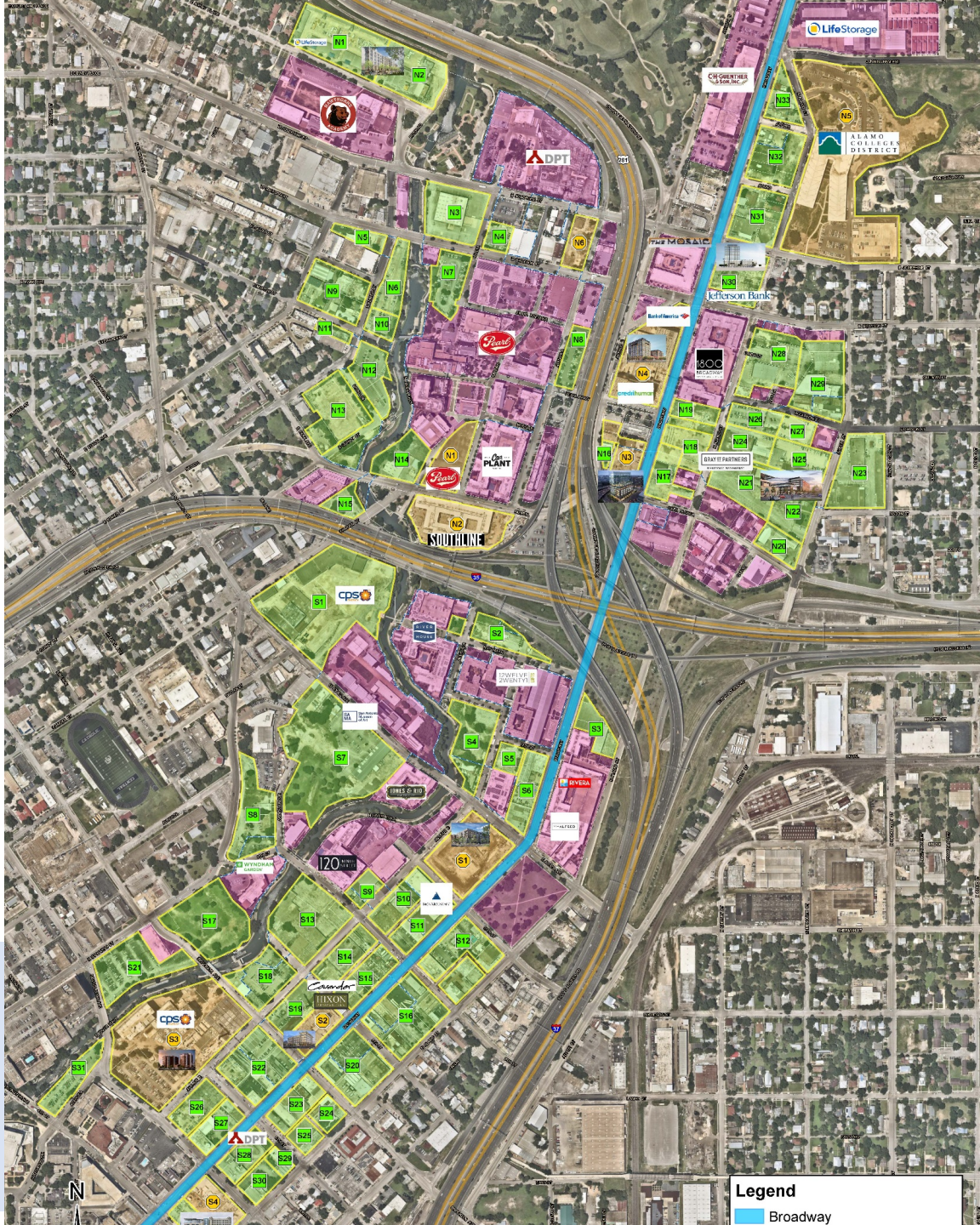
Background Traffic Growth

- Annual Growth Rate Since 2012
- Growth Rate in Broadway Area Double the Average Growth Rate of Downtown San Antonio



Broadway Corridor Development

- Office – 2,952,000 sq ft
- Retail/Restaurant – 1,179,000 sq ft
- Apartments – 5,909 Dwelling Units



Purple – Existing

Green – Planned

Brown – Proposed / Under Construction

Development North of Highway

- Office – 1,577,000 sq ft
- Retail/Restaurant – 875,000 sq ft
- Apartments – 3,009 Dwelling Units

