



Route 114 Safety Improvements Project Danvers/Peabody

MassDOT in collaboration with Representative Tom Walsh's Office, Representative Sally Kerans' Office, and Senator Lovely's Office

Danvers Select Board Meeting | October 18 | 6:30pm

Agenda

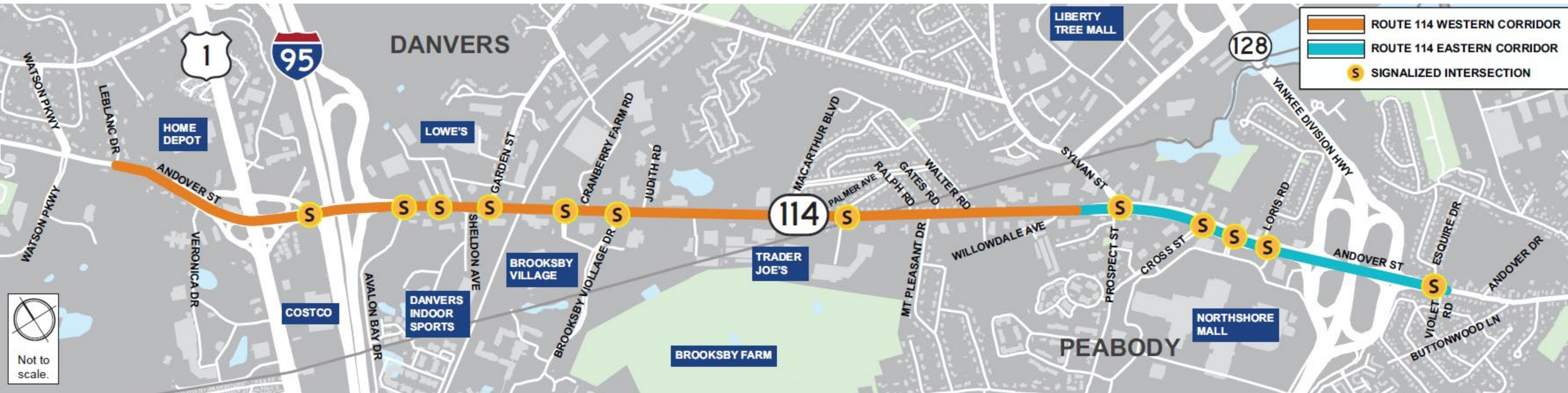
- ✓ Background
- ✓ Existing Conditions
- ✓ Design Development
- ✓ Next Steps





Project Background

Background: Project Location



- 12 signalized intersections included in analysis
- Two separate Road Safety Audits were conducted along the corridor, so it will be referred to as the “Western Corridor” and “Eastern Corridor”
- The Danvers portion of the project exists within the Western Corridor
 - Limits of the RSA extend from Leblanc Drive just past the Home Depot/Route 1 to Sylvan Street in Peabody

