

# River Street Reconstruction



# Working Group #6

**Tuesday, Sept 24, 2019**

# Today's Agenda

- **Welcome and Overview** **5 minutes**
- **Review of Public Input** **10 minutes**
- **Conceptual Design Development** **50 minutes**
  - Review of “givens” and constraints
  - Idea Exploration
  - Concept walkthrough
- **Options / Iterations** **10 minutes**
- **Discussion** **20 minutes**
- **Detailed Comments on Draft Concept** **20 minutes**
- **Next Steps** **5 minutes**

# Welcome and Overview

# Summer & Early Fall schedule complete!

## New Working Group Schedule

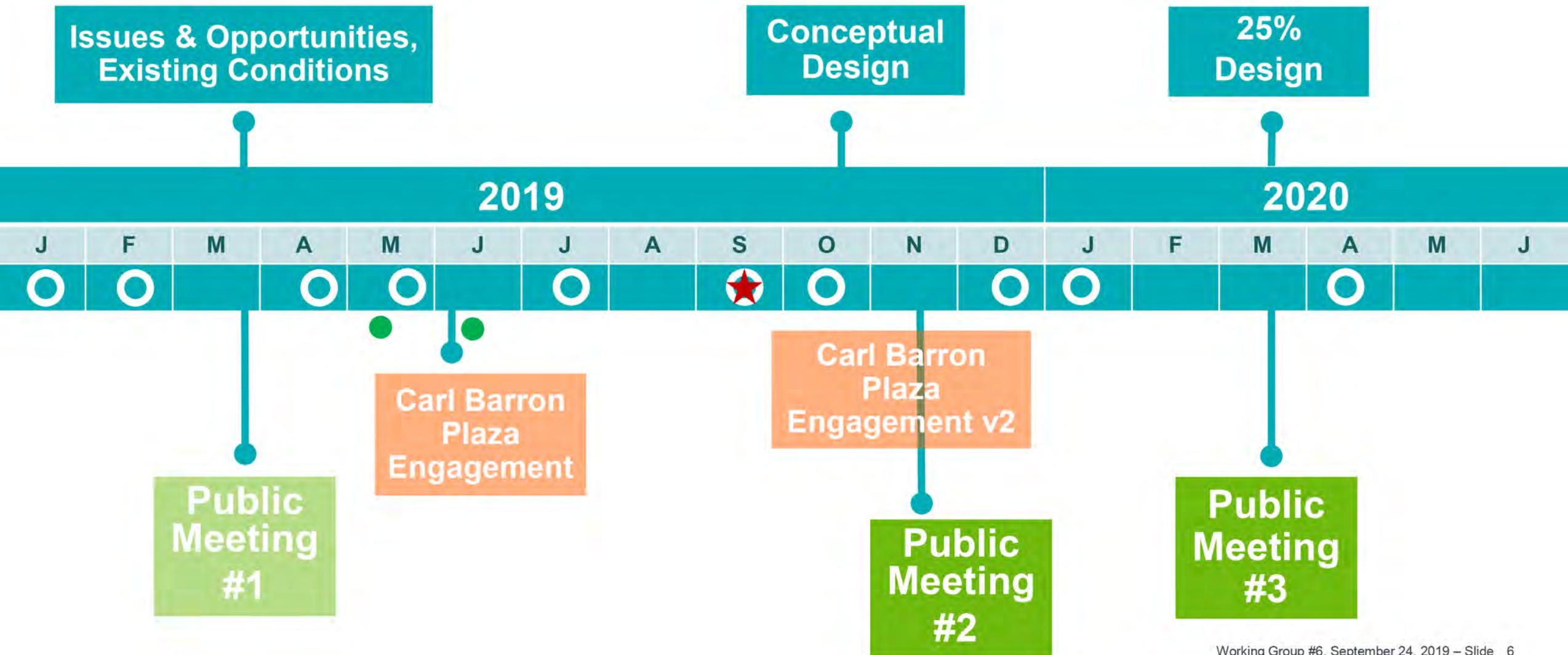
- ✓ Working Group #4 Tues. 5/28
- ✓ Working Group #5 Wed. 7/17
- ✓ Working Group #6 Tues. 9/24

## Other Summer and Fall Activities

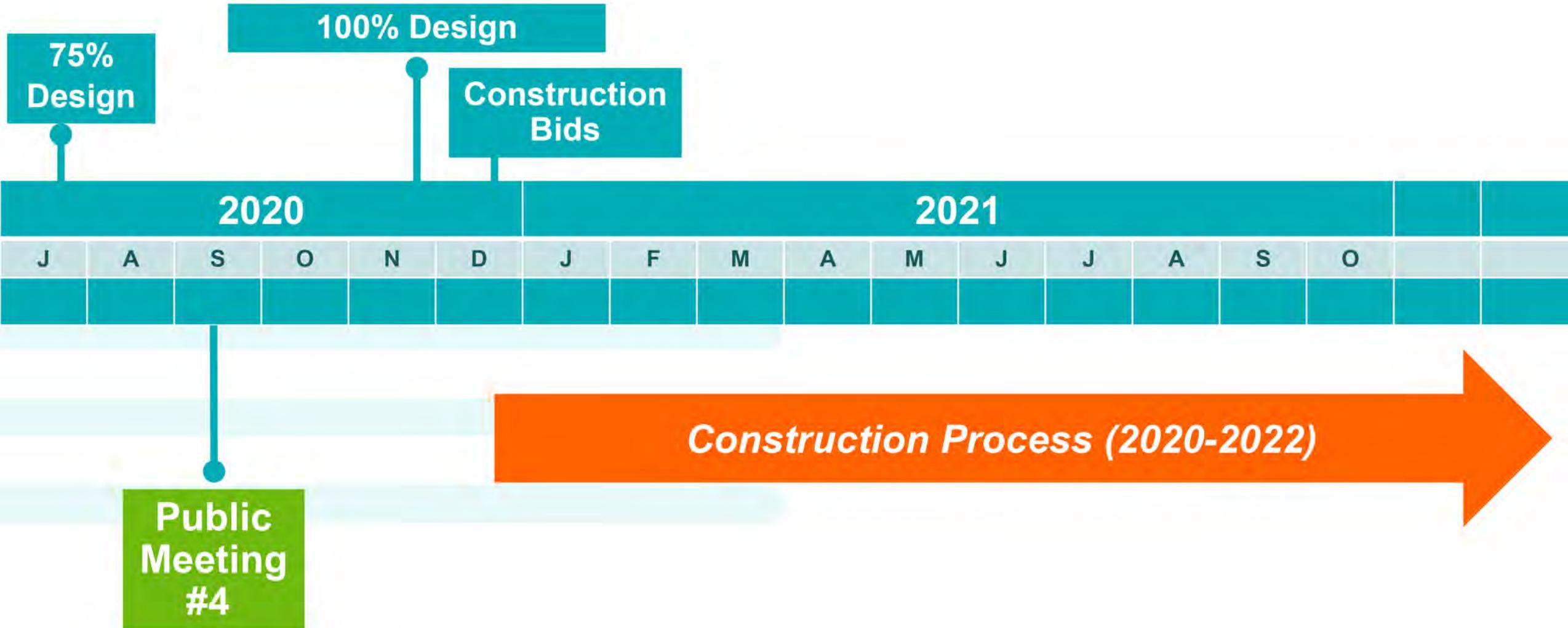
- ✓ Mobility/Safety Walk: Tues. 5/14
- ✓ Outreach at Riverfest: Sat. 6/1
- ✓ Carl Barron Existing Conditions: Open House on Wed. 6/5 and outdoors on Sat. 6/8
- ✓ Urban Design Public Walk: Tues. 6/11
  - *Second stage of Carl Barron Plaza input to be rescheduled*

# NEW Expected Timeline

-  Working Group
-  Public Walks
-  Today



# Expected Timeline



# Working Group Meeting Agendas

- Working Group #6 Tues., 9/24
  - Draft Conceptual Design Alternative Progress – **Memorial Drive to Auburn Street**
- Working Group #7 Tues., 10/22
  - Draft Conceptual Design Alternative Progress – **Auburn Street to Massachusetts Avenue, including Carl Barron Plaza**

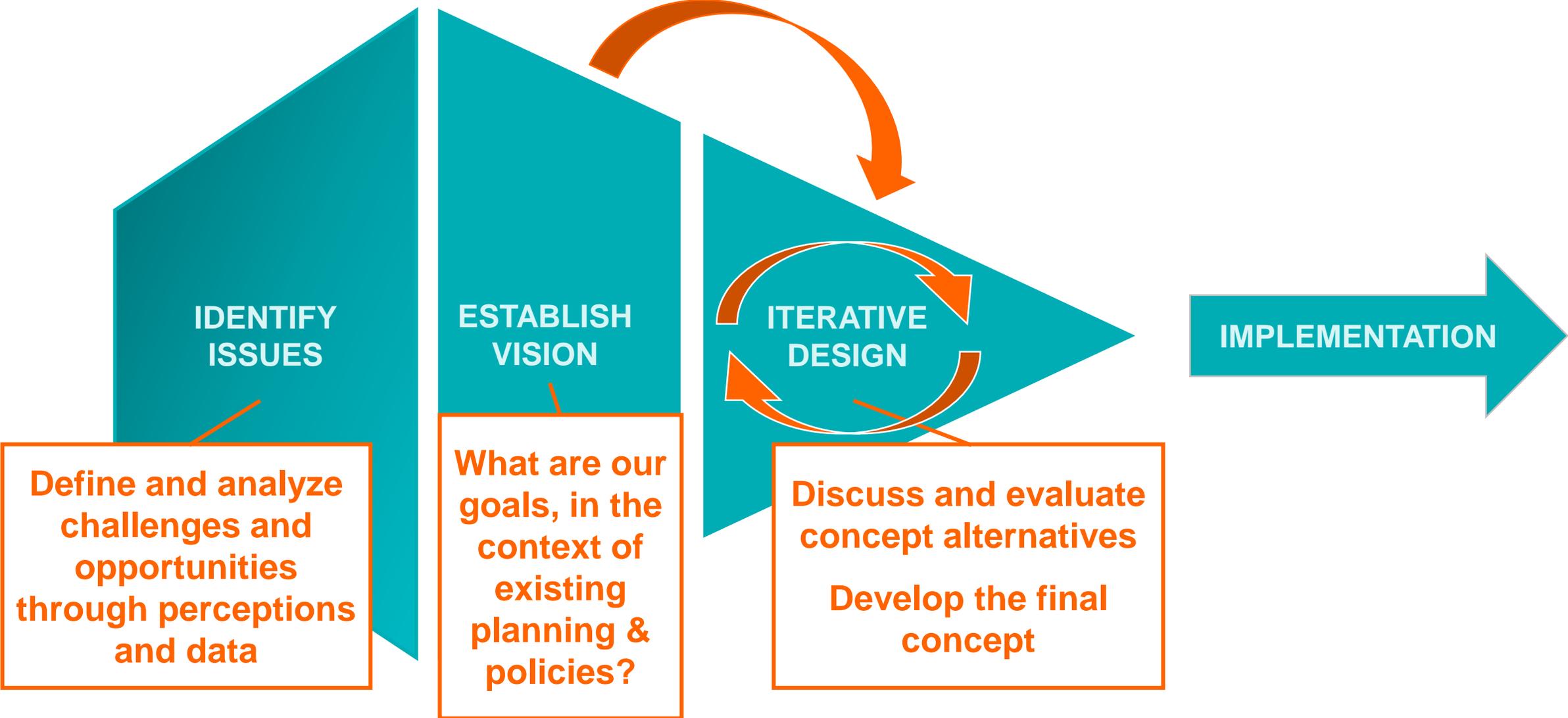


# Ground Rules

- Phones off
- Keep an open mind
- Respect other opinions
- Speak, and let others be heard
- Read agenda and materials before the meeting
- Request agenda changes prior to meeting
- Help us stay on schedule
- Public comments during public comment periods

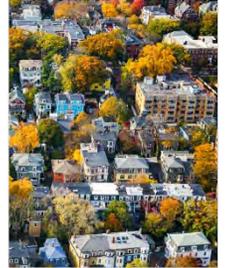
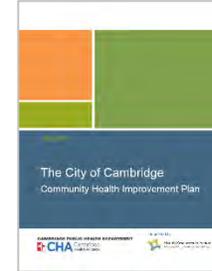
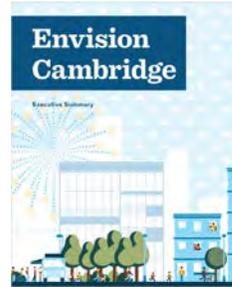
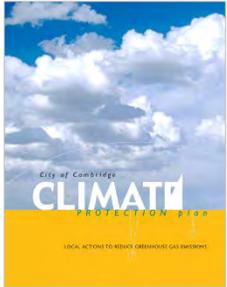


# Entering the Iterative Design Stage

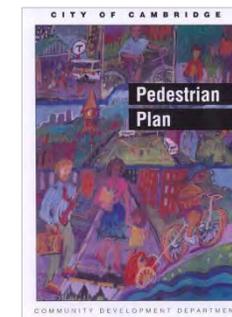


# Review of Public Input

# City Policies and Planning



## New Mobility Blueprint



# Public Meeting #1 – 81 Attendees



# Online Public Input – 93 Commenters

**R** River Street Reconstruction  
**Public Input Map**

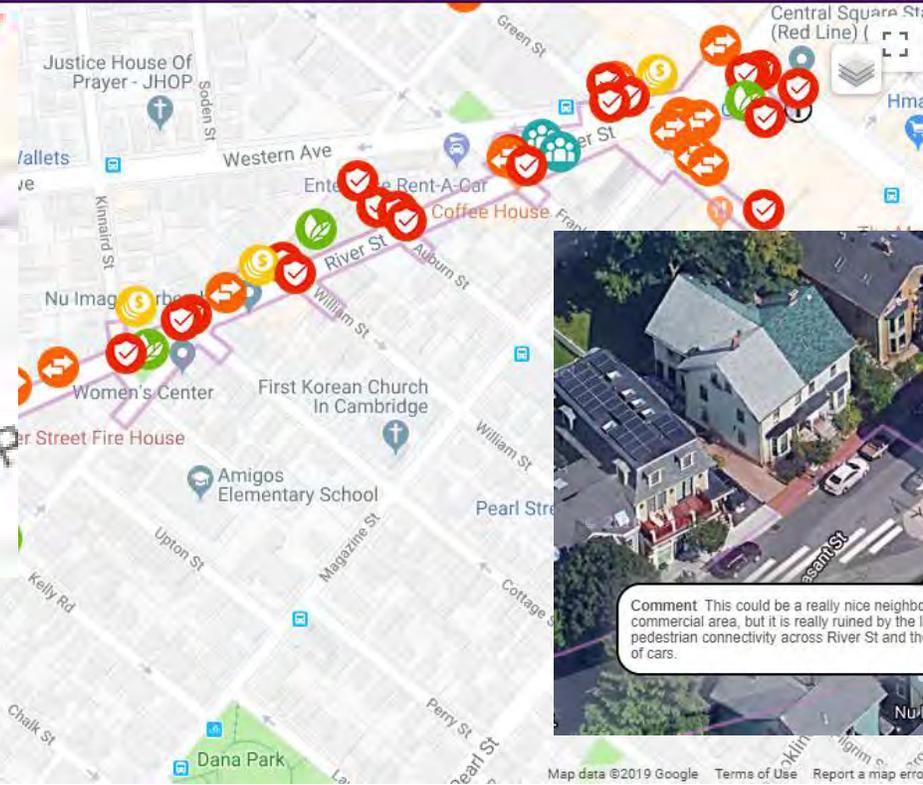
Where do you see issues and opportunities for change on River Street?  
Click **"Add Points"** to add to the map.