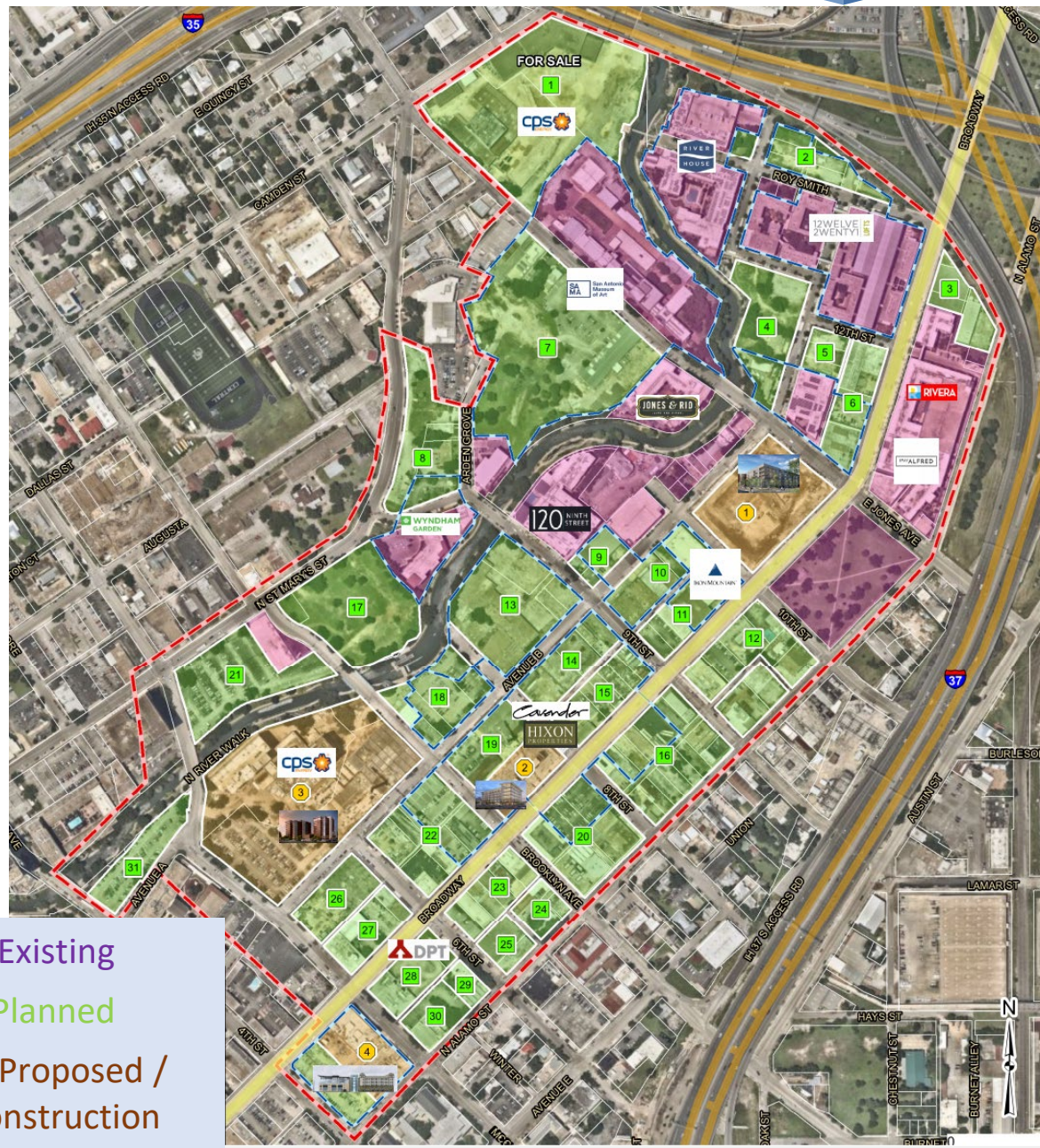
Purple – Existing

Green – Planned

Brown – Proposed / Under Construction

Development South of Highway

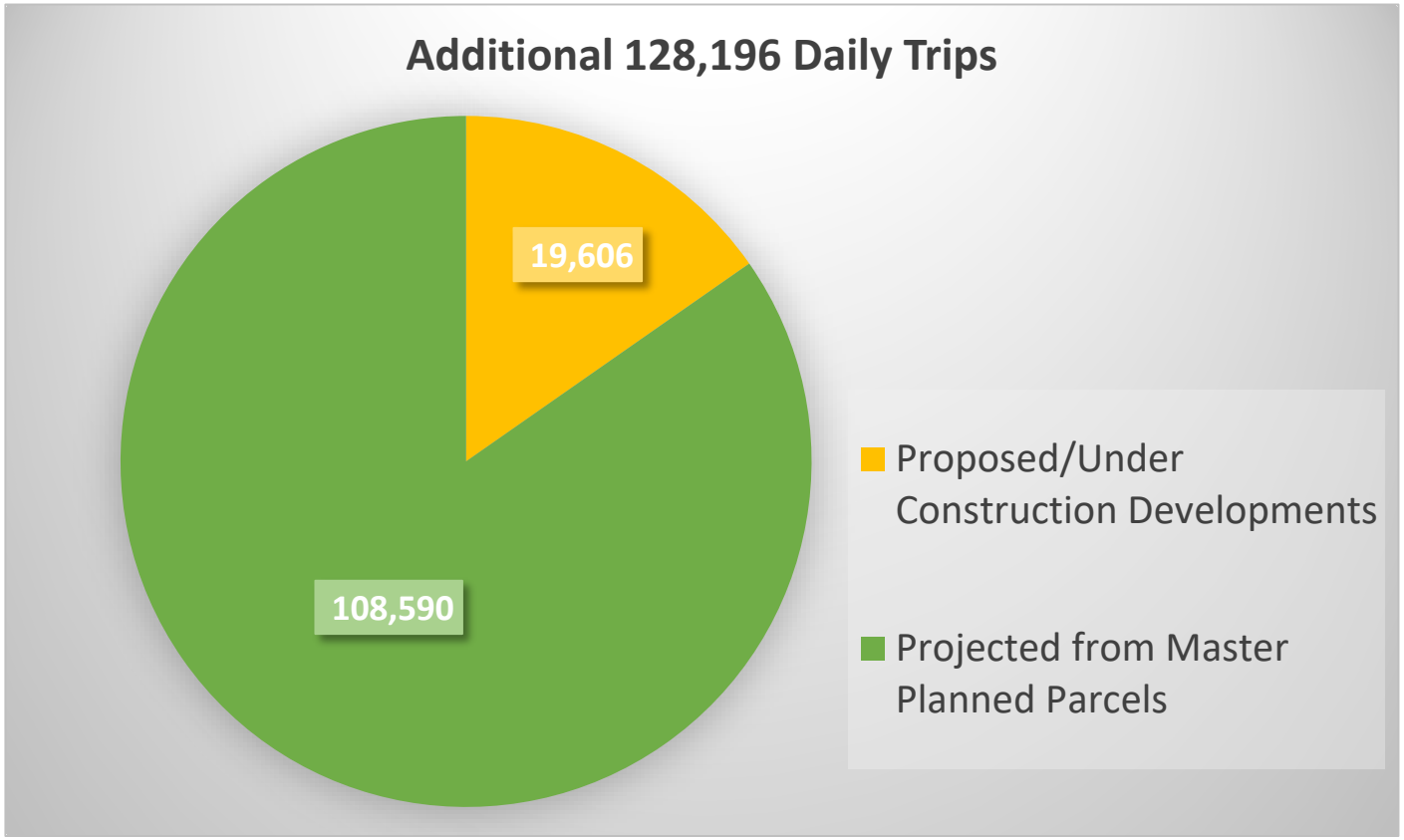
- Office – 1,375,000 sq ft
- Retail/Restaurant – 303,500 sq ft
- Apartments – 2,900 Dwelling Units



Broadway Development

Total 128,196 Daily Trips will be Added

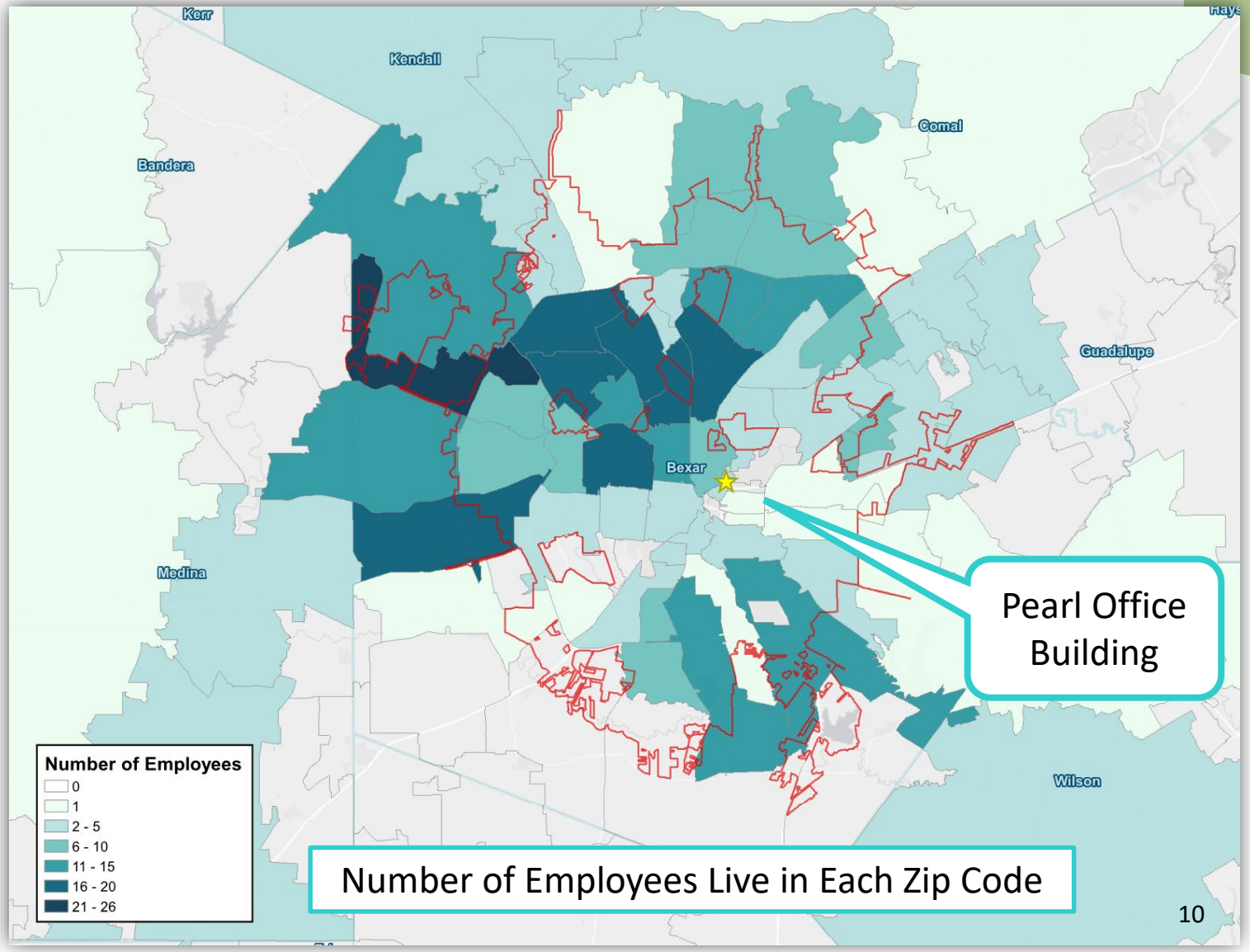
- **19,606** Daily Trips from Proposed/Under Construction Developments
- **108,590** Daily Trips Projected from Master Planned Parcels