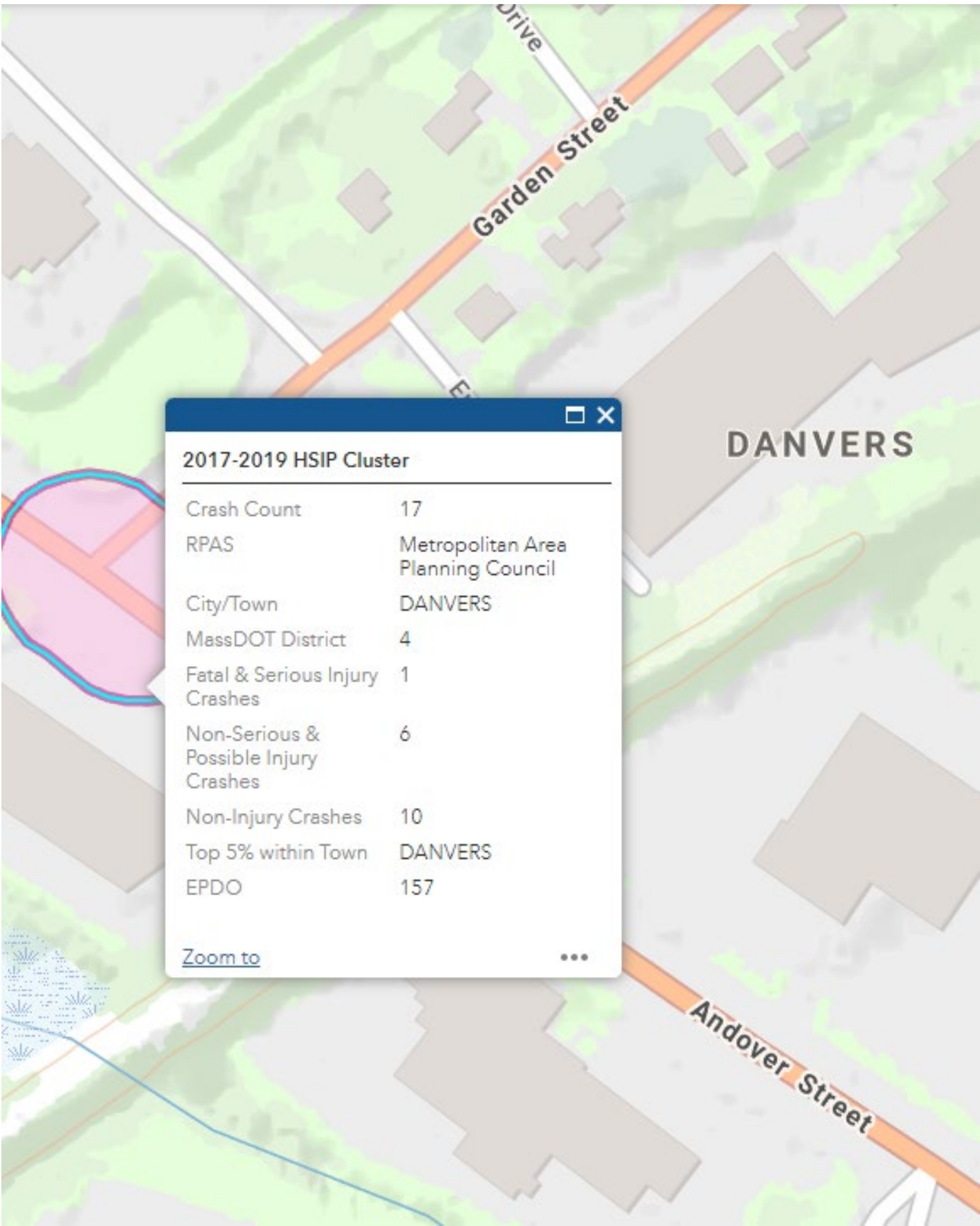
Background: Purpose & Need

Need

- Reduce Speeds and Decrease Injury Crashes
- Studied **285 Crashes** on the Western Corridor (2017-2019) inclusive of fatality crashes in 2020 and 2021
 - **4 Fatalities** within Study Period
 - **35% Injury Crashes**
 - **1 pedestrian** and **1 bicyclist** crash
- Studied **195 Crashes** on the Eastern Corridor (2012-2015)
 - **33% higher than** statewide average crash rate
 - **Zero** fatalities during study period
 - Most crashes were **rear end**
 - **Zero** crashes involving pedestrian/bicyclist

Purpose

- Incrementally improve safety along the corridor in a tiered approach instead of waiting for a full long-term roadway reconstruction project