ADD AS MANY POINTS AS YOU WOULD LIKE

- Activity/ Public Realm
- Commerce/ Business
- Greenery/ Landscape
- Mobility/ Access
- Safety/ Comfort
- Other
- Project Limits

Instructions & Help Add Points Project Website

Comment: This crosswalk across River Street in front of Riverside Pizza feels unsafe (even with walk sign) because it angles away from Putnam. Many a time we have been crossing River (with walk sign) and a car turning right from Putnam onto River turns without seeing pedestrians. Especially at night.



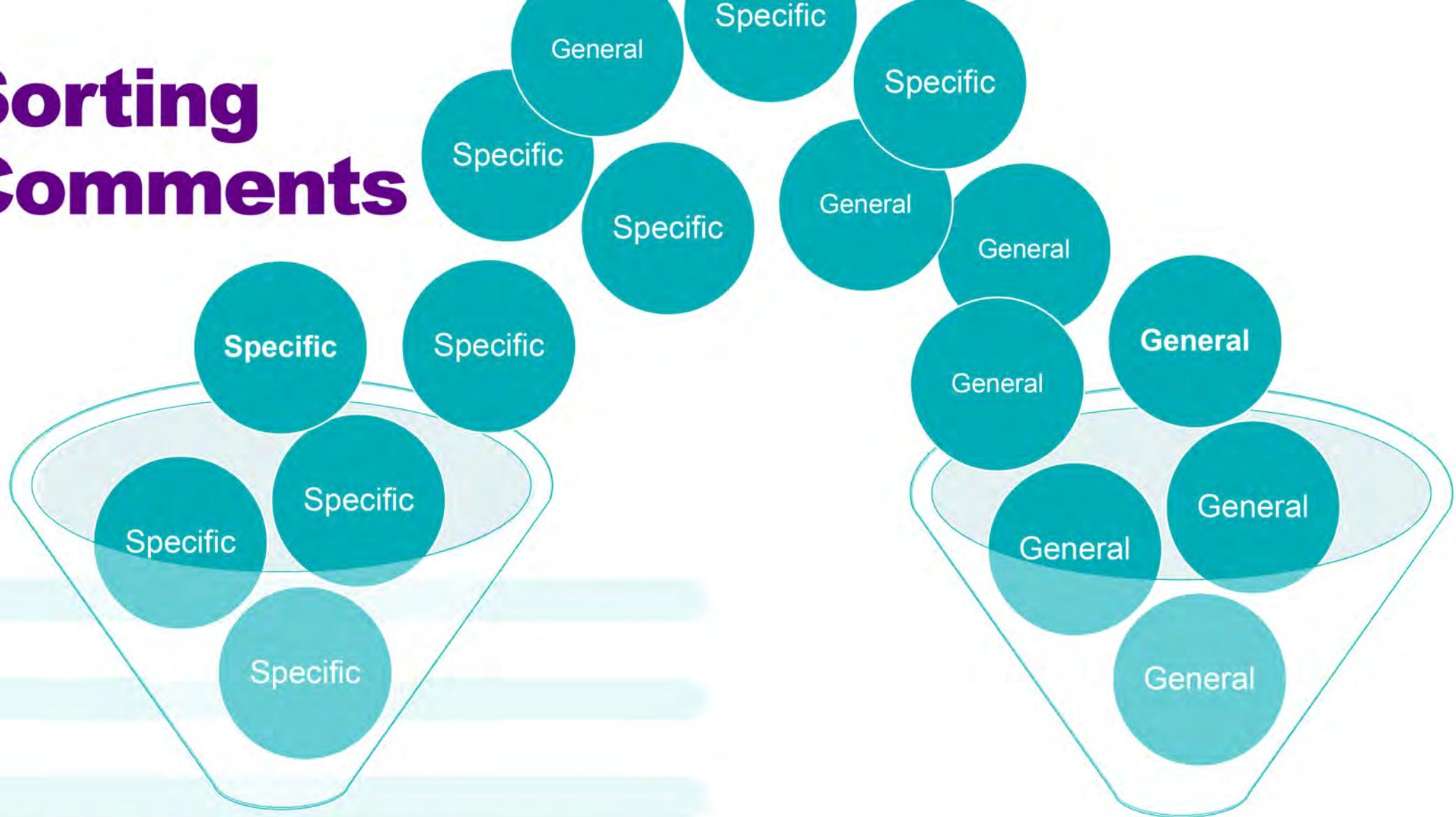
# 5 Working Group Mtgs



# Other outreach...

- River Street pre-construction survey (83 respondents so far)
- Cambridge Winter Farmers Market (3/23/19)
- Mobility Walk (5/14/19)
- River Festival (6/1/19)
- Urban Design Walk (6/11/19)
- Parking Day (9/20/19)
- Business focus group outreach (first breakfast in August)
- Ongoing coordination with Department of Human Service Programs and Cambridge Police Department
- Carl Barron outreach (full exploration of Carl Barron outreach scheduled for Working Group #7 October 22, 2019)

# Sorting Comments



**Location-Specific Comment Map**

**Shared Design Goals**

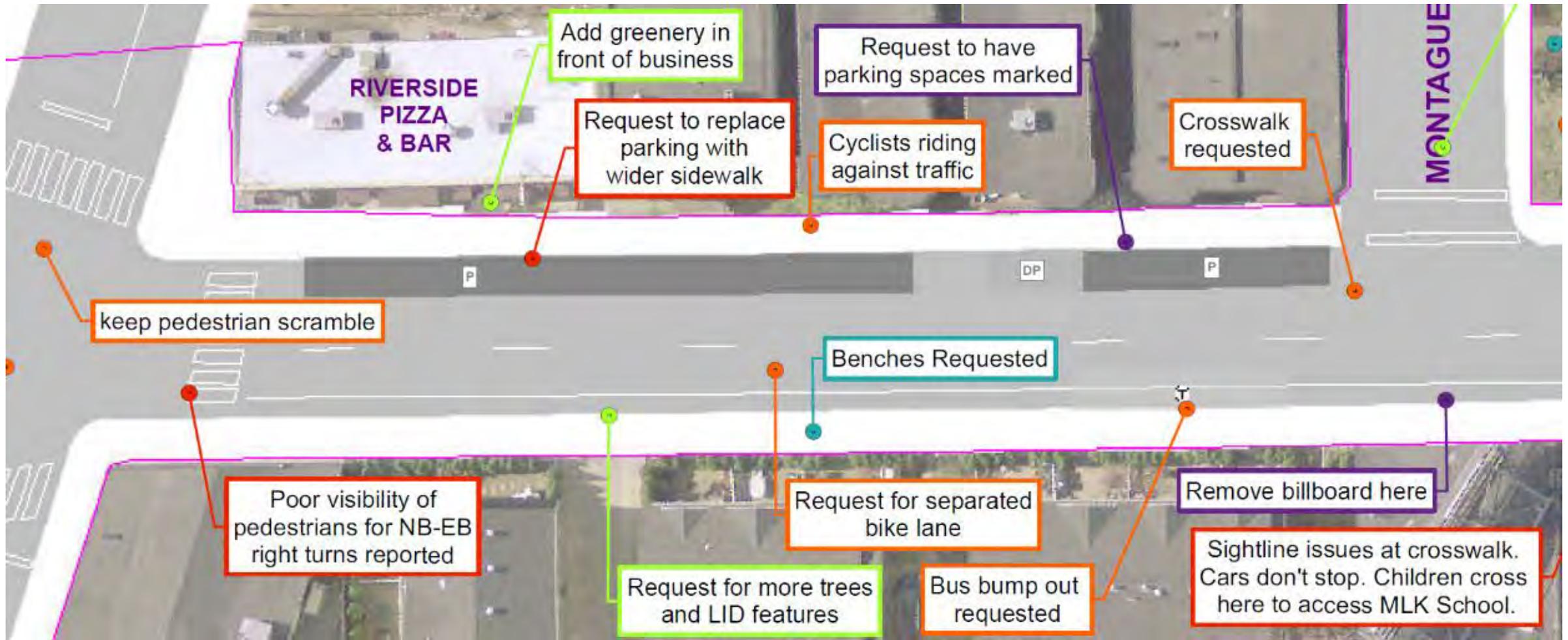
# Guidance for Our Designers: Shared Design Goals

- Safe
- Inclusive
- Human Scale
- Ecological
- Multimodal
- Activated
- Resilient



**Western Avenue**

# Guidance for Our Designers: Location-Specific Comment Map



# The Street Design Exercise

Things we noticed on working group members' layouts of a generic street with the same width as River Street and sample land uses:

- Every group debated reducing the street width to one lane of travel - some wanted it, others were concerned about traffic/queueing impacts
- Most groups alternated green space with parking along the curbside
- Two out of three groups included a one-way bikeway (the third debated it)
- Two out of three groups included a bus lane (the third debated it)