Traffic Trip Generation

Where are Employees Coming From?
- Sample Survey

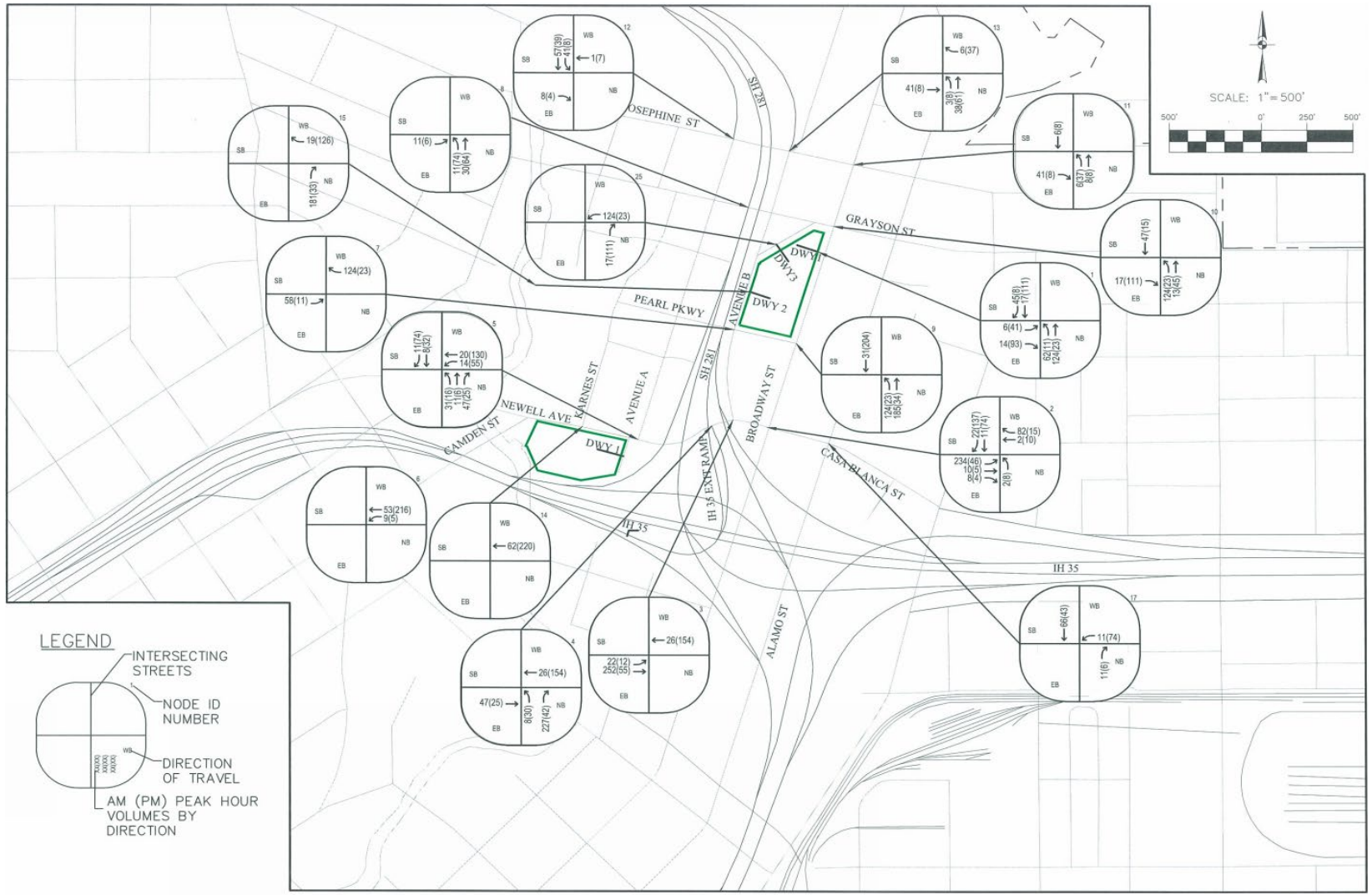
- A Pearl Office Building of 300,000 sqft
- Estimated to Generate 3,309 Daily Trips



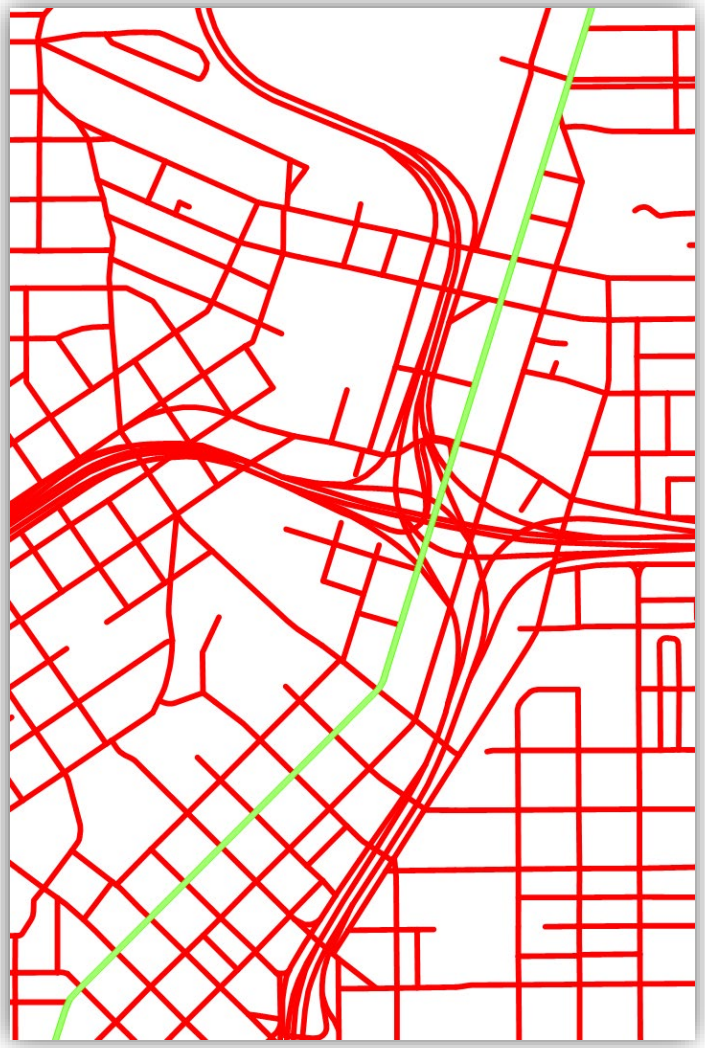
Traffic Trip Distribution

Which Route are Employees Taking?