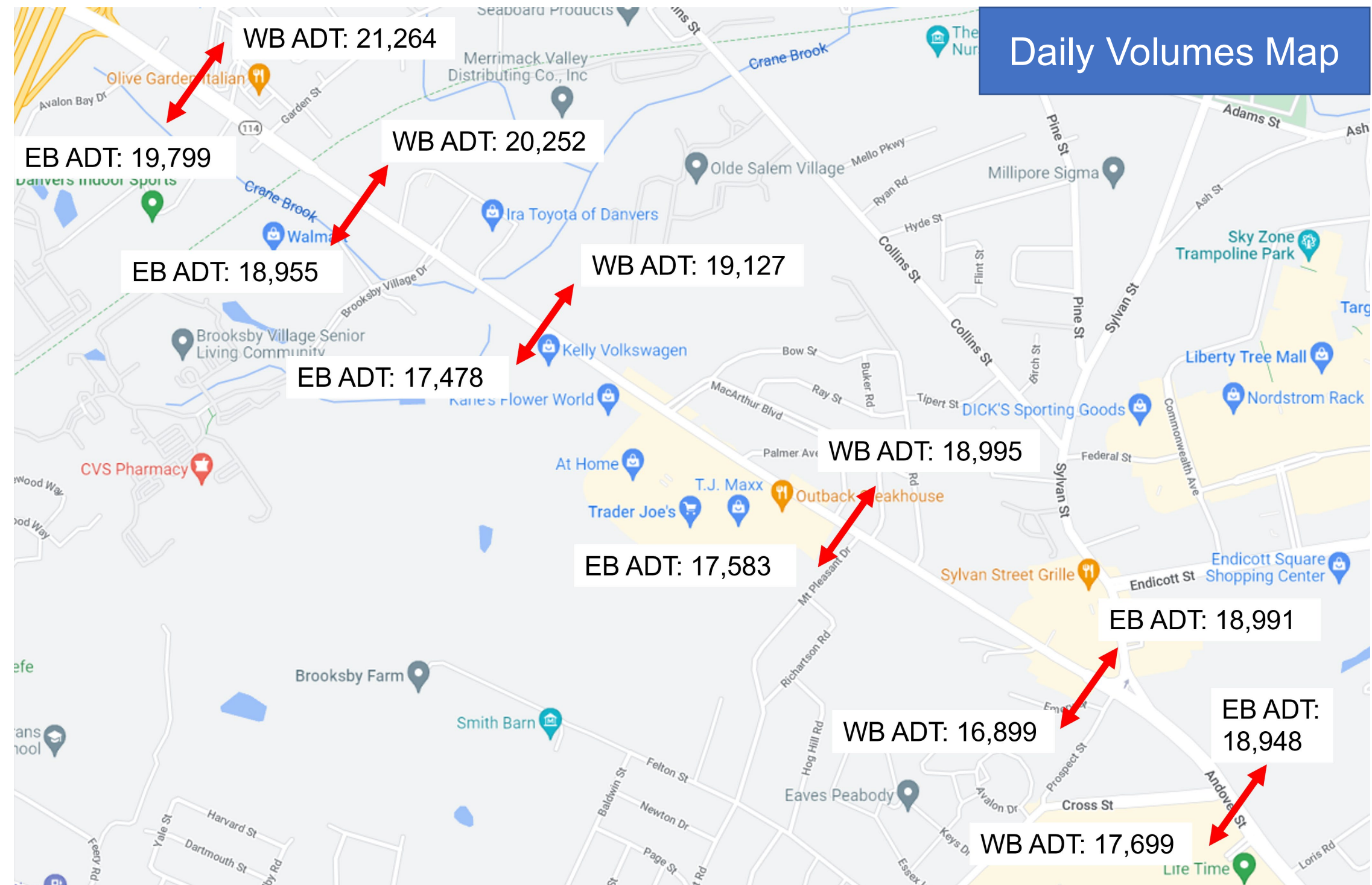




Existing Conditions

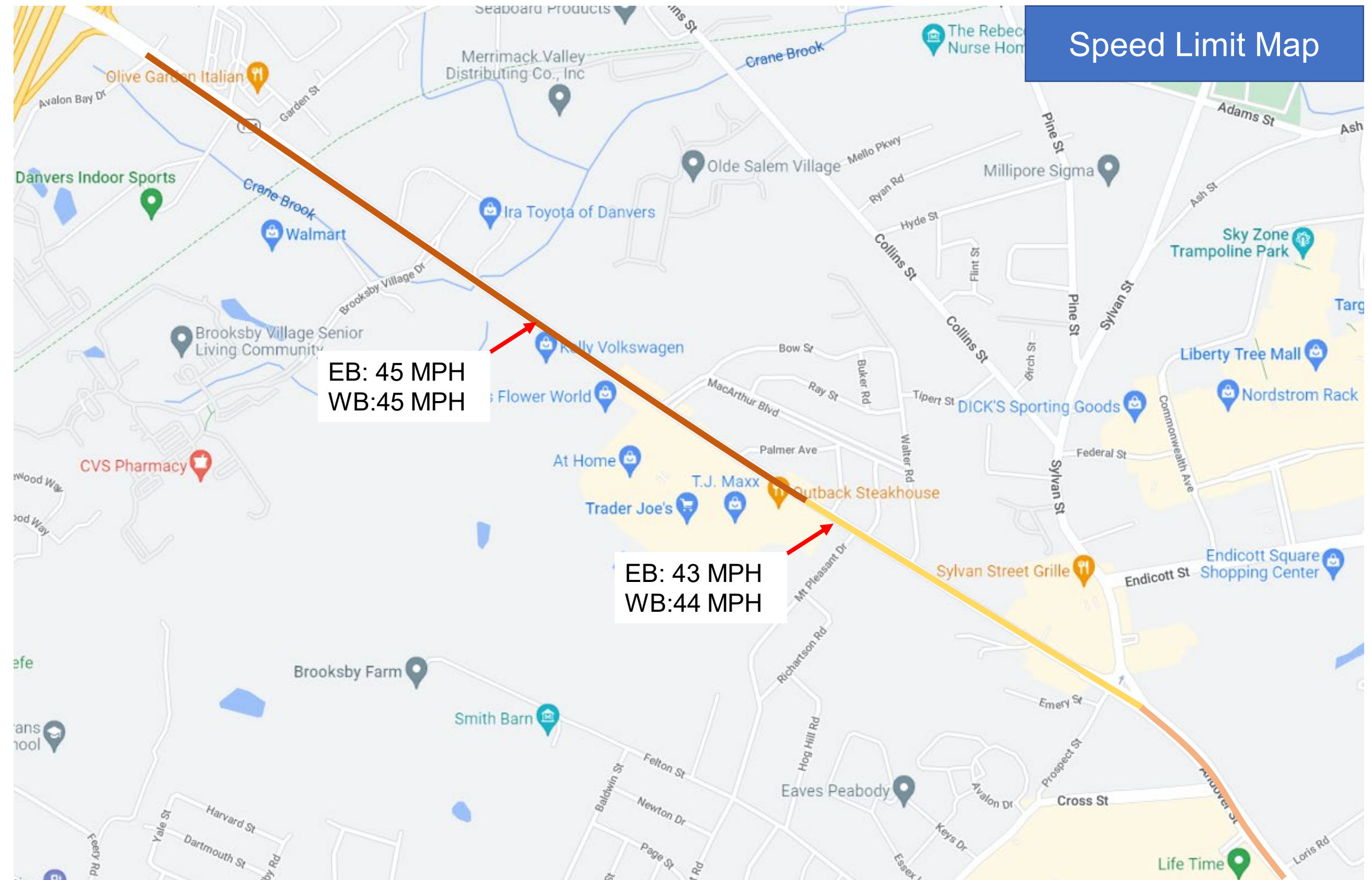
Existing Conditions: Traffic Counts

- TMCs at 17 Intersections
- ATRs measured Daily volumes from approximately **36,000 to 41,000 vpd**
- Eastern Corridor collected November 2019; Western Corridor collected 5/25/22-5/26/22