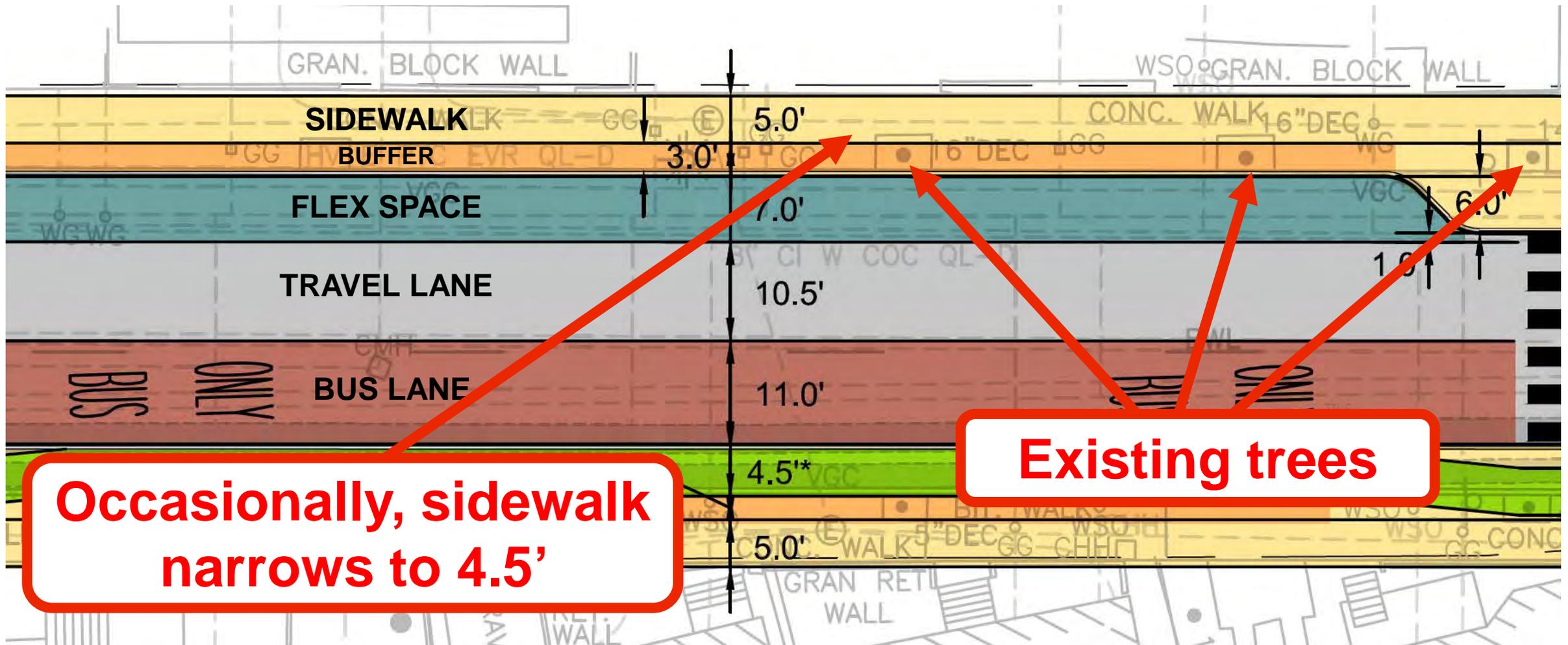


# Conceptual Design Development: Givens and Constraints

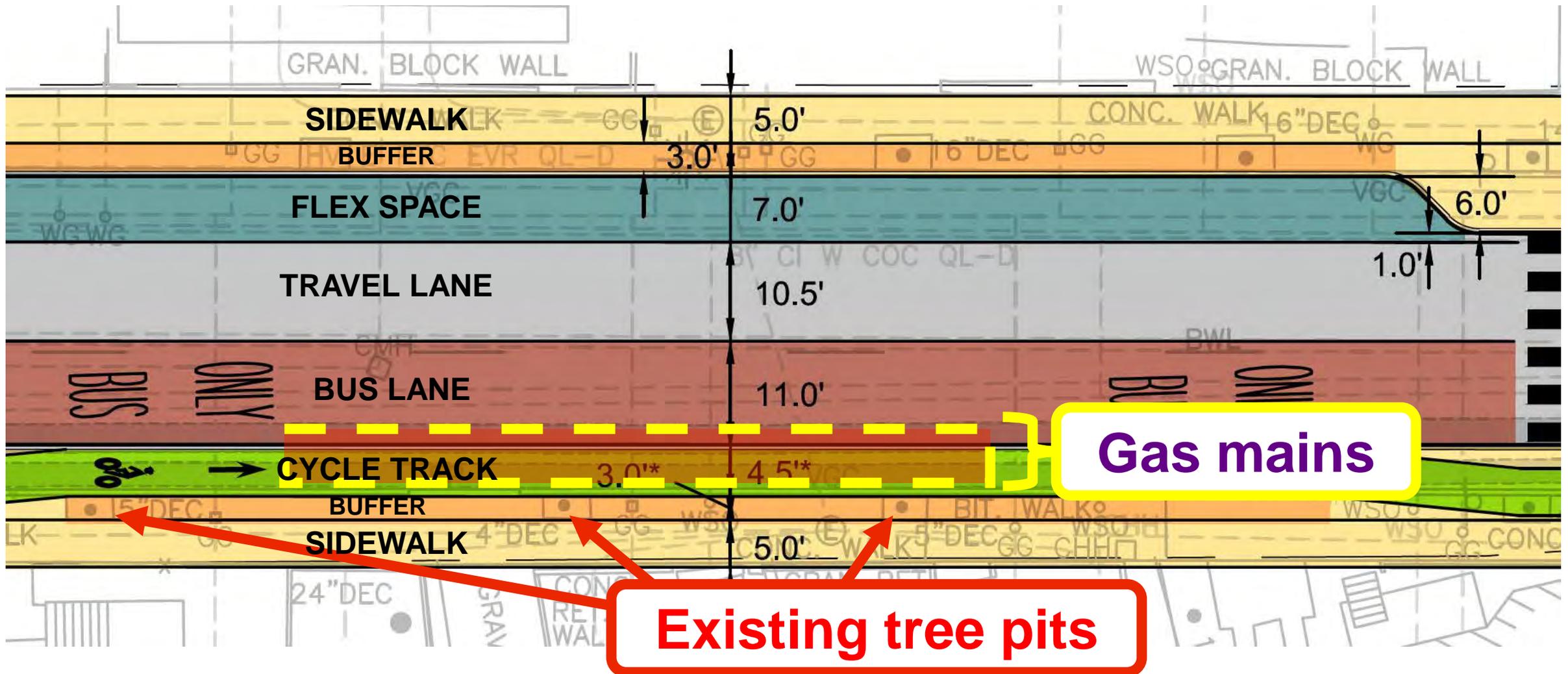
# Givens

- Address flooding & drainage capacity
- Upgrade aging public and private utility infrastructure
- Protect significant utilities which cannot feasibly be relocated
- Preserve healthy trees
- Maximize future trees & improve soil conditions
- Maintain emergency vehicle access (16 to 18 feet)
- Maintain flexibility when routine maintenance or unexpected incidents block part of road
- Include separated bicycle facility (per Cambridge's "Cycling Safety Ordinance")
- Regulate parking to allow us to use curbside space more efficiently
- Maintain regional freight & hazardous materials truck route
- Raise non-signalized side-street crossings
- Improve intersection geometry (slow turns, improve sightlines) while accommodating buses and trucks

# Example of Sidewalk Constraint



# Example of Utility Constraint



# Conceptual Design Development: Idea Exploration

# Many Ideas from the Public Process to Explore, Including:

## Separated Bicycle Facilities

- Left side cycle track
- Two-way cycle track
- One lane cycle track

## Traffic Operations

- Reduce travel lanes to one lane
- Signal timing changes
- Bus only lane

## Pedestrian Facilities

- Safer and additional pedestrian crossings

## Placemaking and Green Infrastructure

- Gateway treatments
- Repurposing curb space for green infrastructure, seating for businesses, etc.
- Creating places to be

# A Few Ideas Were Tough to Implement

## Separated Bicycle Facilities

- ***Left side cycle track***
- ***Two-way cycle track***
- One lane cycle track

## Traffic Operations

- ***Reduce travel lanes to one lane***
- Signal timing changes
- Bus lane

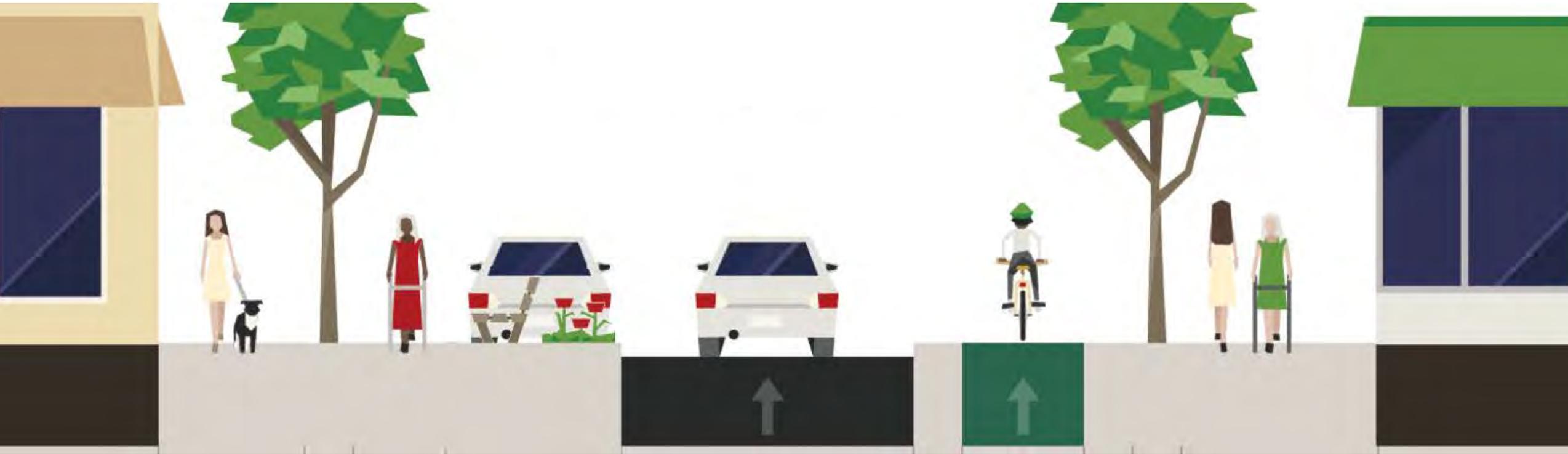
## Pedestrian Facilities

- Safer and additional pedestrian crossings

## Placemaking and Green Infrastructure

- Gateway treatments
- Repurposing curb space for green infrastructure, seating for businesses, etc.
- Creating places to be

# One-lane between Putnam Avenue and Fire Station



# One-lane between Putnam Avenue and Fire Station

## Pros

- 4' to 6' more for activation/buffer on north side
- Shorter pedestrian crossings
- Wider bicycle facility/wider buffer
- Easier bicycle facility maintenance

## Cons

- Requires raised cycle track to be mountable (emergency vehicle access) which could exacerbate illegal parking/stopping/loading



Early rendering of Beacon Street cycle track (Somerville)

# One-lane between Putnam Avenue and Fire Station

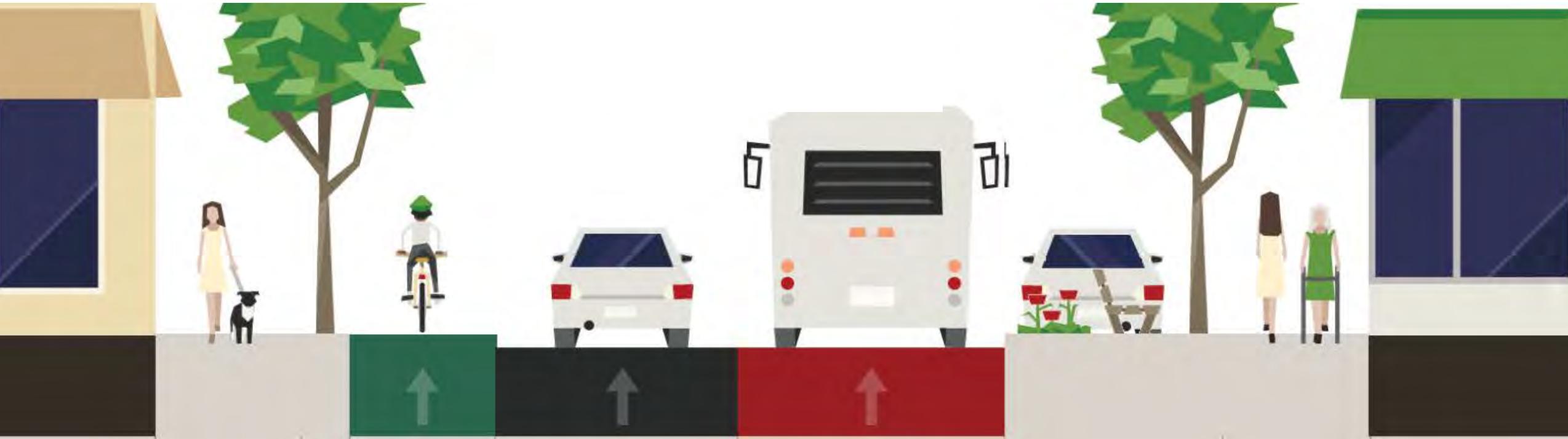
## Pros

- 4' to 6' more for activation/buffer on north side
- Shorter pedestrian crossings
- Wider bicycle facility/wider buffer
- Easier bicycle facility maintenance

## Cons

- Requires raised cycle track to be mountable (emergency vehicle access) which could exacerbate illegal parking/stopping/loading
- Maintaining clear width and mountable feature would be challenging during and after snow events
- Buses experience same congestion as general vehicles
- Street/utility repairs would block entire street
- Routine operations including trash collection and street sweeping would block street

# Left-side Cycle Track



# Left-side Cycle Track

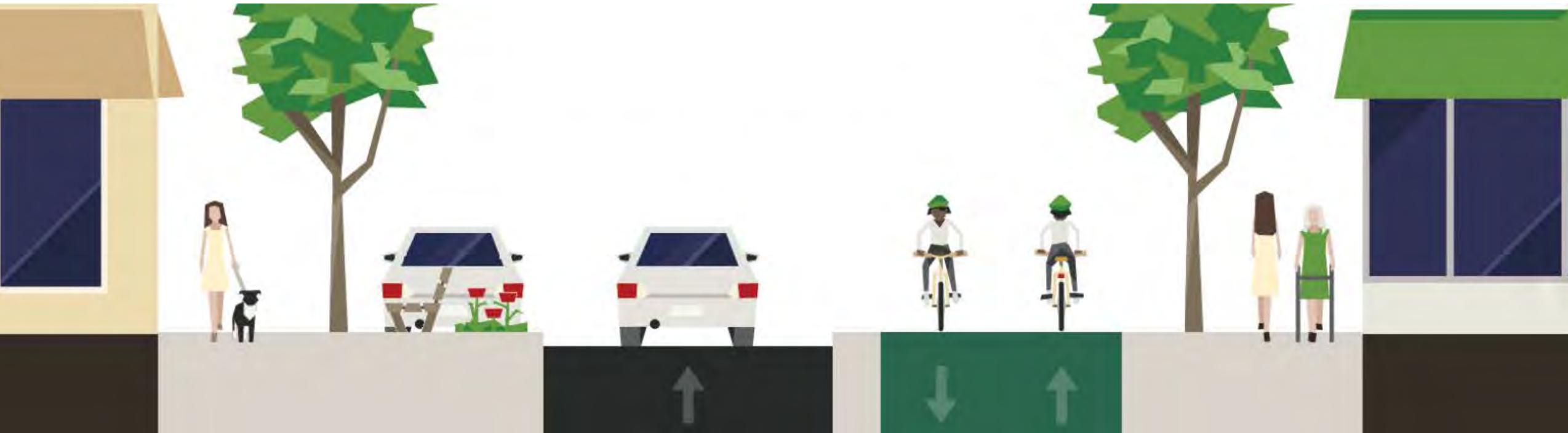
## Pros

- Reduces number of potential bus stop conflicts
- Sunny side of the street (melts ice quicker)
- Fewer major driveway conflicts

## Cons

- Cyclists would cross more conflict points/travel lanes
- Transitions at each end of corridor would cause more delay for cyclists
- Uncommon design
- Adjacent to general travel lane (as opposed to a bus lane, which has fewer vehicles and trucks)