- Estimated Based on Roadway Network
- Calculated Traffic Volume at Roads & Intersections



Estimated Trips Added to Broadway



128,000 Trips/Day to be Added in the Corridor:

- 11% will Use Broadway
- 89% will Use Other Streets

Question #7:

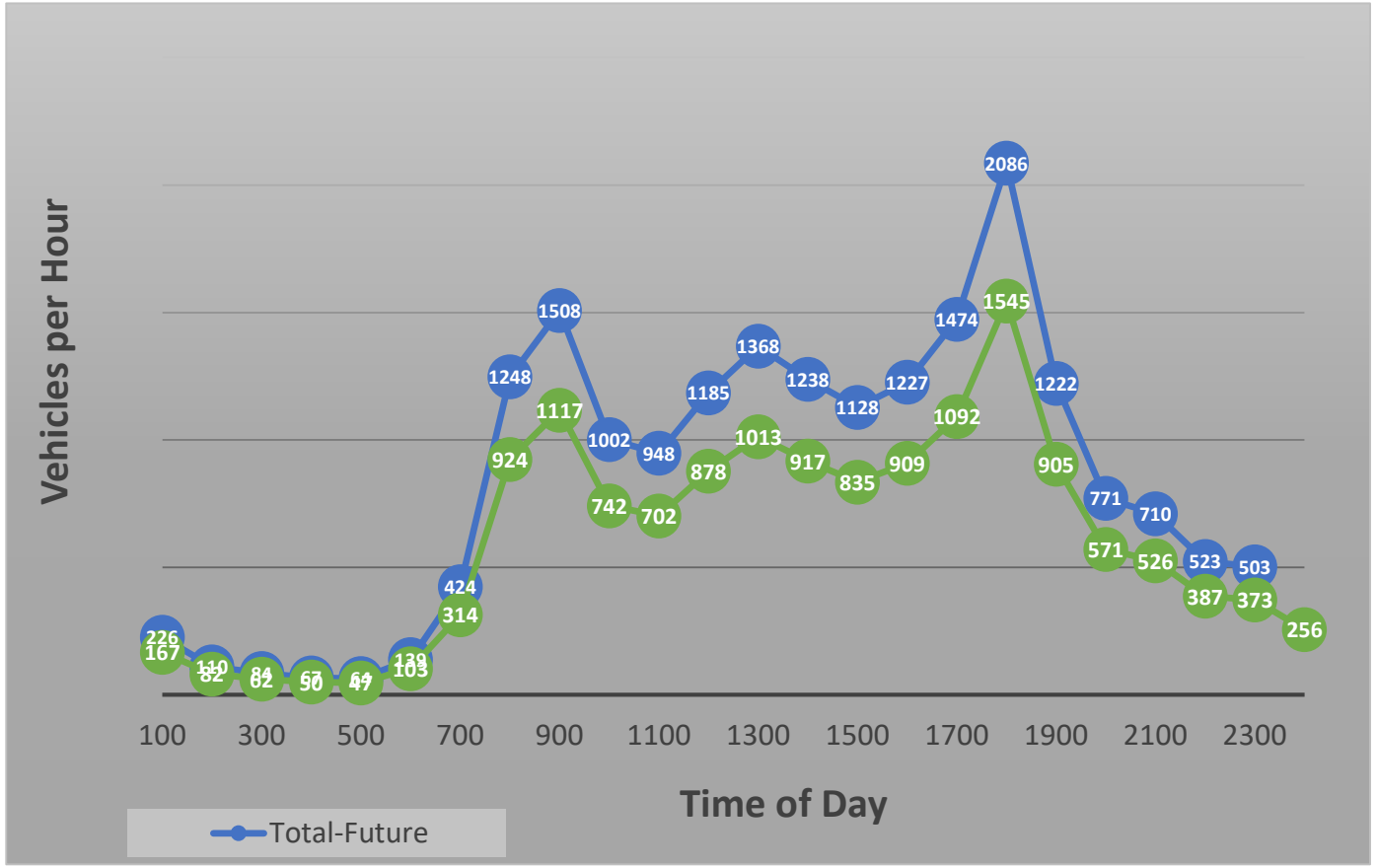
- Growth Negates the Reverse of Induced Demand.

Existing Lower Broadway Traffic Volumes & Modal Split

18,000 Trips/Day

- 90% Autos – 16,110 cars/day
- 8.5% Buses – 170 buses / day*
- 0.3% Bikes – 60 bikes / day
- 1.7% Walk – 300 pedestrians / day

**Assume 9 riders/bus*



Lower Broadway Traffic Volumes
– Projected & Assumed Modal Shift

- Current Traffic Volume (autos, bikes/micromobility, buses) = **18,000** trips/day
- Trips added to Broadway from Development = **14,400** trips/day (Assuming 11% of overall projected development traffic travels on Broadway)
- Total projected volume = **32,400** trips/day (74% increase)

Modal Shift (25%)

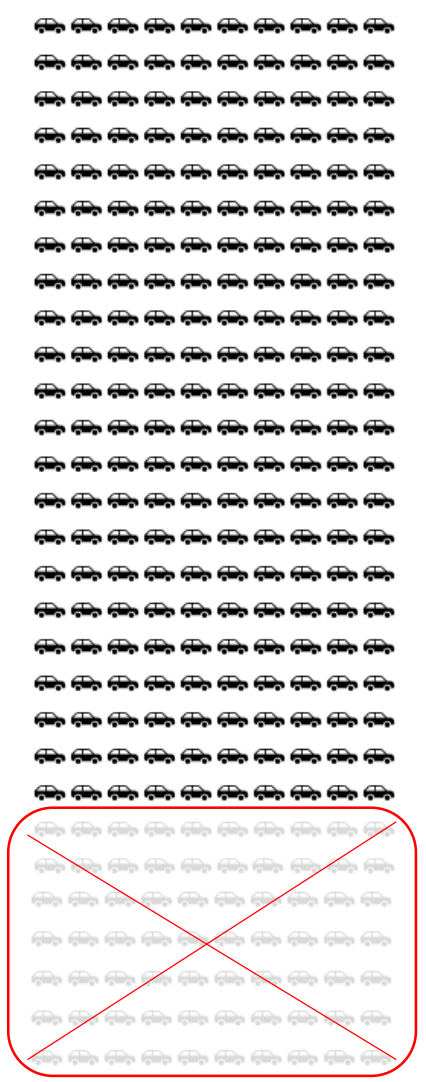
- 75% autos = 24,300 cars/day
- 25% (Buses, Bikes/Micromobility, Walking) = 8,100 trips/day
  - 15% Buses = 4,860 Riders = 324 Buses (average 15 riders per bus)
  - 5% Bikes/Micromobility = 1,620 Bikes
  - 5% Walking = 1,620 Pedestrians

Broadway Modal Split

Projected with Current Modal Split

- 90% Auto = 29,000 Cars/Day
- 8.5% Bus = 184 Buses/Day
- 0.3% Bike = 108 Bikes/Day
- 1.7% Walk = 540 Pedestrian/Day

Projected with Assumed Modal Split

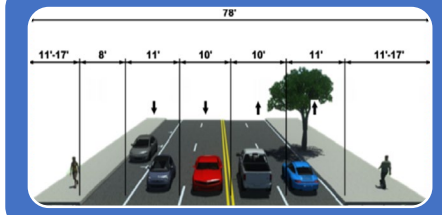


- 75% Auto = 24,300 Cars/Day
- 15% Bus = 324 Buses/Day
- 5% Bike = 1,620 Bikes/Day
- 5% Walk = 1,620 Pedestrian/Day

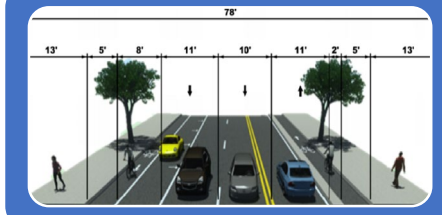
Existing Conditions – Lower Broadway

- 3rd Street to IH-35
  - 78 feet ROW
  - Four lanes with left-turn lane
  - Narrow sidewalks – 7’
  - Bike lane/Sharrow markings in some areas
- IH-35 to Josephine Street
  - 80 feet ROW
  - Six lanes with left-turn lane
  - Narrow sidewalks – 6’
  - No bike lane on Broadway. Two-way cycle track provided on Avenue B that connects to Brackenridge Park