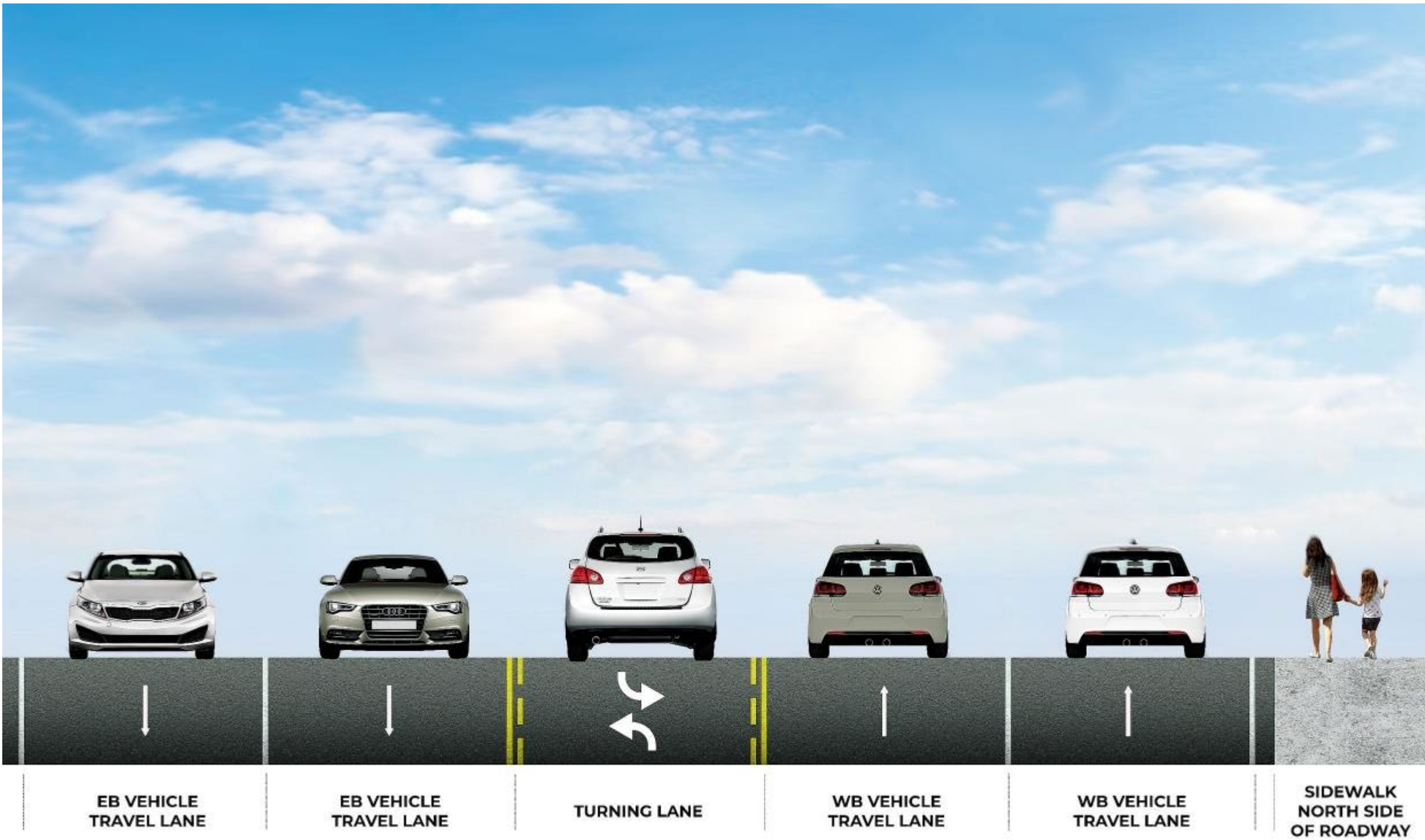


Existing Conditions: Speeds

- Speed limit on the corridor ranges from 30 to 40 mph as shown to the right
- ATR show speeds ranging from 36 to 45 mph
 - 44 mph speeds were measured in the stretch between Palmer Ave and Sylvan