# Two-way Cycle Track



# Two-way Cycle Track

## Pros

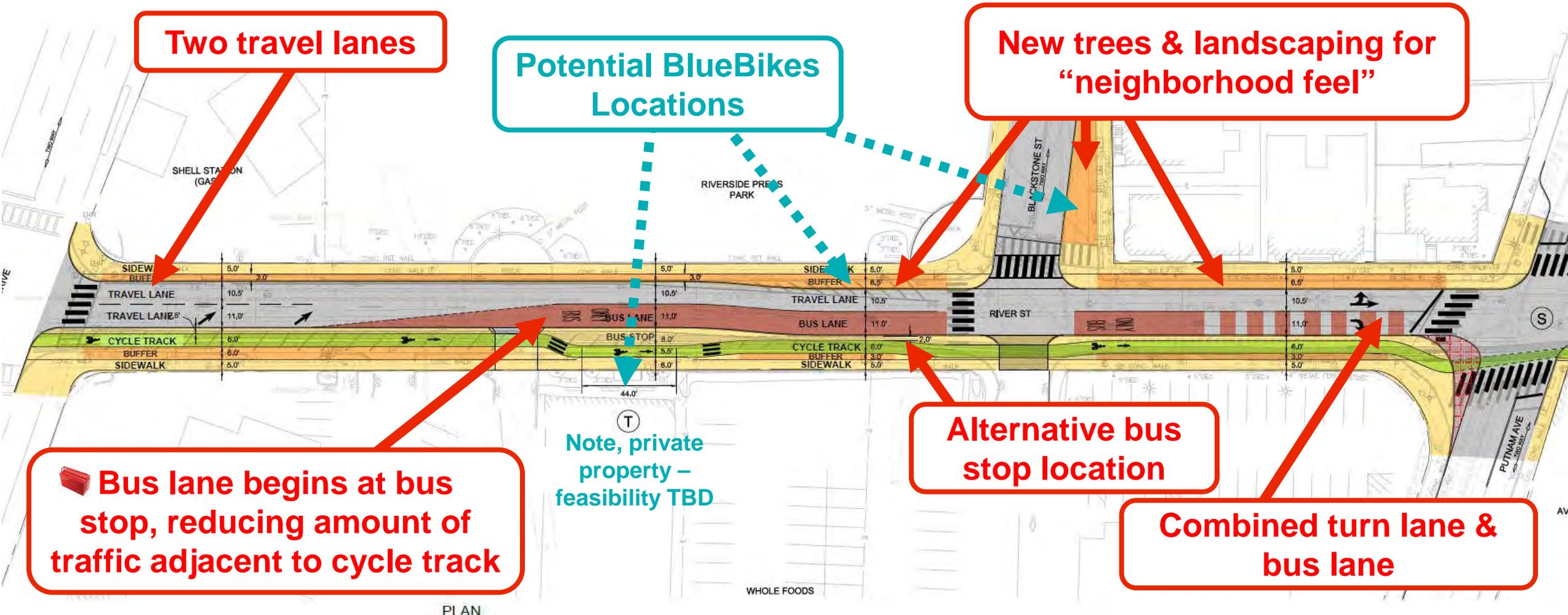
- Allows for two-way travel and accommodates desire line to/from Allston neighborhood
- Creates a wider buffer between pedestrians and street

## Cons

- Retaining two travel lanes requires removal of most curbside uses, including commercial loading and disabled parking
- Reduces opportunity to provide activation spaces for local businesses
- Significant conflict points for cyclists who are travelling contraflow to traffic

# Concept Walkthrough

# Memorial Drive to Putnam Ave



**Two travel lanes**

**Potential BlueBikes Locations**

**New trees & landscaping for “neighborhood feel”**

**Bus lane begins at bus stop, reducing amount of traffic adjacent to cycle track**

Note, private property – feasibility TBD

**Alternative bus stop location**

**Combined turn lane & bus lane**

PLAN

# Memorial Drive to Putnam Ave

Two travel lanes

Potential BlueBikes Locations

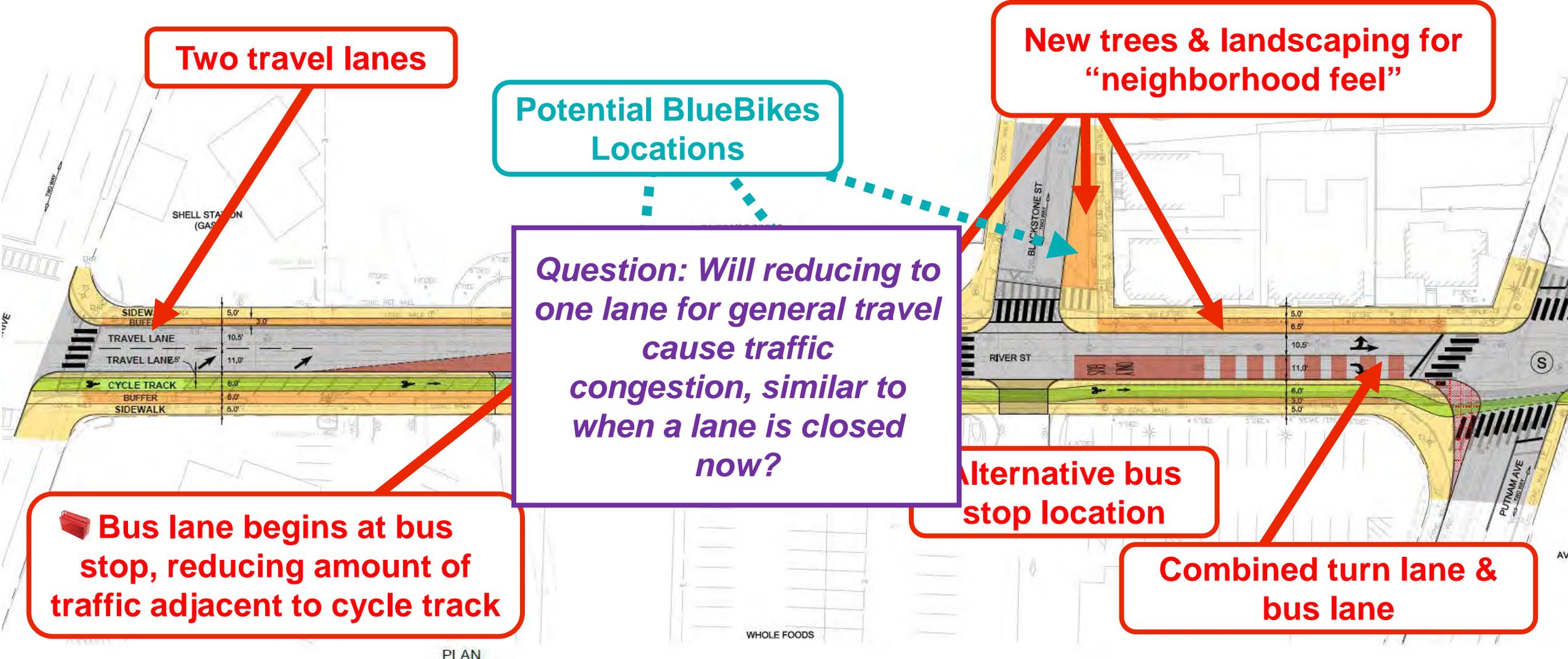
New trees & landscaping for “neighborhood feel”

*Question: Will reducing to one lane for general travel cause traffic congestion, similar to when a lane is closed now?*

Bus lane begins at bus stop, reducing amount of traffic adjacent to cycle track

Alternative bus stop location

Combined turn lane & bus lane



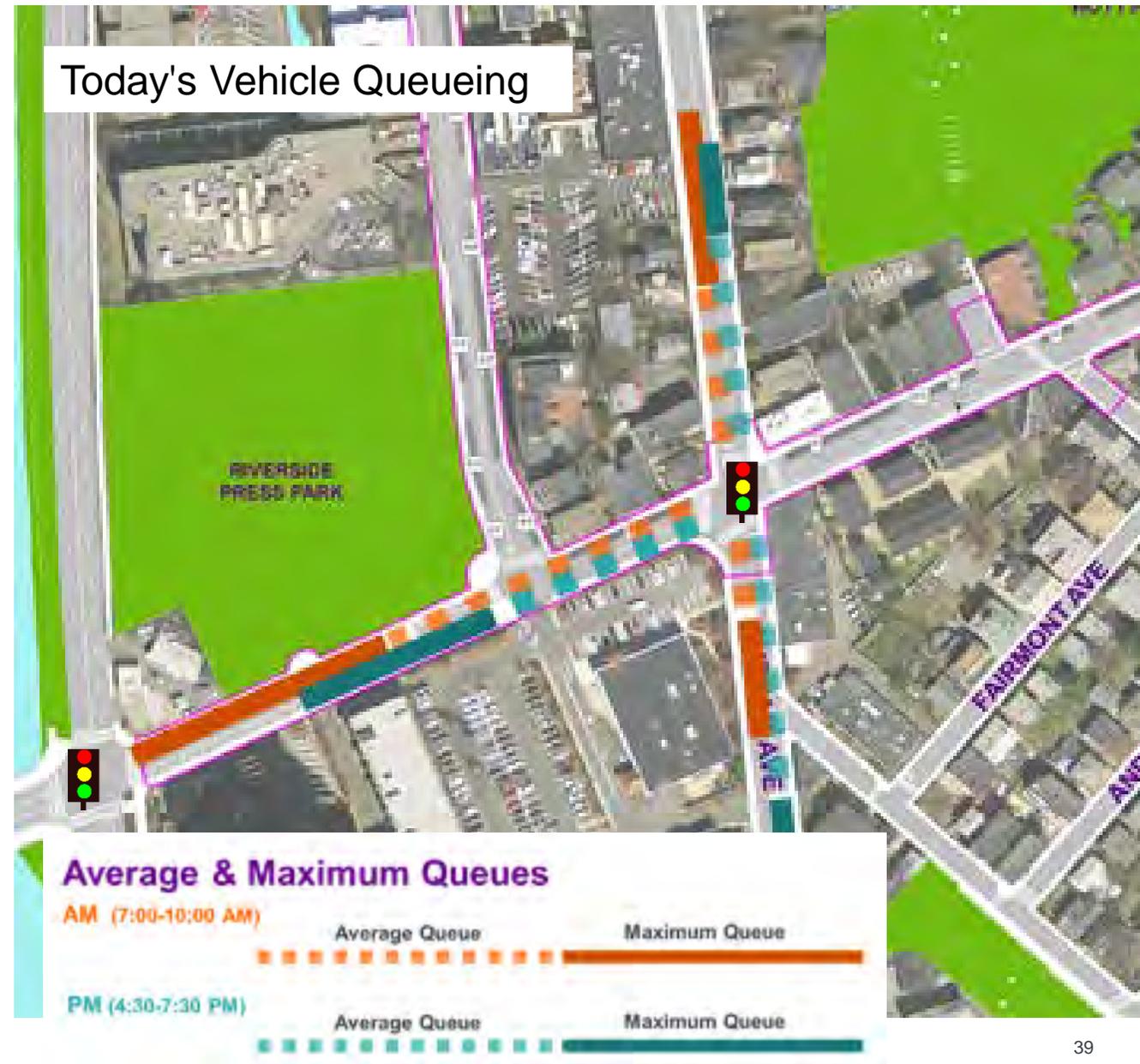
PLAN

WHOLE FOODS

# The impact of signal timing

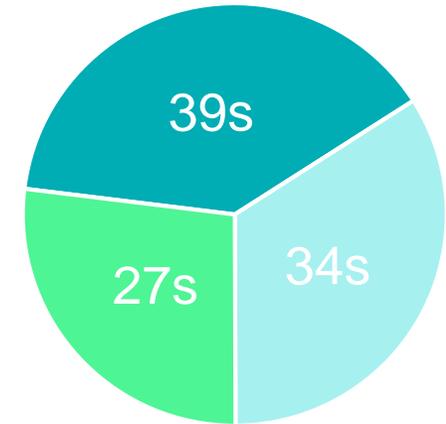
- Signals control how many people can get through an intersection
- Today, there is an "all stop" pedestrian crossing phase, which forces pedestrians to wait two phases to cross (73 seconds)
- "Concurrent" pedestrian phasing can help move everyone (people walking, biking taking the bus, and driving) through the intersection with less delay

Based on field measurements of vehicle queues

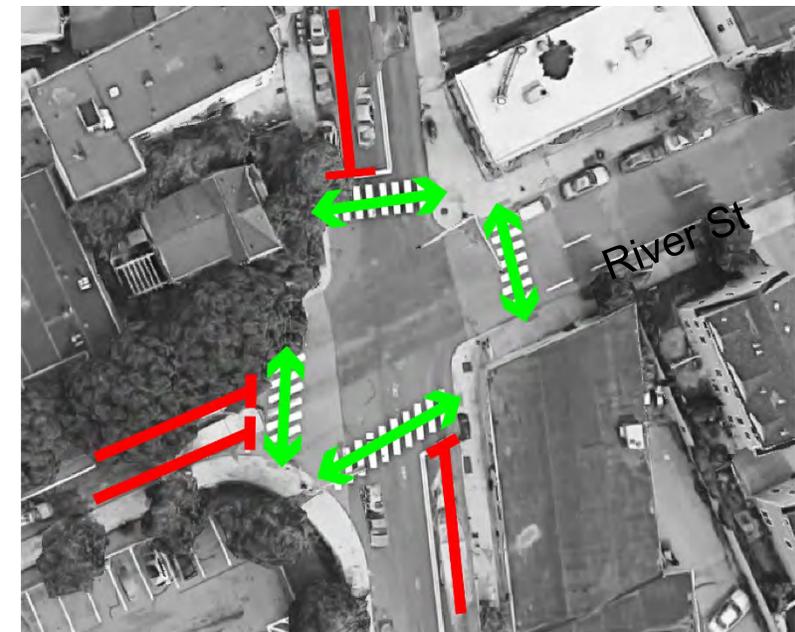
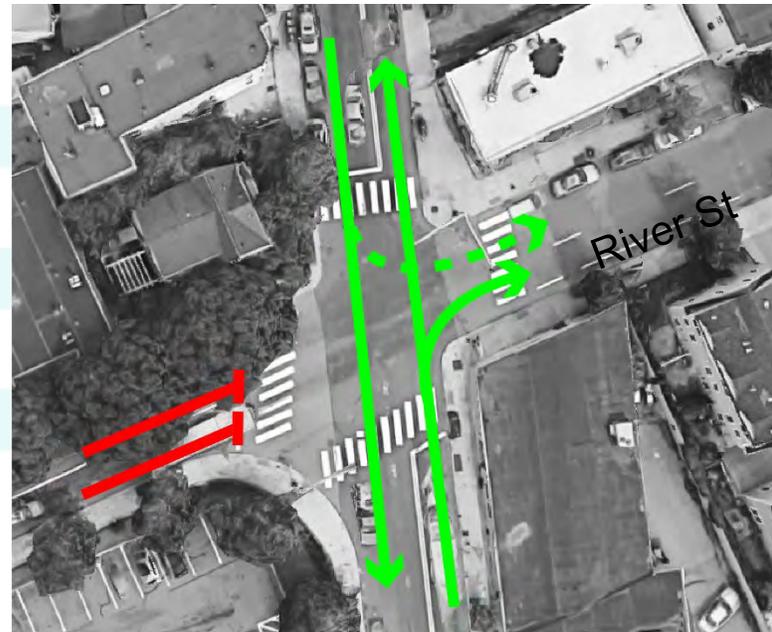


# Today's signal timing at Putnam limits all users of River St.

- 3-phase signal, total 100 second cycle time
- The all stop or exclusive pedestrian phase forces everyone to wait longer to cross and limits how many vehicles can get through during the green time.