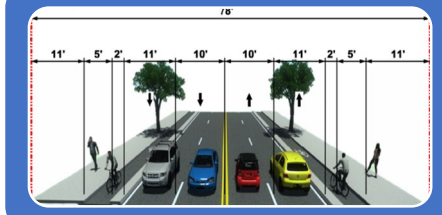
Four Options Studied



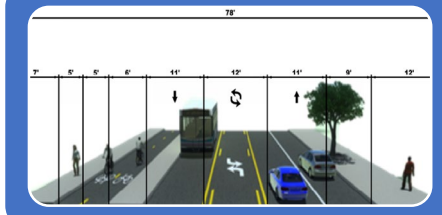
Option 1 – 4 Lanes + Parking (Current Design Build 40%)



Option 2 – 3 Lanes + Bike Lanes + Parking



Option 3 – 4 Lanes + Bike Lanes

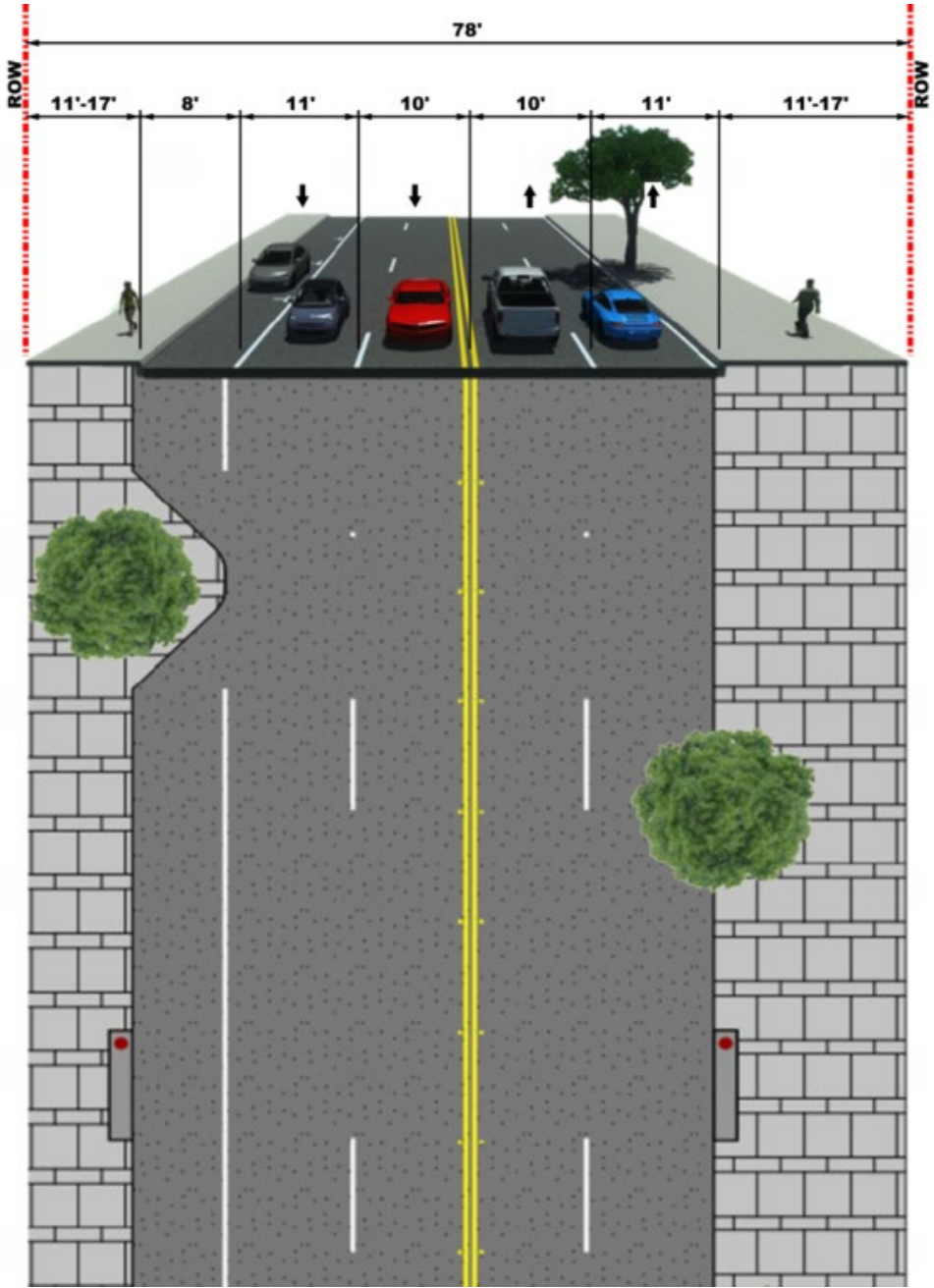


Option 4 – 3 Lanes Including Center Turn Lane + Bike Lanes

Option 1 - Current Design Build-Option (Sundt-TCI)

Question #3 & #4

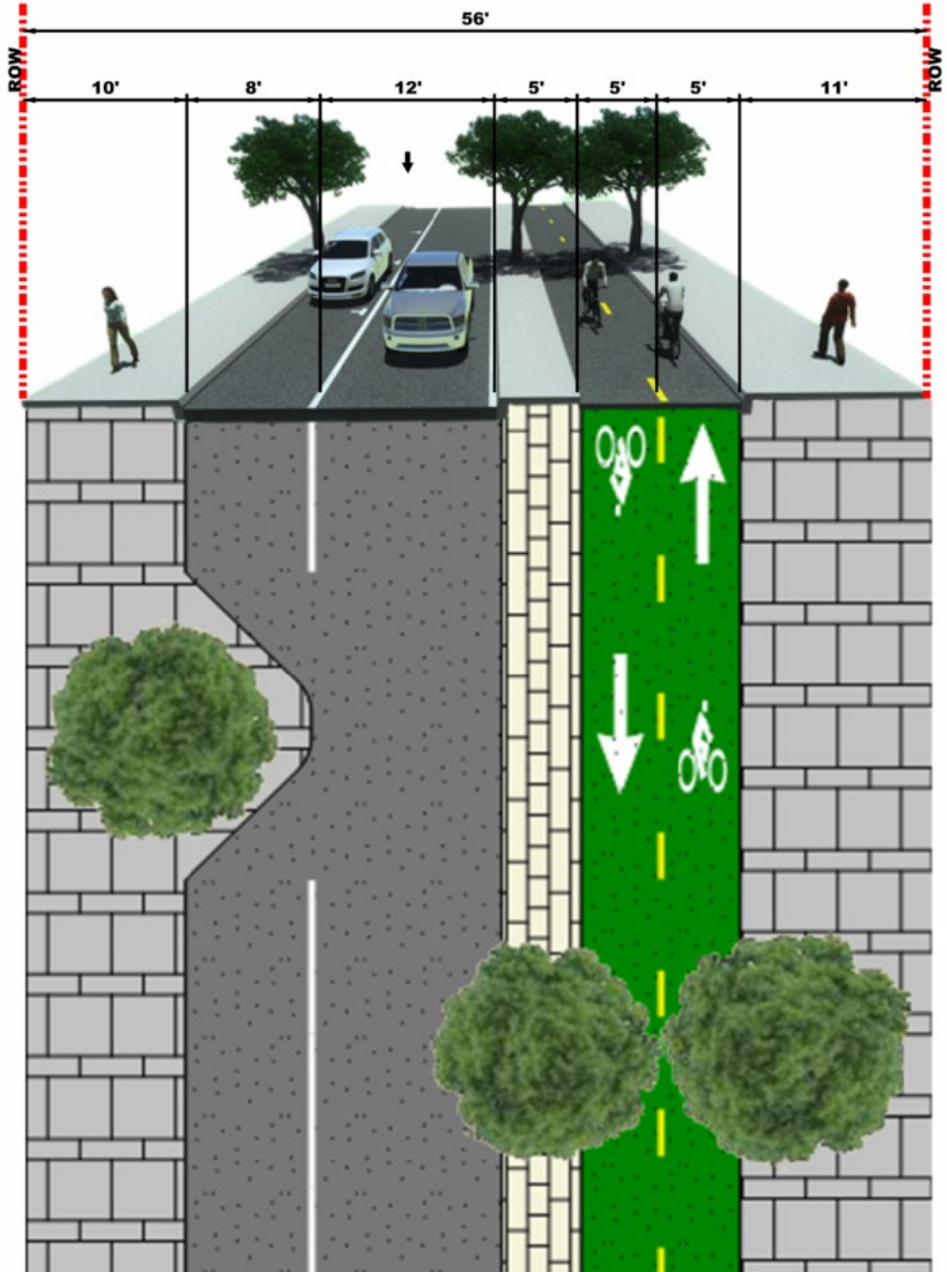
- Travel Lanes Reduced to 10 ft to Reduce Speed.
- Provide Bulb-outs at Intersections to Reduce Pedestrian Crossing Width.