Existing Conditions: Cross Section





Design Development

Design Development: Process



Design Development: RSA

TIME FRAME		COSTS	
Short-Term	<1 Year	Low	<\$10,000
Mid-Term	1-3 Years	Medium	\$10,001-\$50,000
Long-Term	>3 Years	High	>\$50,000

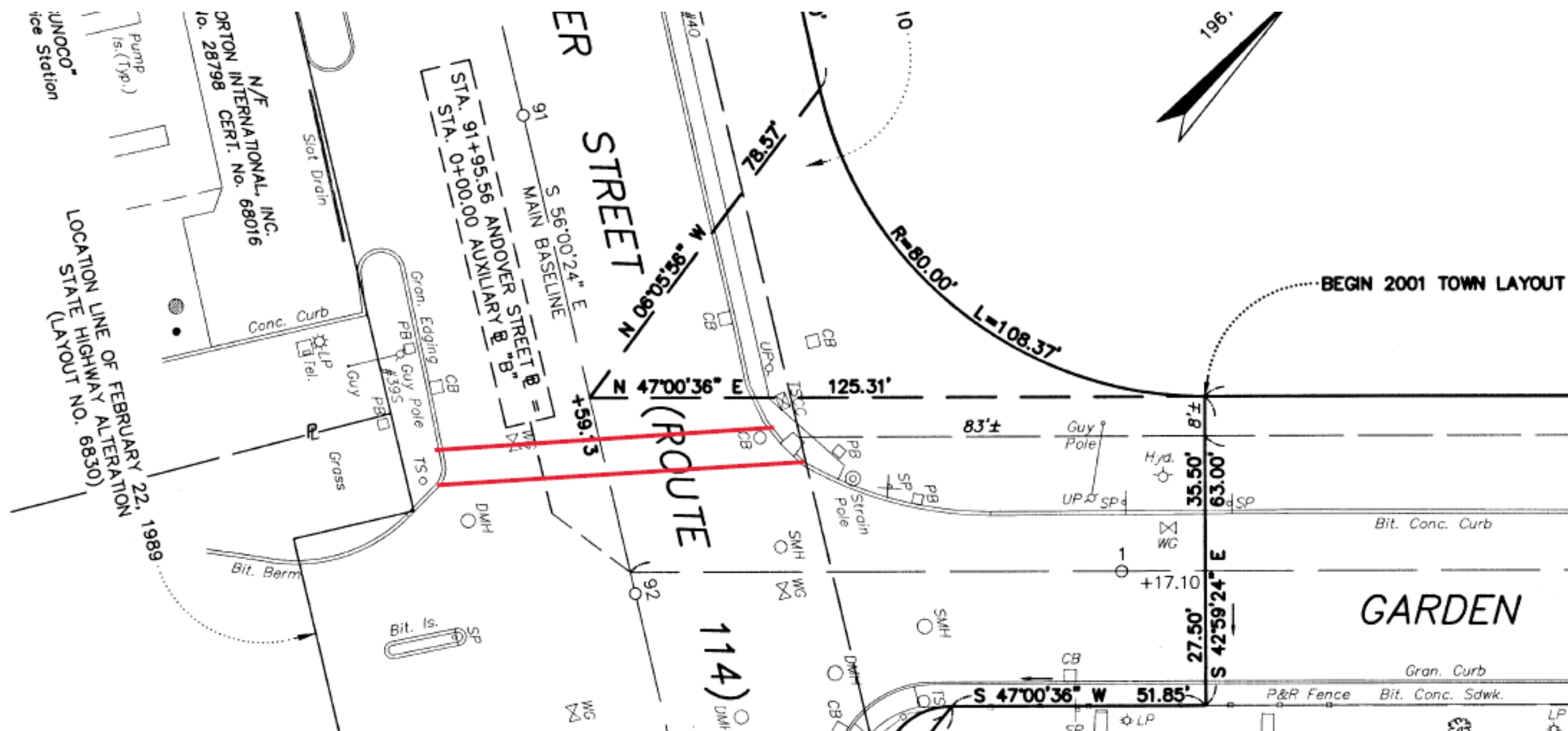


ROUTE 114 PLANNED SAFETY ENHANCEMENTS		
	Short-Term	Mid-Term
Cross Section/ Pavement Markings:	- Re-stripe shoulder - Eliminate third travel lanes - Remove Two Way Left Turn Lane where unneeded/unsafe - Add dotted extension lines and advanced lane assignment markings at intersections	- New pavement markings will be installed for the length of the corridor where resurfacing is to occur. - Reduce lane widths and introduce wider shoulders into the roadway
Signage:	- Replaced faded or damaged signs - Remove unneeded signage - Add signage where new design requires - Confirm existing and proposed signage is MUTCD compliant	- Advanced lane control signs and any custom signage.