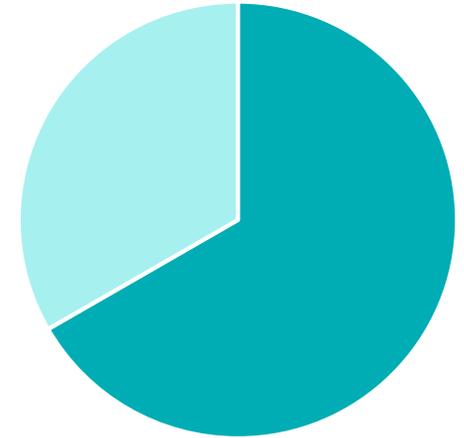


■ River Street    ■ Putnam Avenue    ■ Pedestrian

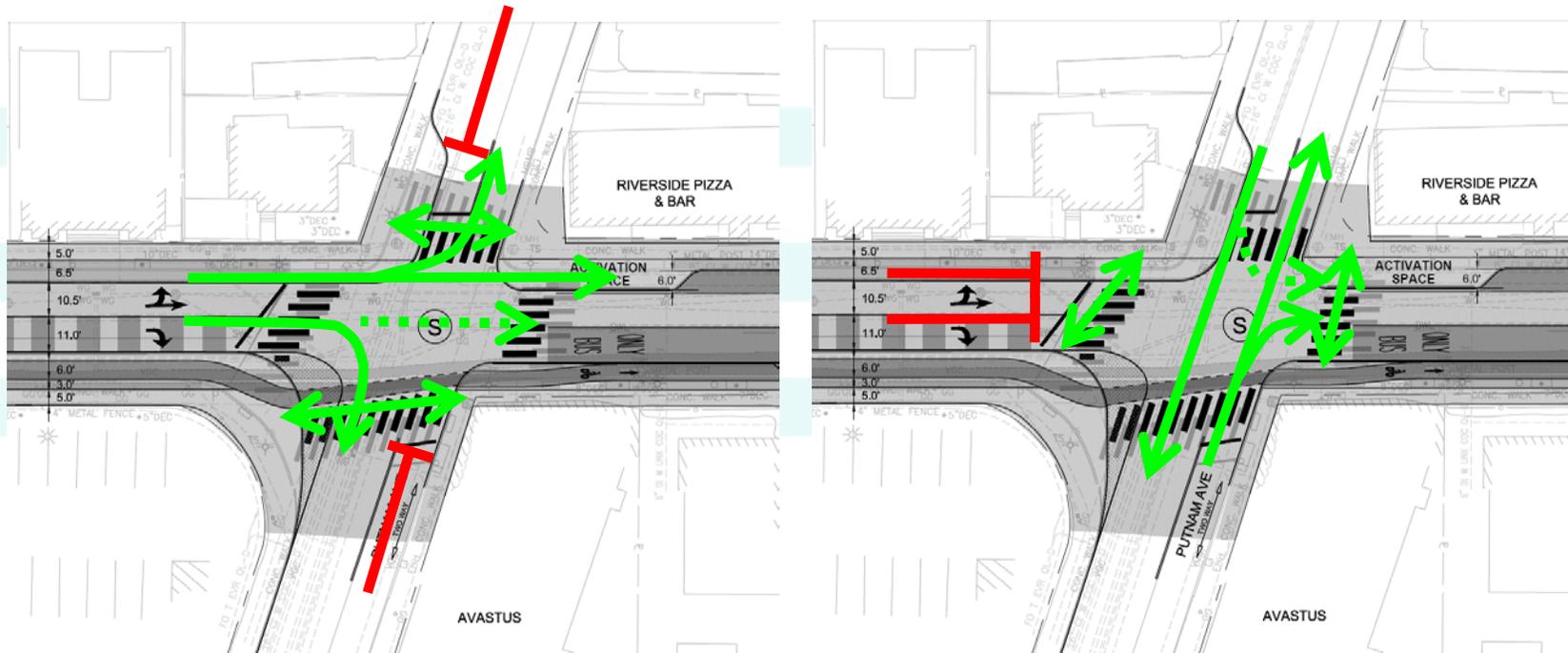


# Concurrent phasing at Putnam Avenue could open the valve

- 2-phase signal can be more efficient for everyone
- **What about safety??**
  - Concurrent (pedestrians cross with parallel traffic) with Leading Pedestrian Interval (LPI)
  - Safety can be improved with shorter crossing distances and better sightlines



■ River Street ■ Putnam Avenue

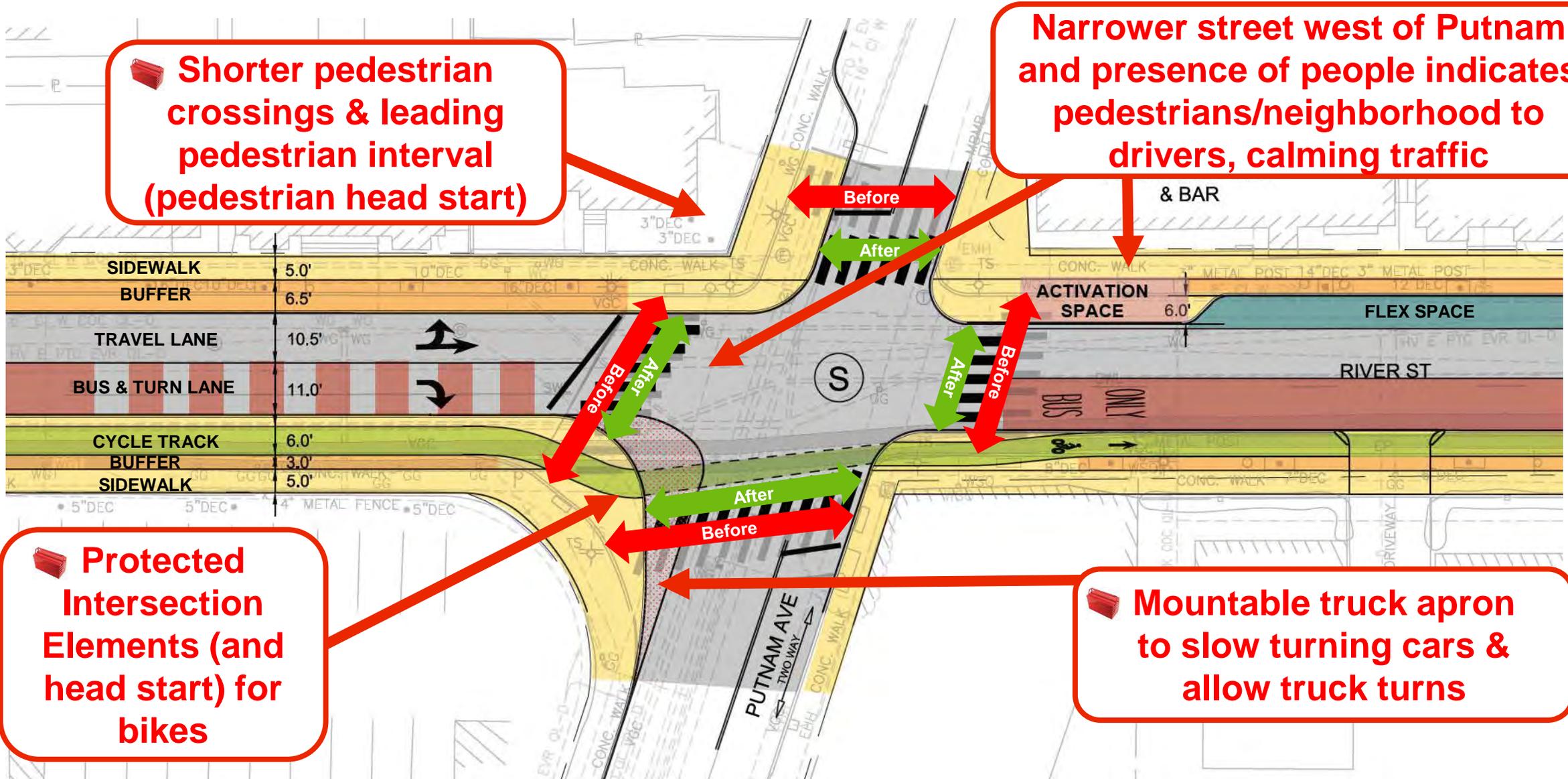


Pedestrians cross concurrently with traffic in an intersection with a safer geometry

# Intersection with Putnam Avenue

Shorter pedestrian crossings & leading pedestrian interval (pedestrian head start)

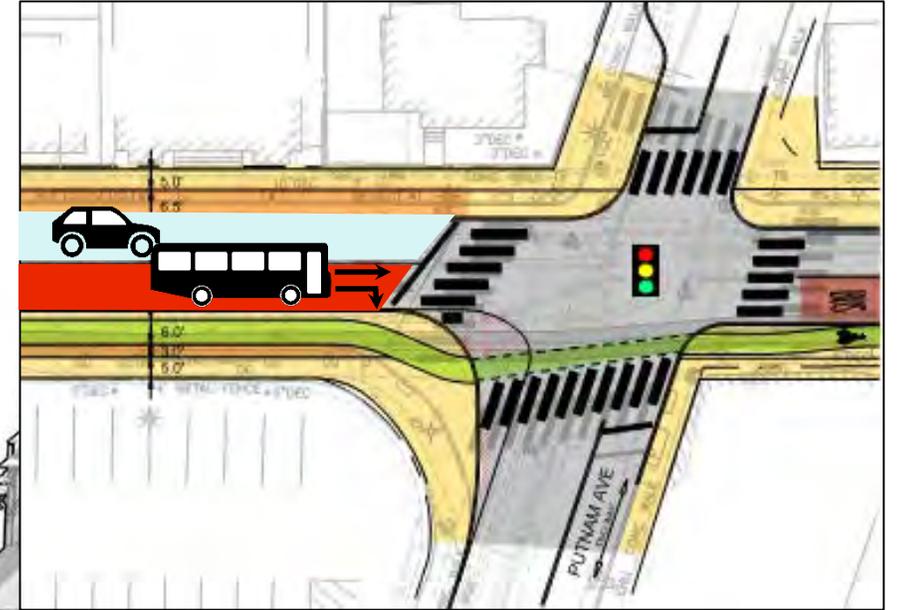
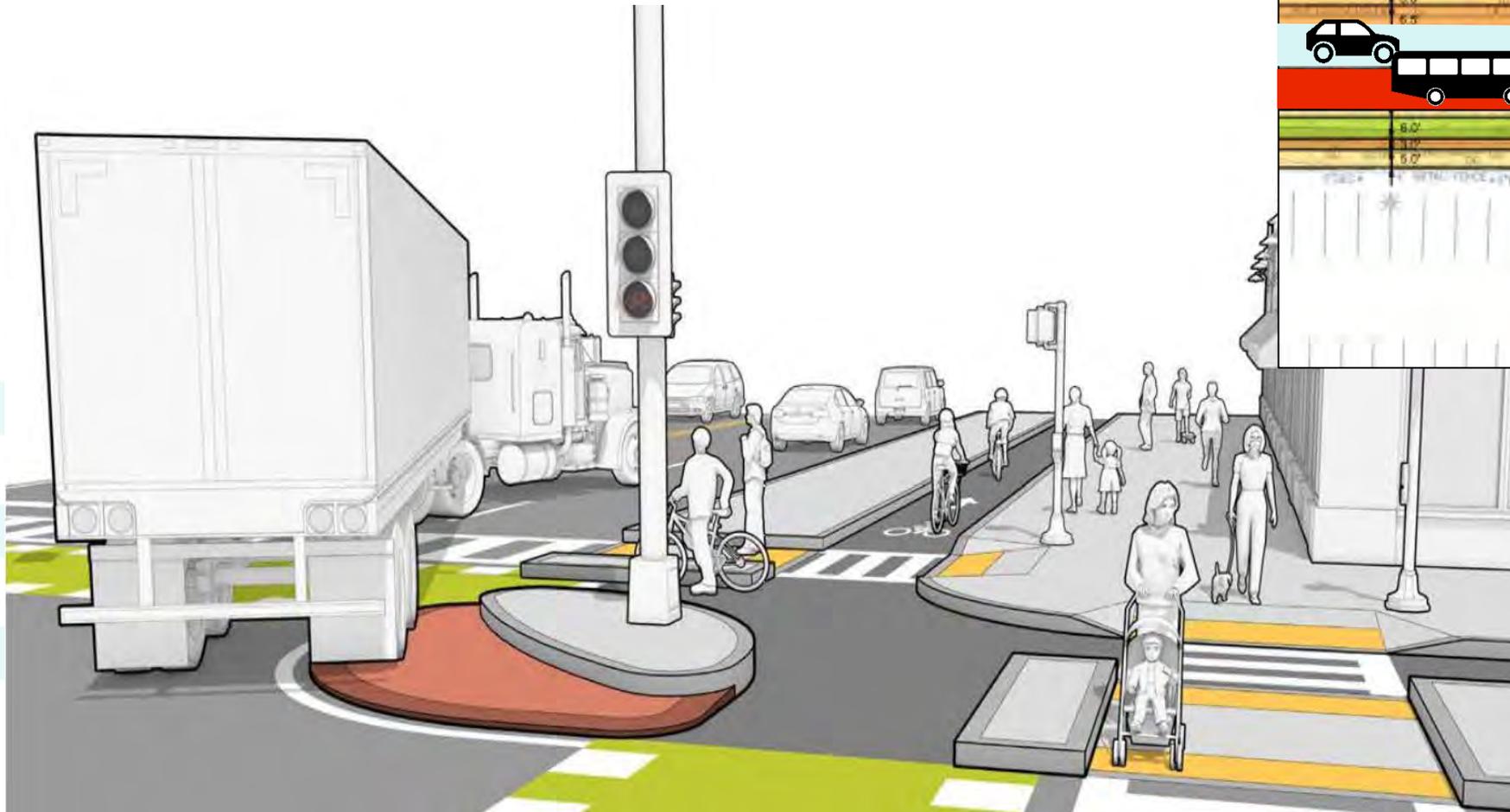
Narrower street west of Putnam and presence of people indicates pedestrians/neighborhood to drivers, calming traffic