Features

- Four Travel Lanes Undivided
- Wide Sidewalks: 11-17 Feet
- Utility Lane: On-Street Parking/ Rideshare/Loading
- Bulb-outs for Transit Loading/Unloading

Avenue B Bike Facility



Features

- One Southbound Lane
- Two-Way Protected Cycle Track
- Utility Lane: On-Street Parking/ Rideshare/Loading

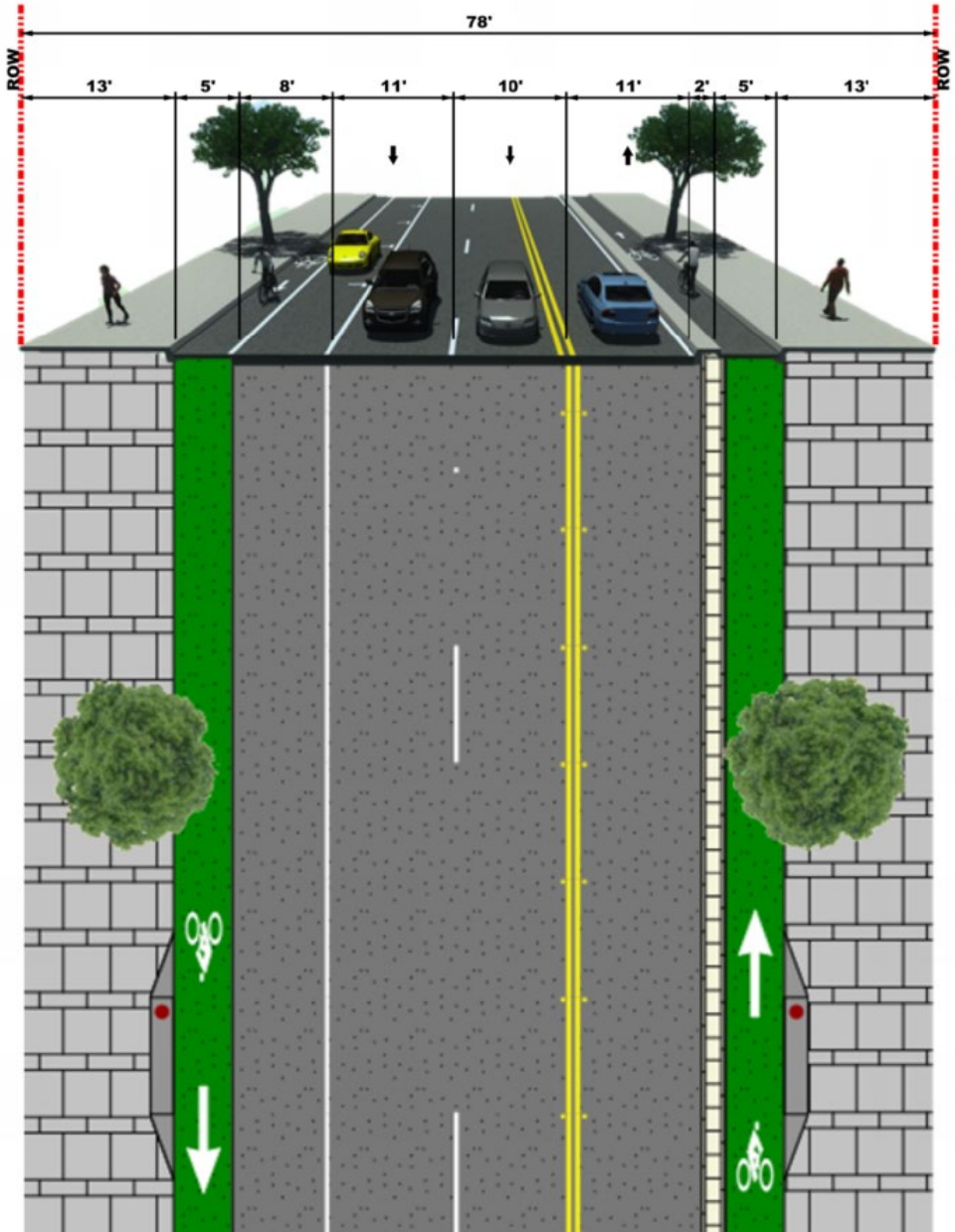
Option 2 - Three Lanes with Bike Lanes and On-Street Parking

Question #5

- Single Lane in Either Direction Increases Commute Time along the Corridor and Reduces the Effectiveness of Transit.

Question #1 & #2

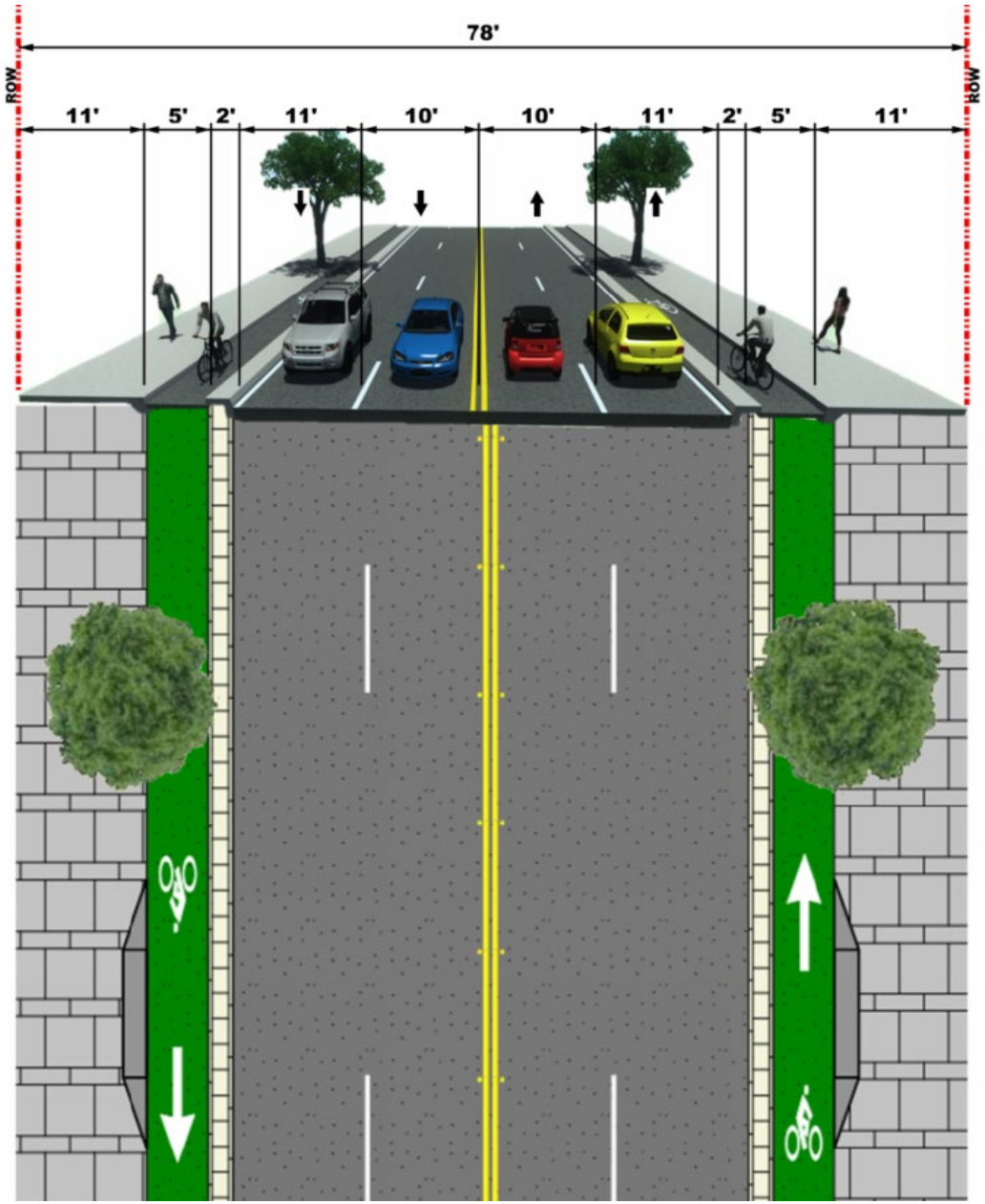
- Trees are Used to Separate Pedestrians from Bike Lanes.