Access Management:	- Stripe center median with cross-hatching to enforce existing and new turn restrictions where unsafe - Stripe pocket left turn lanes in place of TWLTL	- Harden restrictions with installation of flex posts
Signals:	- Replace damaged retroreflective backplates - Convert flashing yellow left turn arrows to solid red, yellow or green arrows - Update signal timings to support intersection changes	- Add backplates to signals that do not have them. - Add crosswalks to more signalized crossings.
Pedestrian:	- Install new crosswalks across 114 at Garden Street and Palmer Avenue - Add tactile warning panels to existing curb ramps - Refresh crosswalk paint and add ladder style markings	- Install more crosswalks at signalized intersections; - consider a mid-block crosswalk with a PHB between Palmer and Sylvan.

Design Development: Tier 1 Scope

Work needed to avoid the following to fit within the “Short-Term” umbrella:

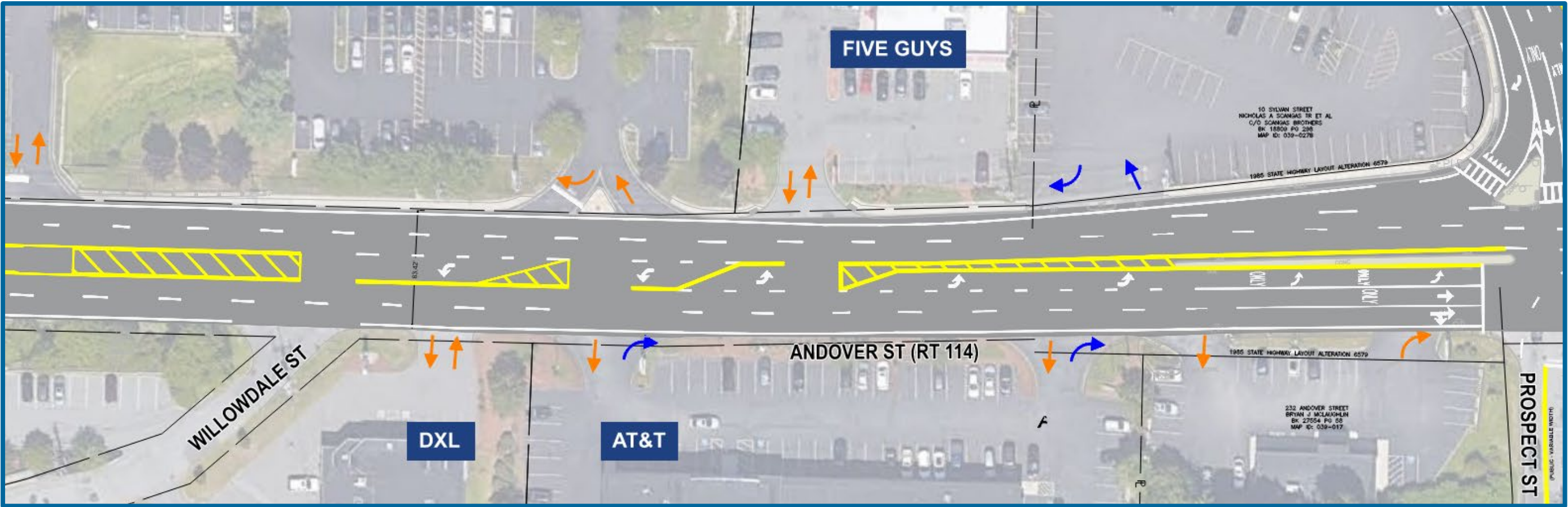
- Right-of-way (Property impacts)
- Significant changes to business access
- Utility trenching across the roadway
- Re-paving the road (temperature requirements)