Protected Intersection Elements (and head start) for bikes

Mountable truck apron to slow turning cars & allow truck turns

# Mountable Turn Apron



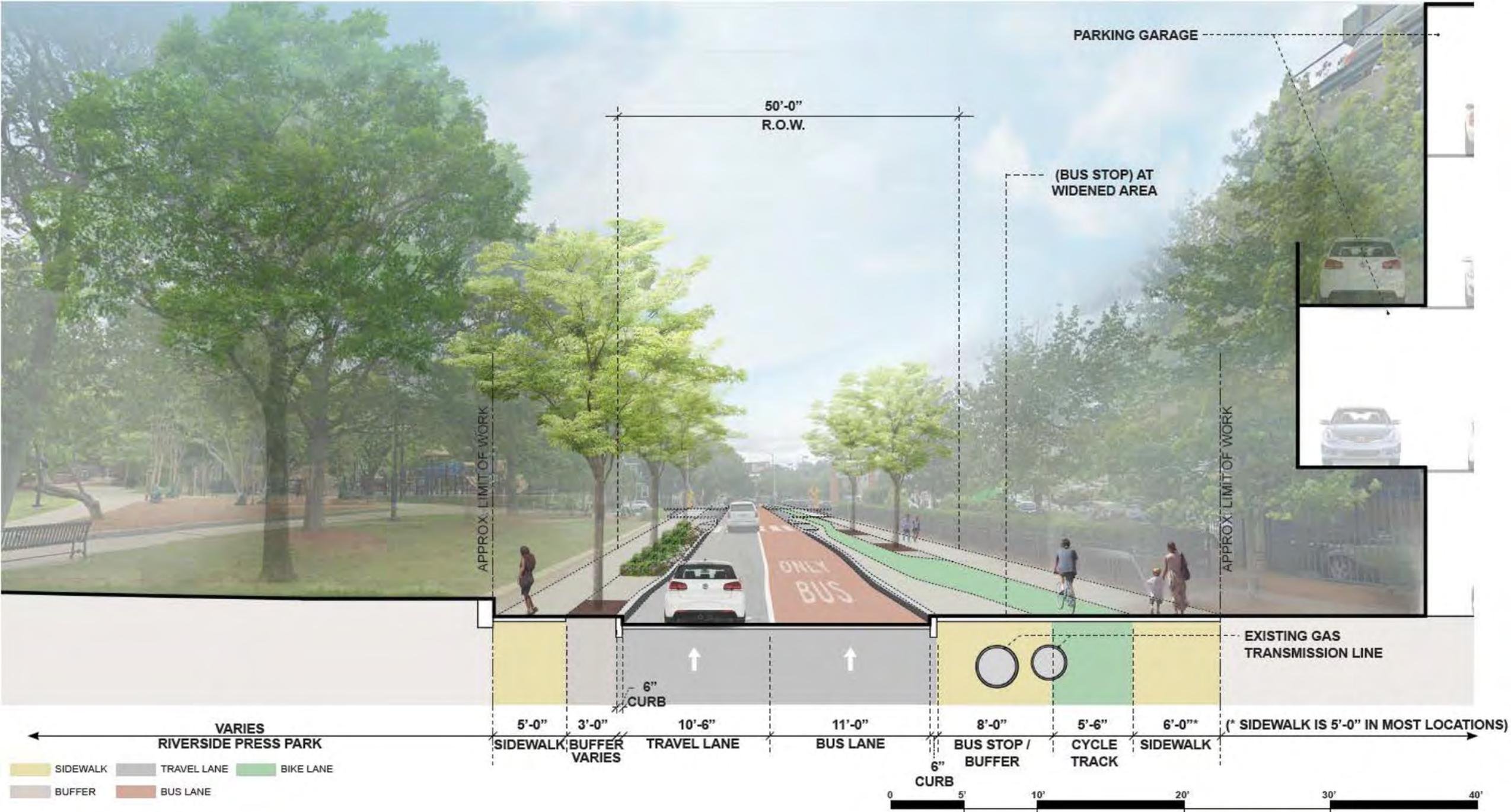
-  General purpose lane
-  Transit lane + right turn lane





# River Street Today





# Putnam Avenue to Kelly/Howard Streets

Activation zones supporting local businesses

Vehicle storage in flex space also provides friction to calm traffic

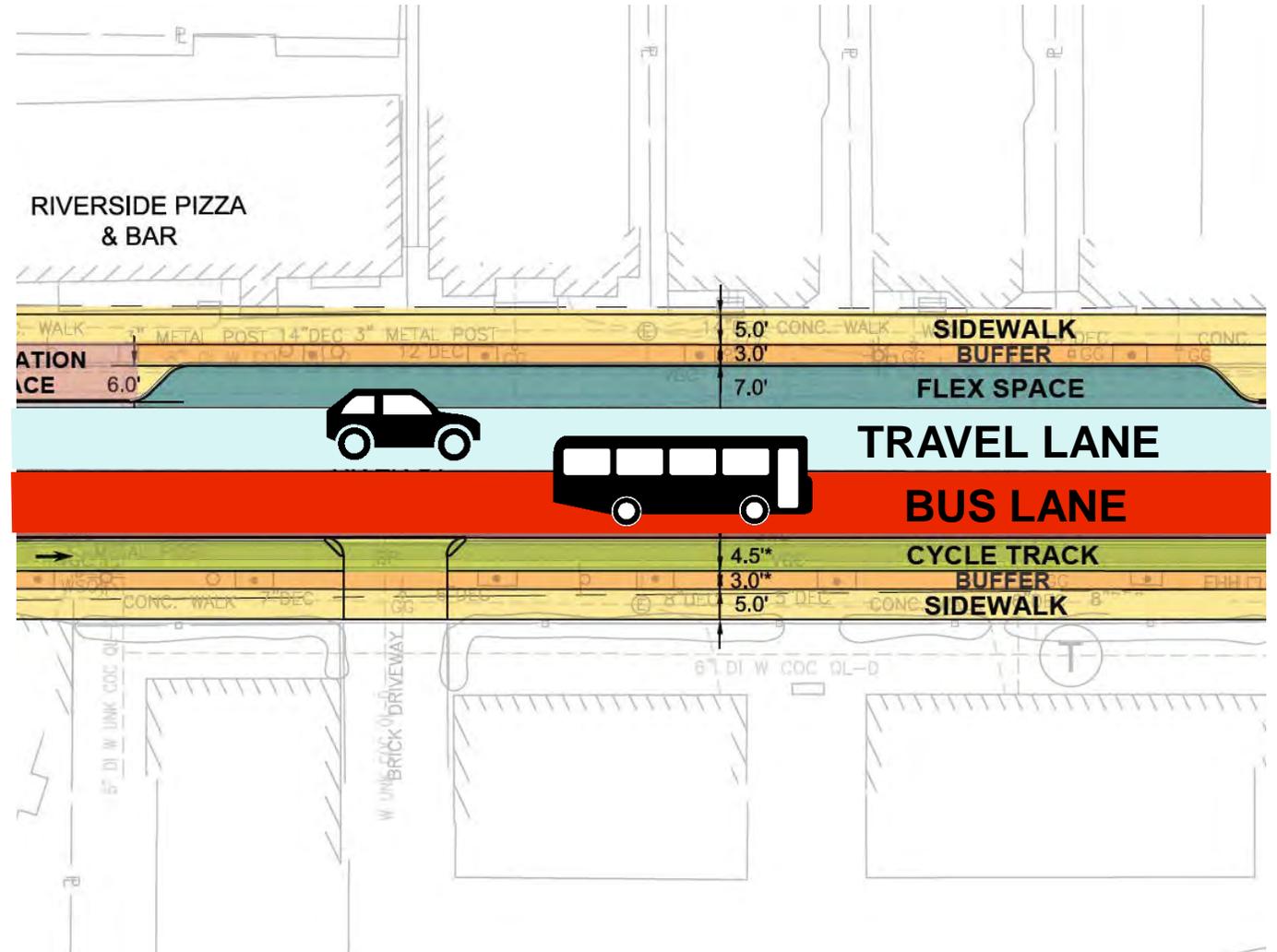
One bus stop could be removed (26 people per day, 2-3.5 min walk to next stop)

Enhanced entrance to Hoyt Field (in development)

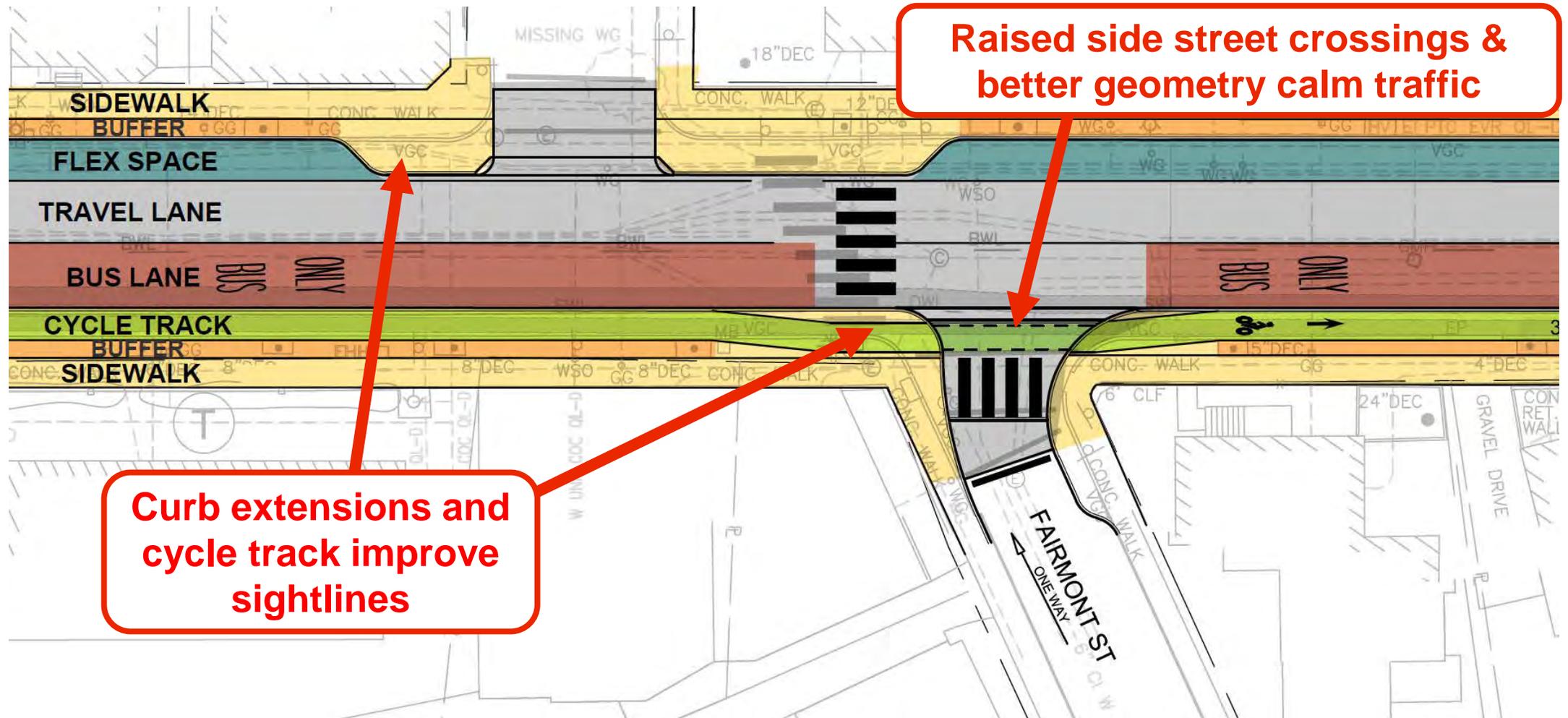
Activation zone on Kelly/Howard intersection's south side (with bus stop)

# East of Putnam Avenue to Franklin Street – No Signals

- One general use lane handles existing traffic (encouraging slower speeds)
- No queuing/spill back from Howard Street signal
- Transit lane – improves bus reliability and reduces delay
- The bus lane provides flexibility when there is construction, maintenance, trash operations, etc.



# East of Putnam Avenue to Franklin Street – Intersection



# Coast Café Area

Opportunity to provide flexible parking (resident and commercial?)