Features

- Three Travel Lanes
- Utility Lane: On-Street Parking/ Rideshare/Loading
- Protected Bike Lanes
- No Buffer Next to Parking (Safety Issue)
- Sidewalks: 13 Feet
- No Bulb-outs for Transit Loading/Unloading (safety issue)

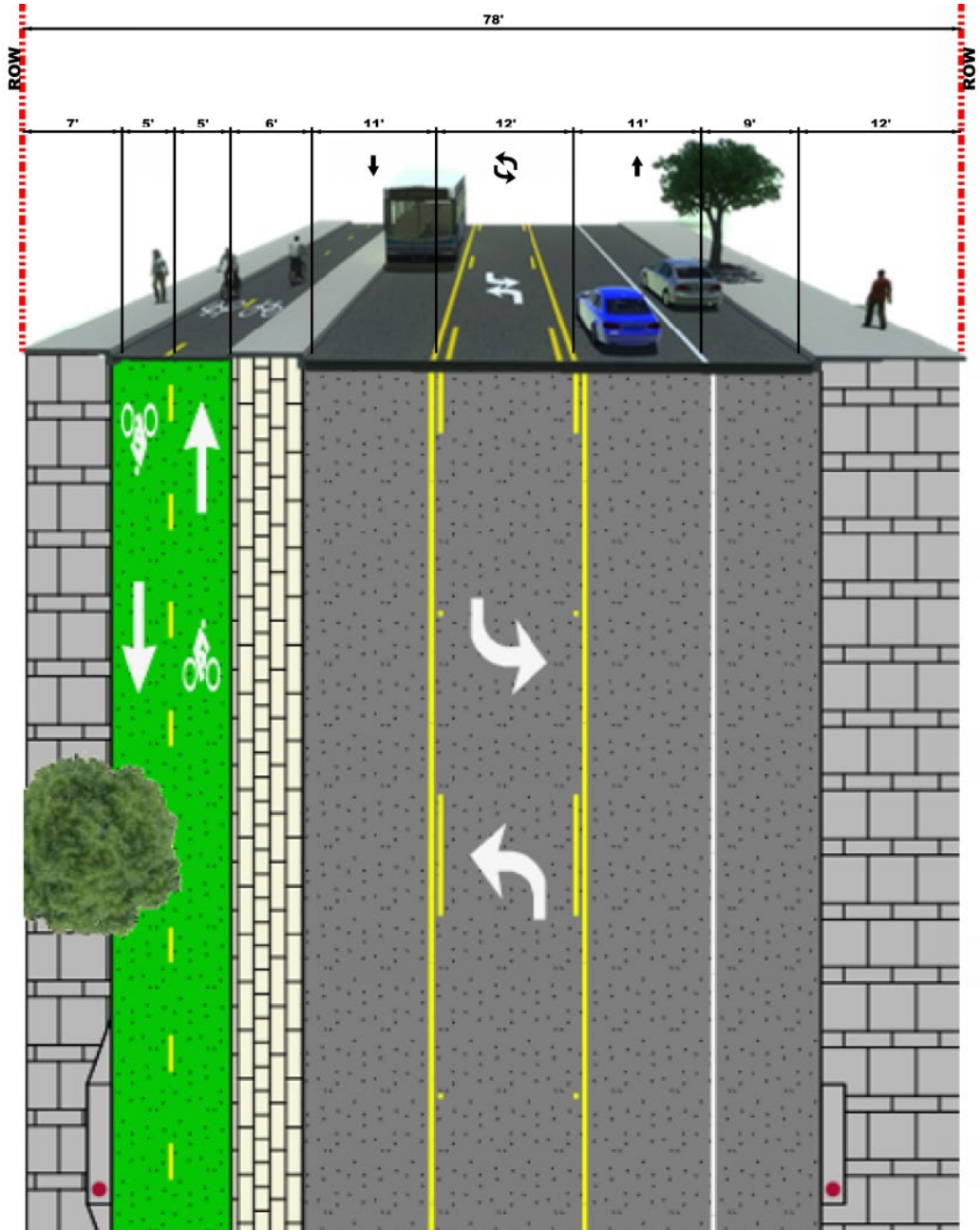
Option 3- Four Lanes with Bike Lanes



Features

- Four Travel Lanes
- Protected Bike Lanes Both Sides
- No On-Street Parking
- Sidewalks: 11 Feet
- No Bulb-outs for Transit Loading/Unloading (Safety Issue)

Option 4 - Three Lanes with Bike Lanes



Features

- Unable to Pass Buses in Either Direction
- Two-Way Cycle Track
- Utility Lane: On-Street Parking/ Rideshare/Loading
- Narrow Sidewalks: 7-12 Feet
- Minimal Waiting Area for Transit Loading/ Unloading