ACTIVATION SPACE

SIDEWALK BUFFER

FLEX SPACE

RIVER ST TRAVEL LANE

BUS LANE

CYCLE TRACK

BUFFER

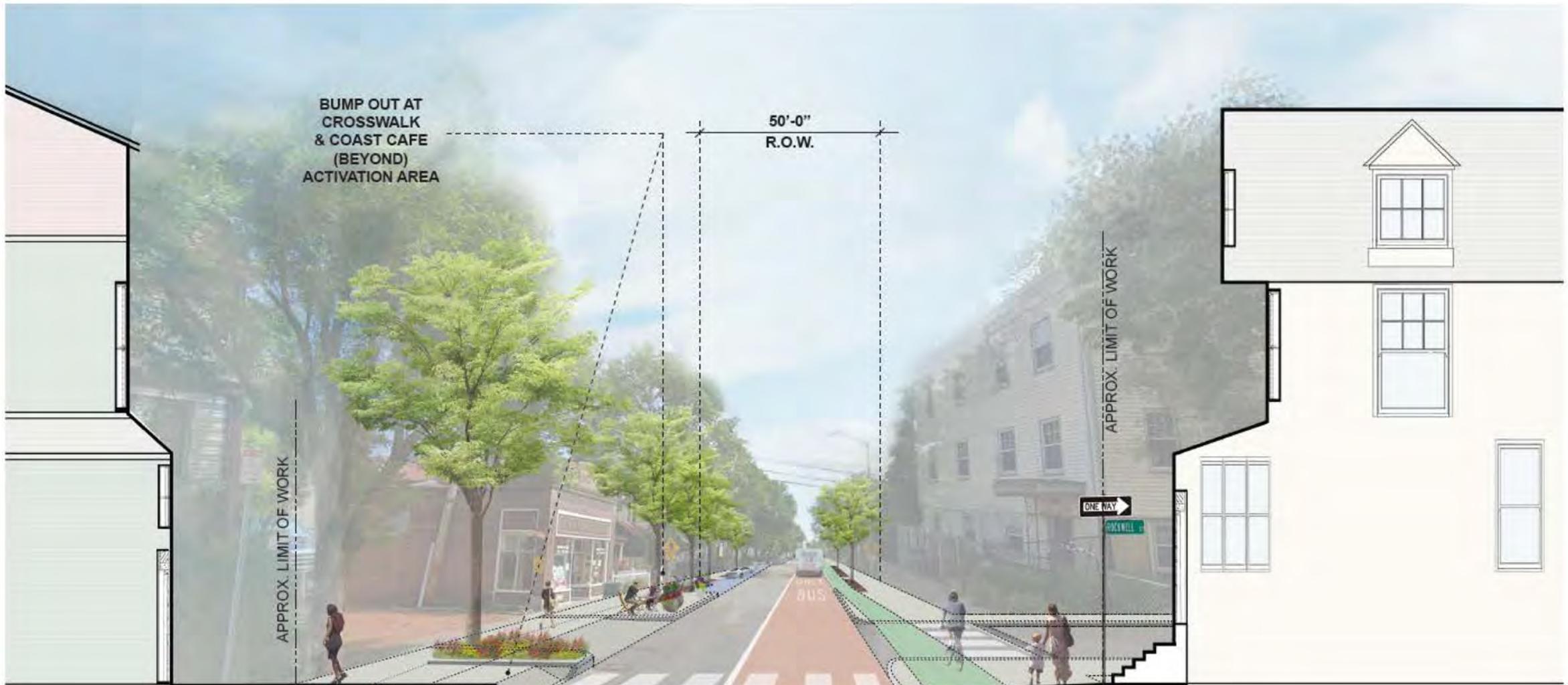
SIDEWALK

Crosswalk moved to allow for sidewalk cafe

Cycle track bends out at intersections for raised ped & bike crossings

# Coast Café Area Today





BUMP OUT AT  
CROSSWALK  
& COAST CAFE  
(BEYOND)  
ACTIVATION AREA

50'-0"  
R.O.W.

APPROX. LIMIT OF WORK

APPROX. LIMIT OF WORK

ONE WAY  
ROCKWELL ST

EXISTING GAS  
TRANSMISSION LINE

VARIES

5'-0"  
SIDEWALK

3'-0"  
BUFFER  
VARIES

7'-0"  
FLEX ZONE  
(CURB  
EXTENSIONS)  
VARIES

10'-6"  
TRAVEL LANE

11'-0"  
BUS LANE

5'-0"  
CYCLE  
TRACK

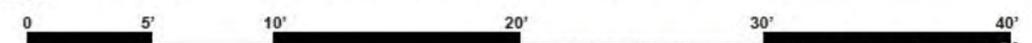
5'-6"  
SIDEWALK

(\* SIDEWALK IS 5'-0" IN MOST LOCATIONS)

- SIDEWALK
- TRAVEL LANE
- BIKE LANE
- BUFFER
- BUS LANE
- FLEX ZONE

6" CURB

2'-0" BUFFER (@ INTERSECTION ONLY, BUFFER W/ TREE PITS IS 2'-6" TYP.)



# At Howard Street/Kelly Road

Existing signal not warranted based on traffic volumes, but signal serves other uses:

- Provides signalized pedestrian crossing on the Amigos School's designated Safe Route to School
- Stops traffic for Fire Department
- Could help mitigate other implications of the design: traffic volumes could increase with one of two Tubman options



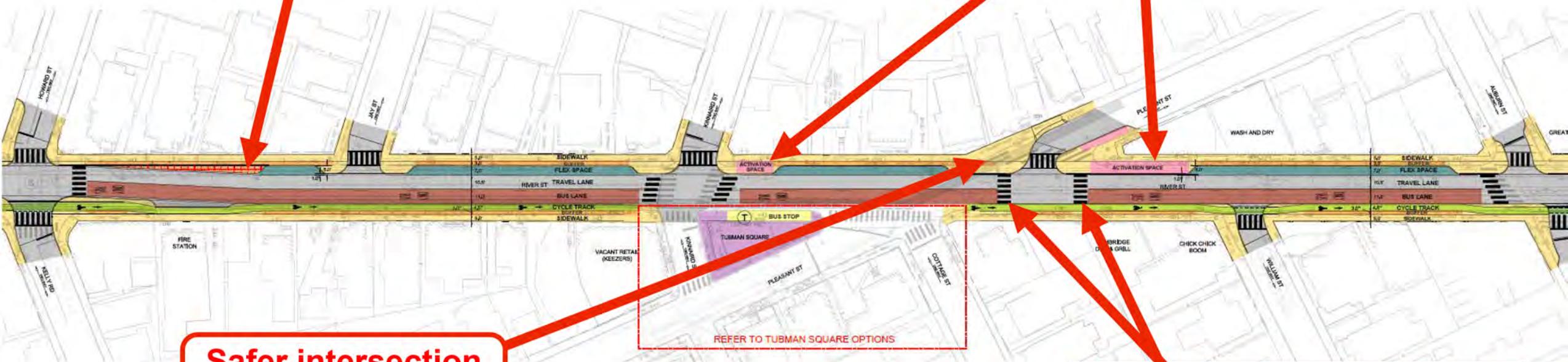
# Kelly/Howard to Auburn Street

Mountable area for fire truck movements

Activation zones supporting local businesses

Safer intersection geometry

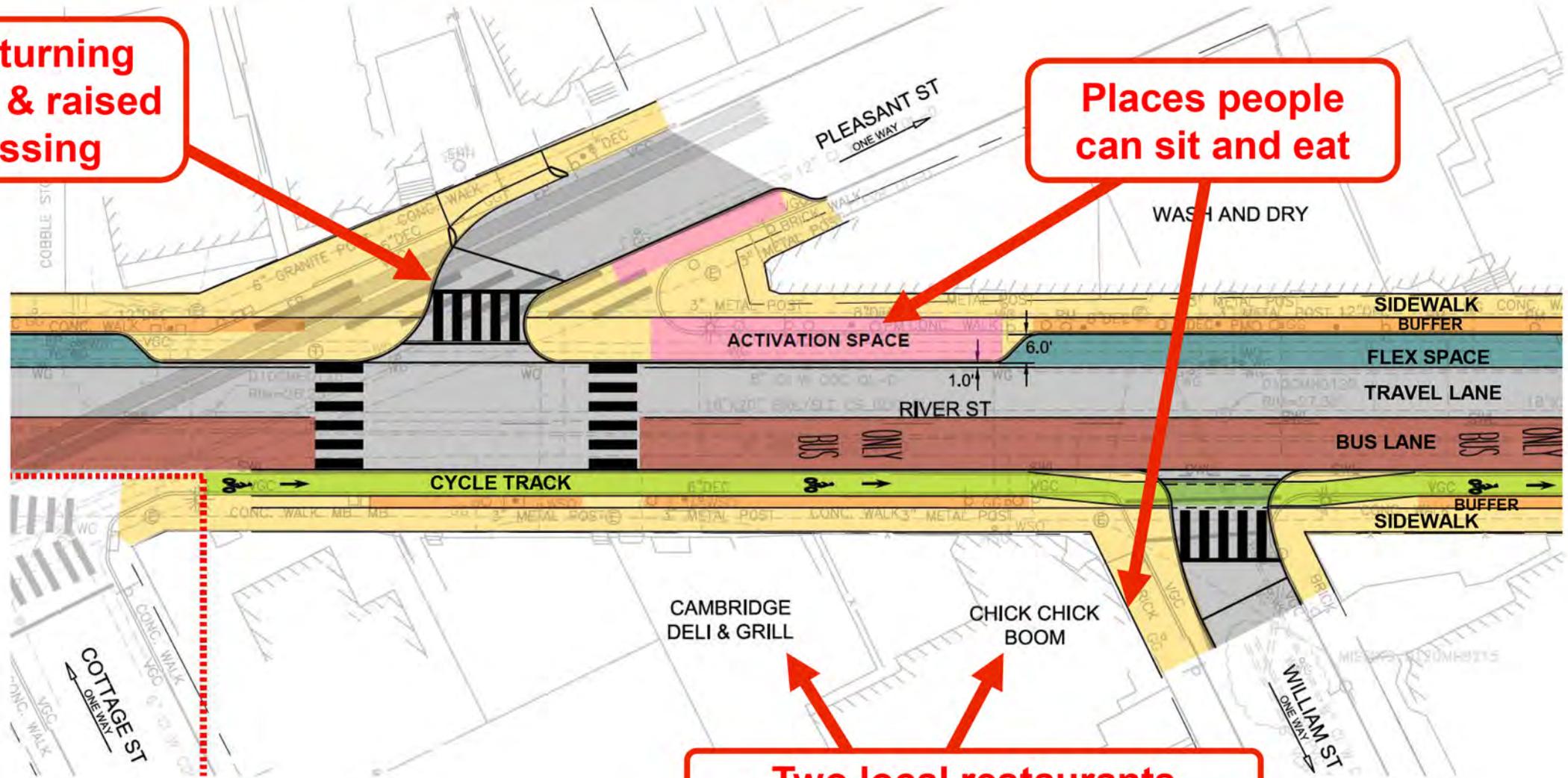
New pedestrian crossings



# “Flatiron” building area

Safe turning radius & raised crossing

Places people can sit and eat



Two local restaurants

# “Flatiron” Building Area Today





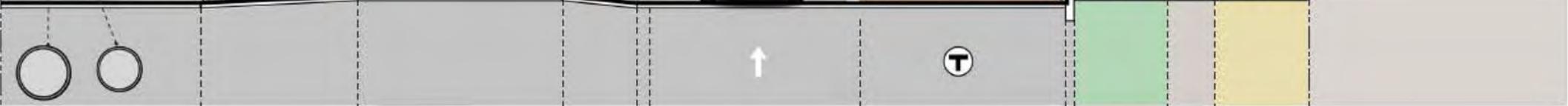
/ 5'-0" SIDEWALK / 9'-0" BUFFER / ACTIVATION ZONE / 6" CURB /

50'-0"  
R.O.W.

APPROX. LIMIT OF WORK

APPROX. LIMIT OF WORK

EXISTING GAS  
TRANSMISSION LINE



VARIES  
PLEASANT ST.  
R.O.W.

RAMP

11'-0"  
RAISED  
CROSSWALK  
& ACTIVATION  
@ FLATIRON

RAMP  
1'-0"  
FOG LINE

10'-6"  
TRAVEL LANE

11'-0"  
BUS LANE

5'-0"  
CYCLE  
TRACK  
6"  
CURB

2'-6"  
BUFFER  
VARIES

5'-0"  
SIDEWALK

VARIES

- 
 SIDEWALK
  TRAVEL LANE
  BIKE LANE
- 
 BUFFER
  BUS LANE



# At Pleasant Street/Tubman Square

- Pleasant Street as shared street/local access only
- No traffic diversions
- Parking impacts
  - 7 unregulated
  - 1 accessible



Street closure



Raised side street crossing



# At Pleasant Street/Tubman Square

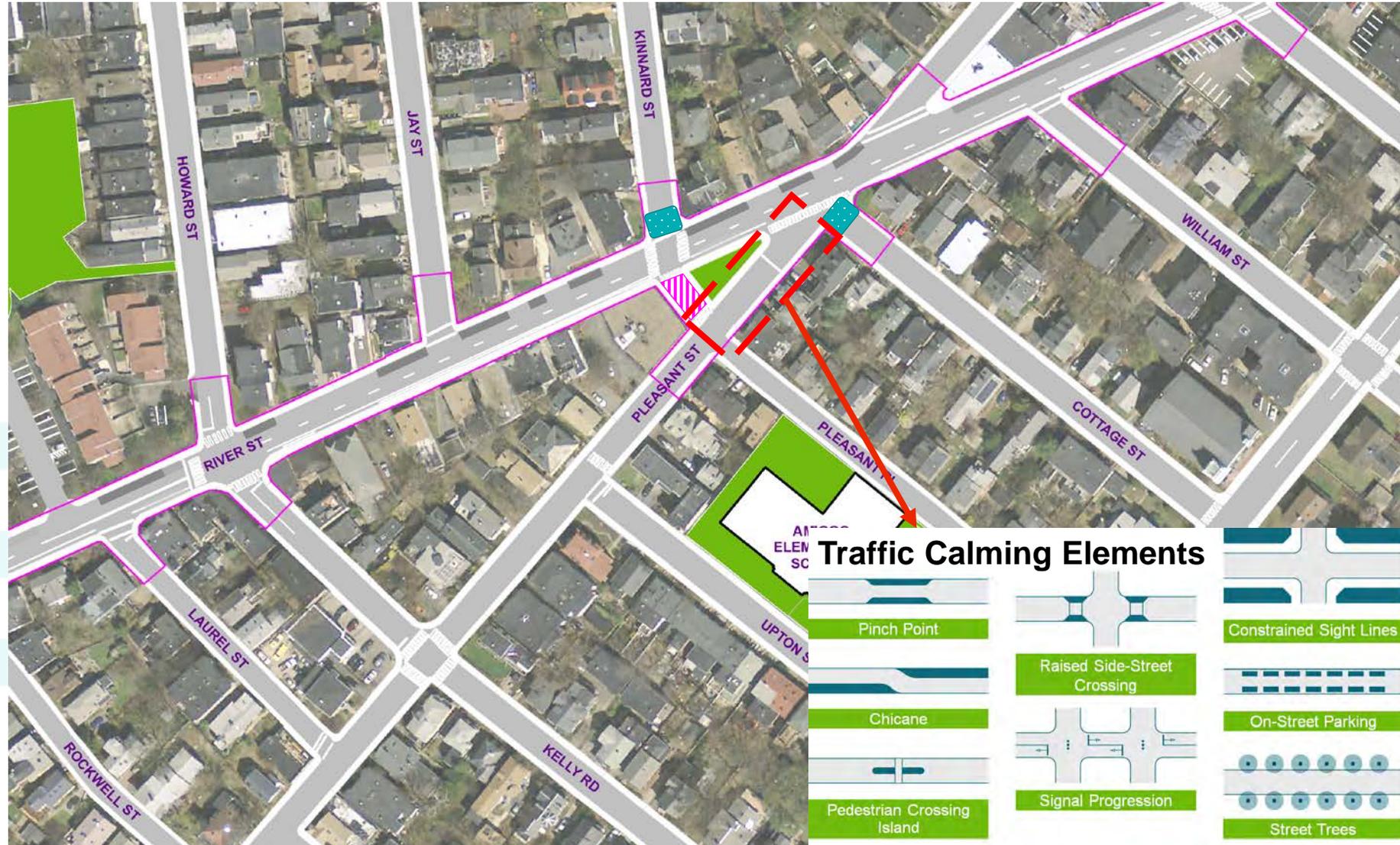
- Close Kinnaird Street
- Traffic calming on Pleasant Street
- Traffic diverted through Howard/Kelly street intersection
- Parking impacts
  - 2 unregulated



Street closure



Raised side street crossing





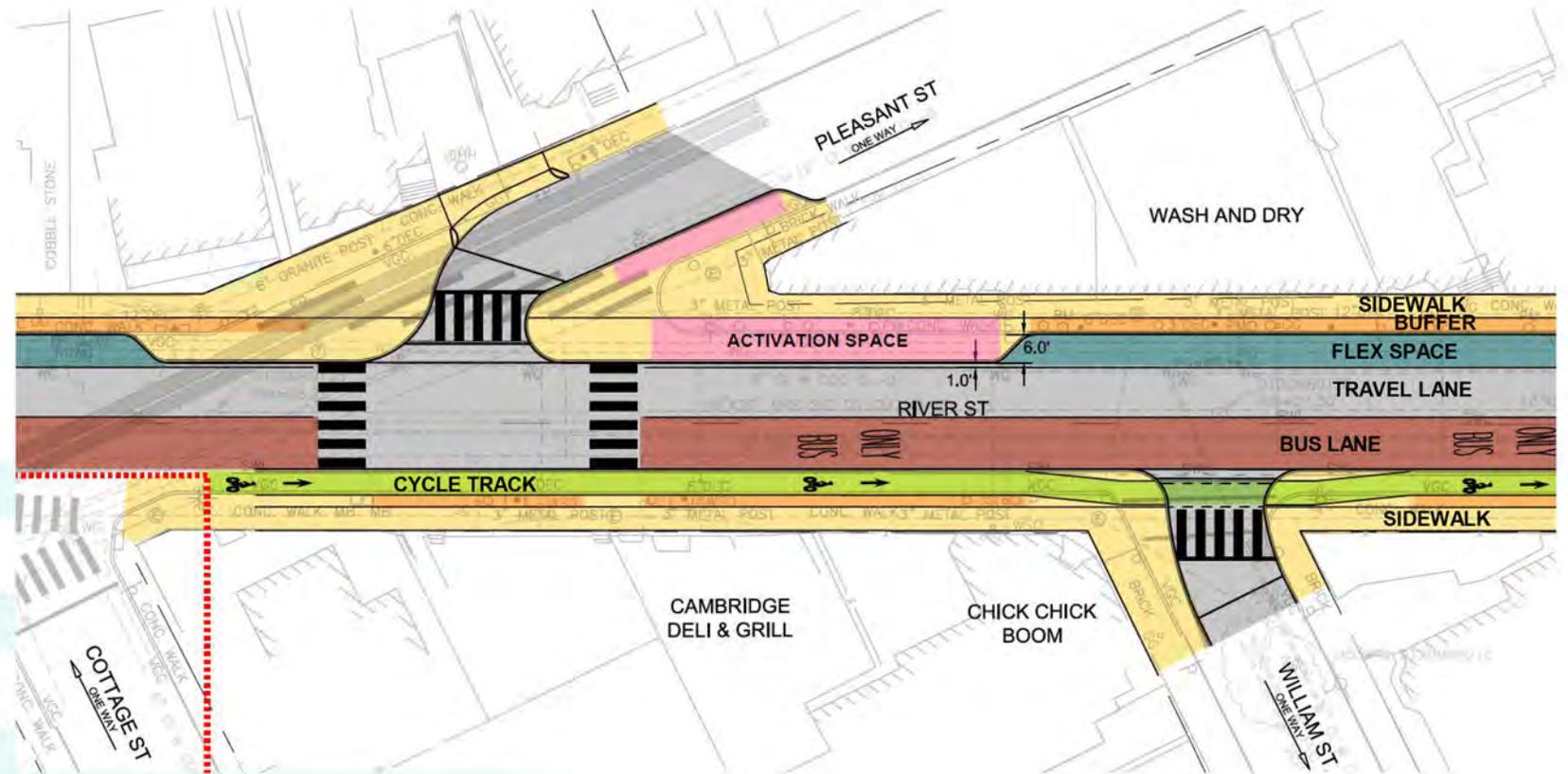


# Summary of Pedestrian Safety and Comfort Features

- Raises all side-street crossings
- Narrows turning radii on most intersections to slow down turns
- Improves visibility at intersections
- Increases vertical elements (trees)
- Moves general traffic in a single lane
- Adds two new crosswalks
- Provides an increased buffer between traffic and people walking and biking (except buses and right-hand turns)
- Simplifies ADA compliant crossings
- Provides more space for people to sit, providing a more neighborhood feeling

# Design Goals – How are we doing?

- Safe
- Inclusive
- Human Scale
- Ecological
- Multimodal
- Activated
- Resilient



# Options / Iterations

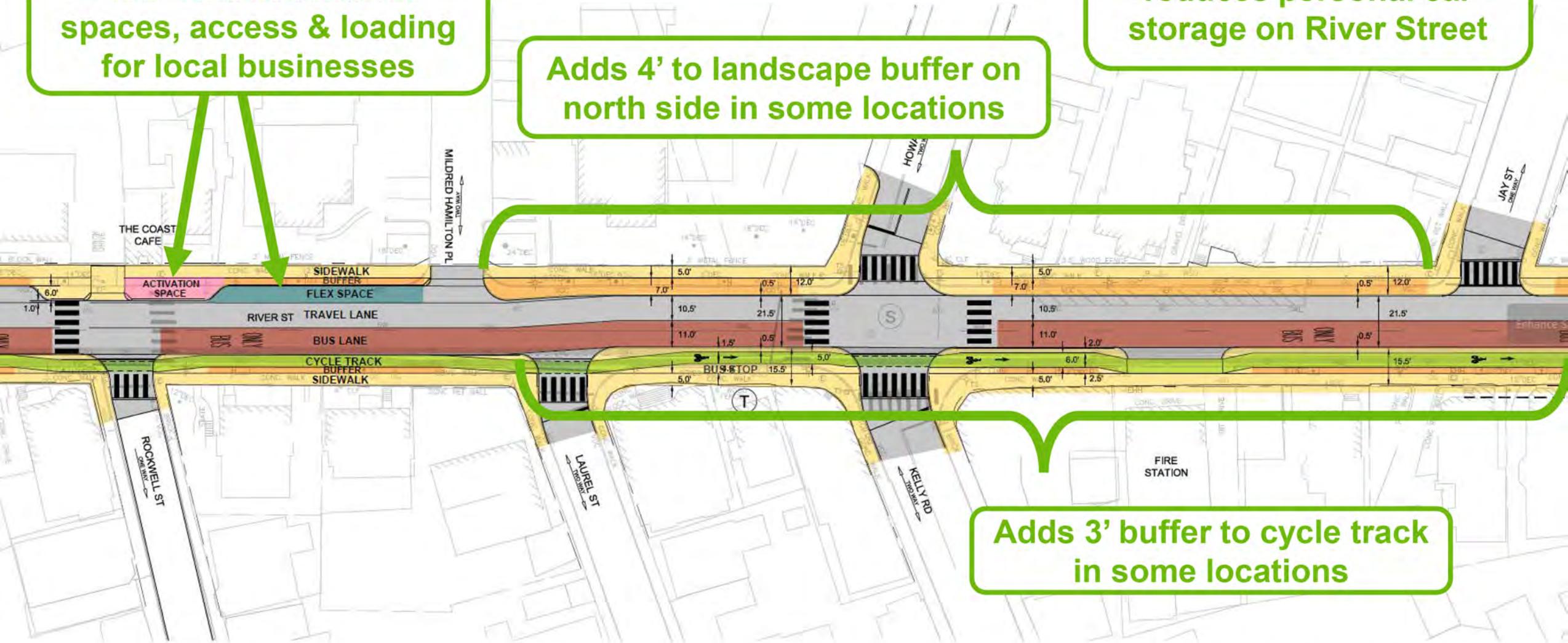
# Better Buffers?

Maintains activation spaces, access & loading for local businesses

Adds 4' to landscape buffer on north side in some locations

Eliminates or significantly reduces personal car storage on River Street

Adds 3' buffer to cycle track in some locations



# Extra-wide travel lane?

Provide one travel lane between Putnam Avenue and Auburn Street that is between 16' and 18' wide (adding between 3.5' and 5.5' to the buffers)

## Pros

- Avoids the need to have a mountable curb for the cycle track
- Allows for flexibility for emergency vehicles, trash pickup, and construction/maintenance
- Wider buffers
- More landscaping opportunities

## Cons

- Likely to encourage speeding, particularly when traffic is light (lanes would be more highway-scale)
- Technically 18' might allow vehicles to use one lane as two in certain locations (intersections, to pass people making turns, etc.)
- Buses are in the same conditions as the rest of traffic

# Detailed Comments on Draft Concept

Ask questions and use sticky notes to tell us what you **like/don't like** about the draft concept



Share additional ideas that you think are still missing

# Next Steps

# Complete and Share the Pre-Construction Survey!!

- Still live at [cambridgema.gov/riverstreet](http://cambridgema.gov/riverstreet)!
- Will become the “before” survey for the River Street Reconstruction
- When the post-construction survey is complete, the two will help the City evaluate the project
- **Please help us distribute to your neighbors!**

1. What brings you to River Street? (Check all that apply)

I live nearby

I work nearby

I go to school nearby

I shop or do errands nearby

Other (please specify)

# Next Meetings

- **Working Group #7 Meeting:** Tuesday, October 22, 6-8pm at Manning Apartments
  - Concept plans – Auburn Street to Massachusetts Avenue (including Carl Barron Plaza, MBTA bus terminal area, and Green Street)
- **Public Meeting #2:** Tuesday, November 19, TBD
  - Full Concept Design Introduction
  - Public Feedback

# Cambridgema.gov/RiverStreet



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Text Size: [A](#) [A](#) [A](#)

Enter keyword(s)

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HOUSING

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PLANNING &  
URBAN DESIGN

TRANSPORTATION

ZONING &  
DEVELOPMENT

[CDD](#) > [Projects](#) > River Street Reconstruction

## River Street Reconstruction

**Take our survey and tell us how River Street works for you today!**

The River Street Reconstruction project will upgrade the sanitary sewer, stormwater and water subsurface infrastructure while developing a new surface design for River Street, the bus terminal area at River and Magazine Streets near Central Square, and Carl Barron Plaza. The project aims to create a streetscape design that meets the needs of all the various users and in a way that engages the local community, contributes to overall enhancement of the neighborhood, and meets the City's goals related to infrastructure, transportation, and urban design.

The concurrent design of Carl Barron Plaza, the significant open space at the heart of Central Square will include consideration of public art, fixed and/or unfixed furniture, access, plantings, and landscaping. The design must also consider the complexity of transportation needs related to the bus bays adjacent to the Plaza and people moving through the plaza.

The community outreach and design processes will occur throughout 2019 and into early 2020. Construction is anticipated to begin in Spring 2020.

[Click here to sign up for email updates on this project.](#)

[Click here to provide general comments and feedback.](#)

The **Public Input Map** is now closed, but you can still access it through the link to see what input was provided on issues and opportunities along River Street and in Carl Barron Plaza. Soon we will be posting a survey to understand how you use River Street today so that we can use that input in the design and also compare to a similar survey after the construction is complete.

### Quick Links

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THANK YOU!

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# “Flatiron” Building Area