VISSIM- Option 1 - Current Design-Build Option

VIDEO

VISSIM- Option 1 - Current Design-Build Option

VIDEO

VISSIM- Option 2 - Three Lanes with Bike Lanes & On-Street Parking

VIDEO

VISSIM - Option 2 - Three Lanes with Bike Lanes and On-Street Parking

VIDEO

VISSIM- Option 3 – Four Lanes with Bike Lanes

VIDEO

VISSIM-Option 3 - Four Lanes with Bike Lanes

VIDEO

VISSIM- Option 4 - Three Lanes including Center Turn Lane and Bike Lanes

VIDEO

Results Comparison

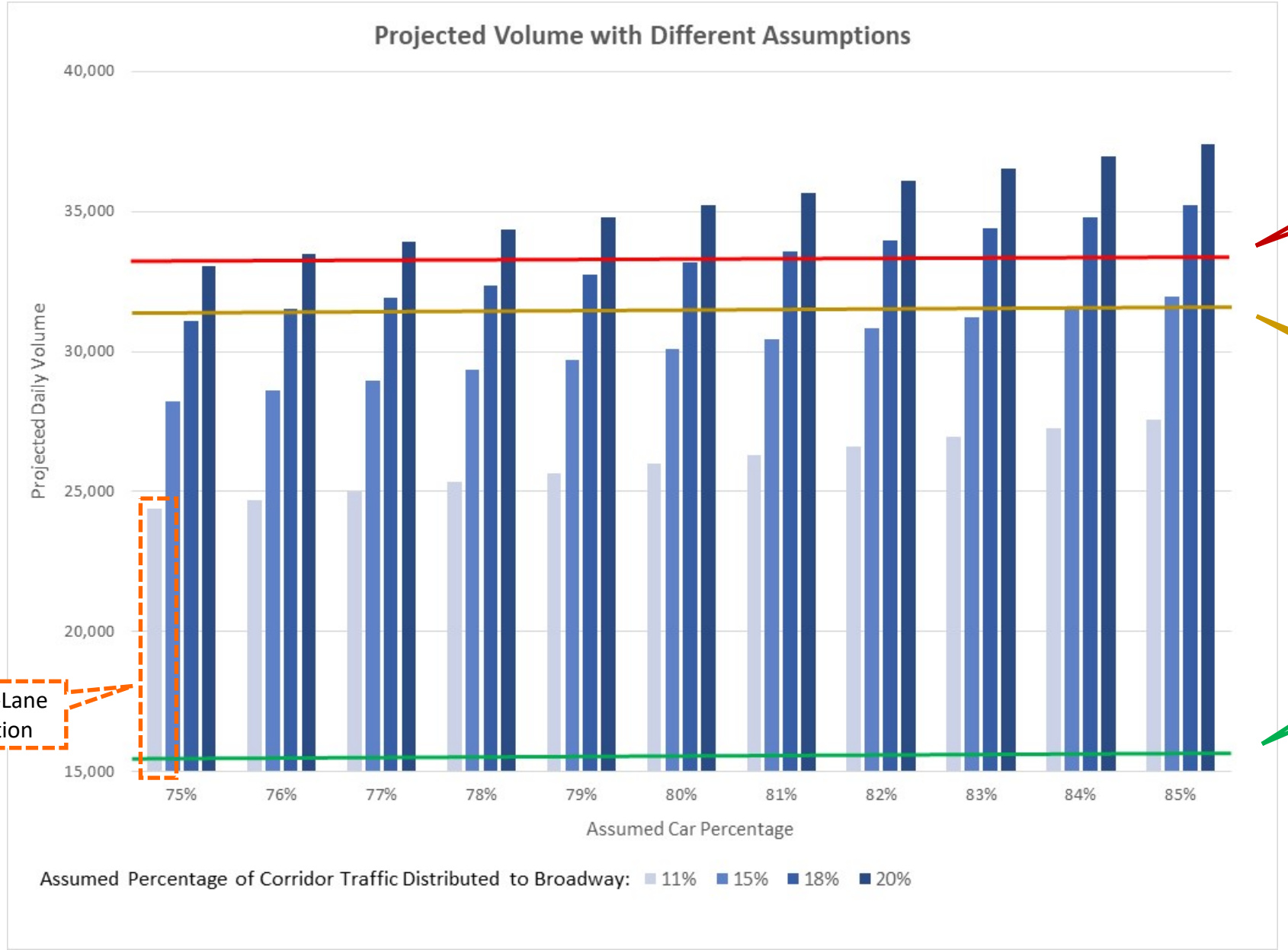
Option	Existing Geometry (No Build)	Option 1: 40% Design-Build 4 lanes + on-street parking	Option 2: 3 lanes + bike lanes + on-street parking	Option 3: 4 lanes + bike lanes	Option 4: 3 lanes including center turn lane + bike lane
Vehicles LOS - Delay					
3rd	C - 28.2	D - 36.7	**F - 90.8**	D - 36.7	**F - 121.9**
4th	A - 9.2	A - 9.8	B - 16.3	A - 9.8	B - 17.6
McCullough	B - 18.6	D - 35.3	**F - 248.6**	D - 35.3	**F - 236.8**
Brooklyn	B - 11.6	B - 12.1	B - 12.7	B - 12.1	D - 37.5
8th	A - 8.7	A - 7.7	B - 11.1	A - 7.7	**E - 57.0**
9th	B - 10.5	B - 10.1	B - 10.1	B - 10.1	B-10.6
Jones	C - 22.3	C - 22.3	**E - 73.3**	C - 22.3	D - 45.9
Pedestrians LOS	**F**	B	C	**E**	**E**
Transit LOS	C	B	**E**	D	D
Bicycles LOS	**F**	A *	D	C	C
Utility/Parking/Ride Share Lane	N/A	Yes	Yes	**No**	Yes

** Bike Lanes on Avenue B*

Results Comparison

Mode / Options	75%	15%	5%	5%
Option 1 – Current Design Build 40%				
Option 2 – 3 Lanes + Bike Lanes + Parking				
Option 3 – 4 Lanes + Bike Lanes				
Option 4 – 3 Lanes including Center Turn Lane + Bike Lanes				

Result Depends on Assumptions



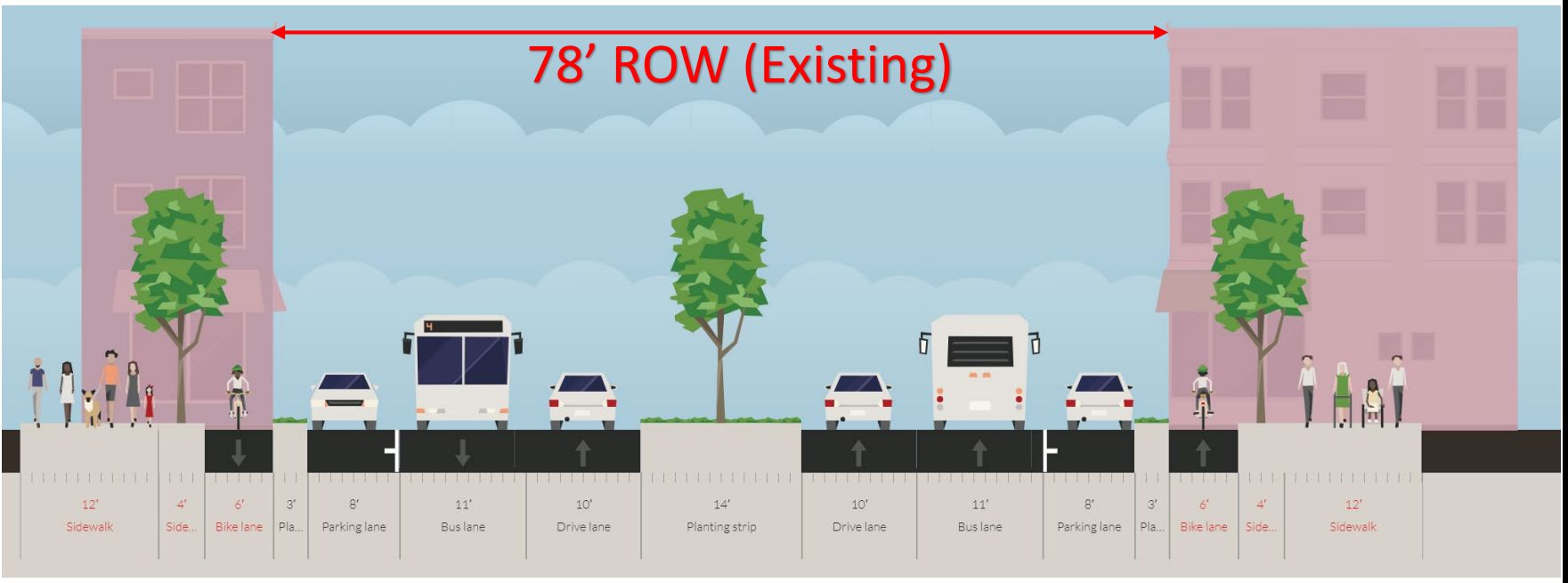
LOS E

LOS D

LOS C

Current 4-Lane Assumption

Ideal Cross Section- Lower Broadway – Actual ROW 44’ Less



- Vehicles
  - Four Travel Lanes with Turn lanes at intersections
- Bikes?
  - Protected Bike Facilities
- Pedestrians?
  - Wide Sidewalks
- Transit?
  - Safe Transit Loading and Unloading