Design Development: Tier 1 Scope

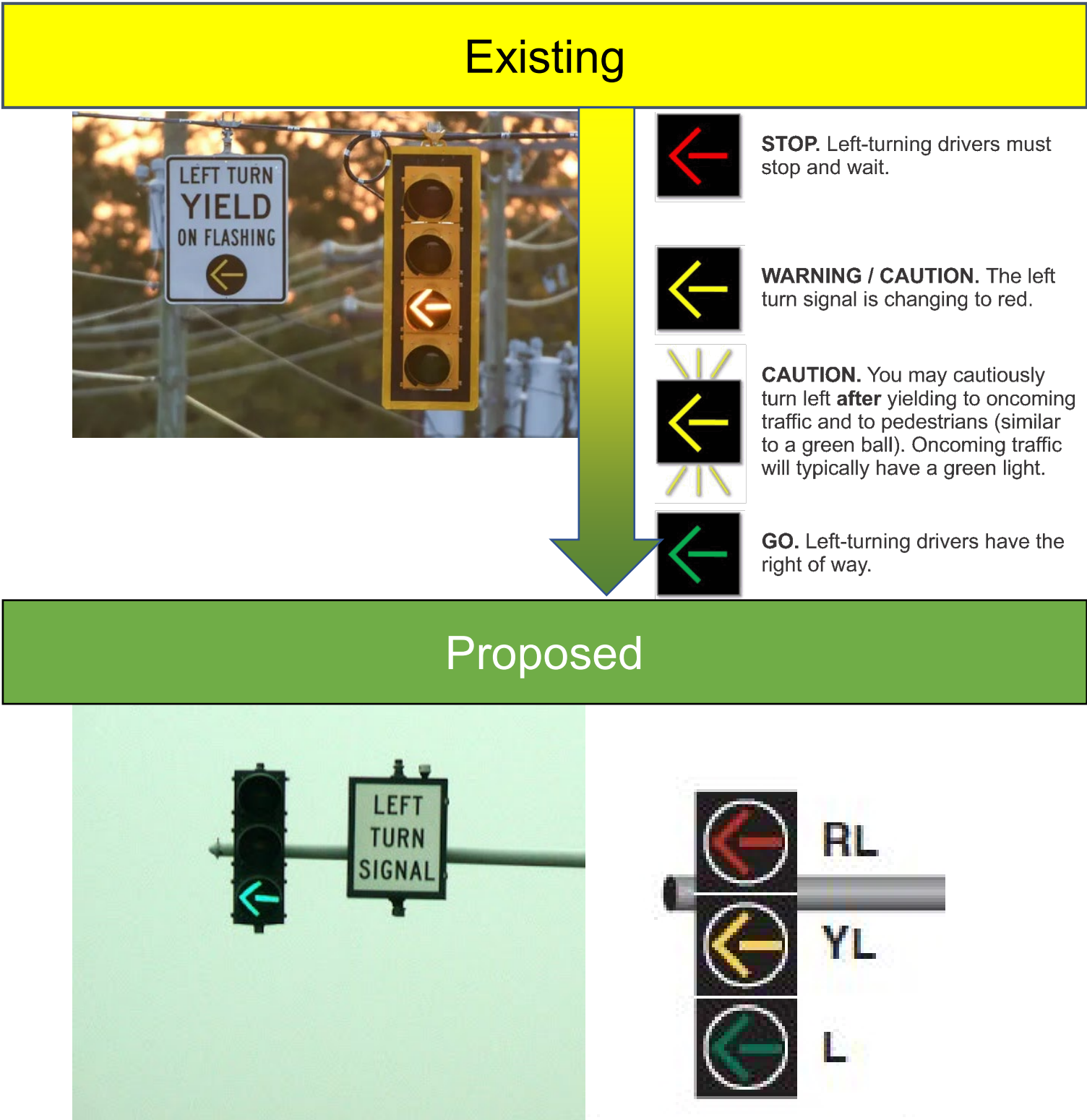
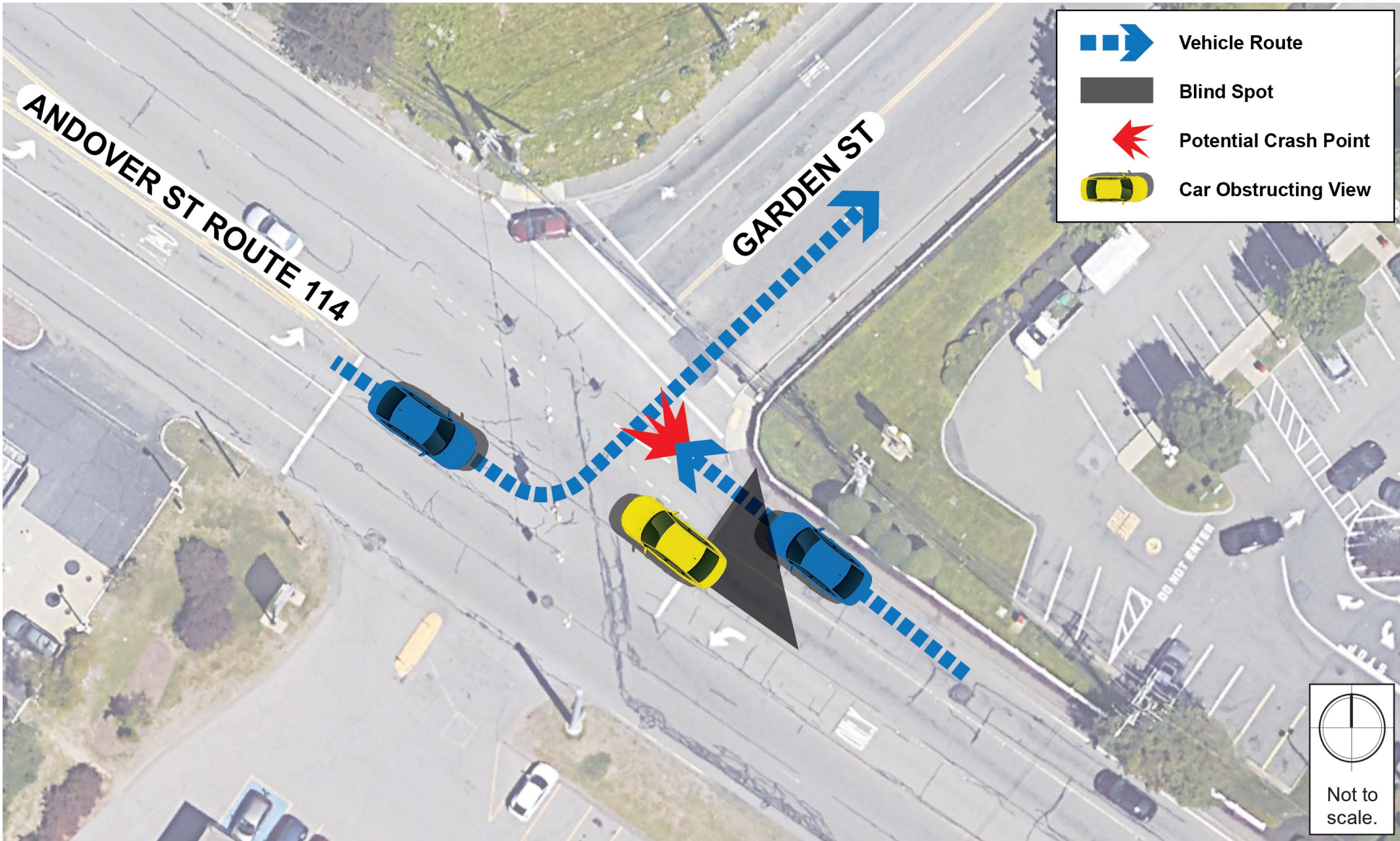
The following elements will be implemented in the Fall/Winter 2022 Improvements:

-  Signal timing updates including new protected left turns
-  Pavement marking & signage updates
-  Provide two new crosswalks across Route 114 at Garden Street and Palmer Avenue



Design Development: Protected Left Turns

Intersection	# of Angled Crashes
Route 114 at Garden Street	3
Route 114 at Walmart Driveway	0
Route 114 at Brooksby Village Drive	3
Route 114 at Cross Street	5



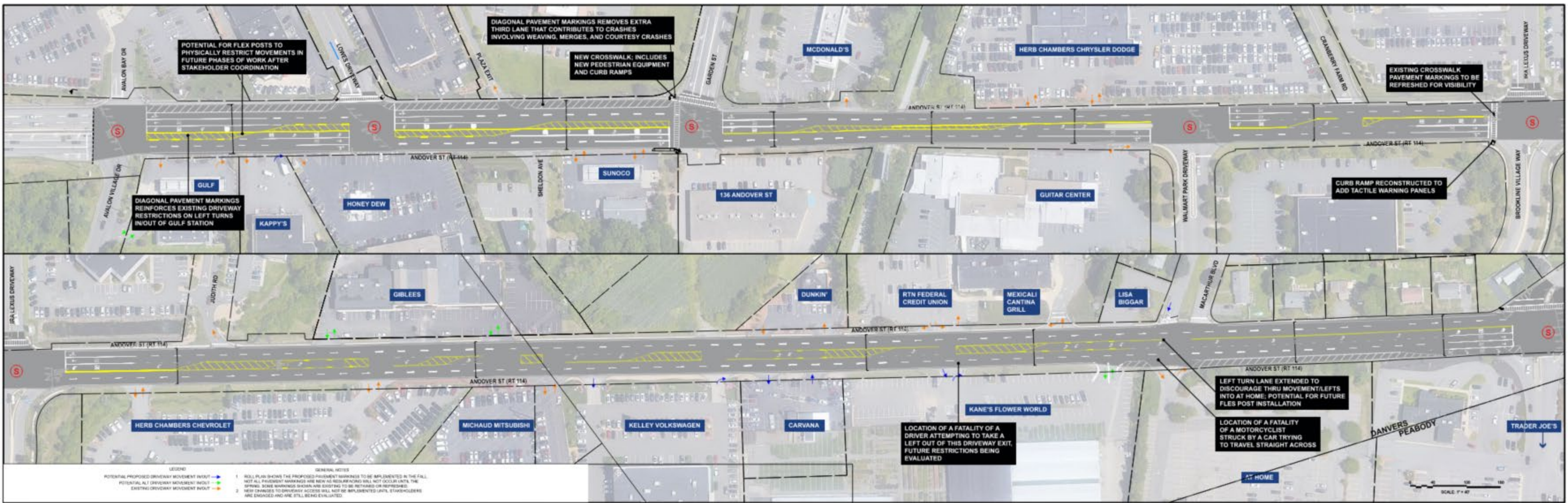
Design Development: Pavement Markings & Signage

- Pavement markings are faded or missing in some locations, especially problematic at crosswalks
- Some existing signs are damaged, faded, or missing



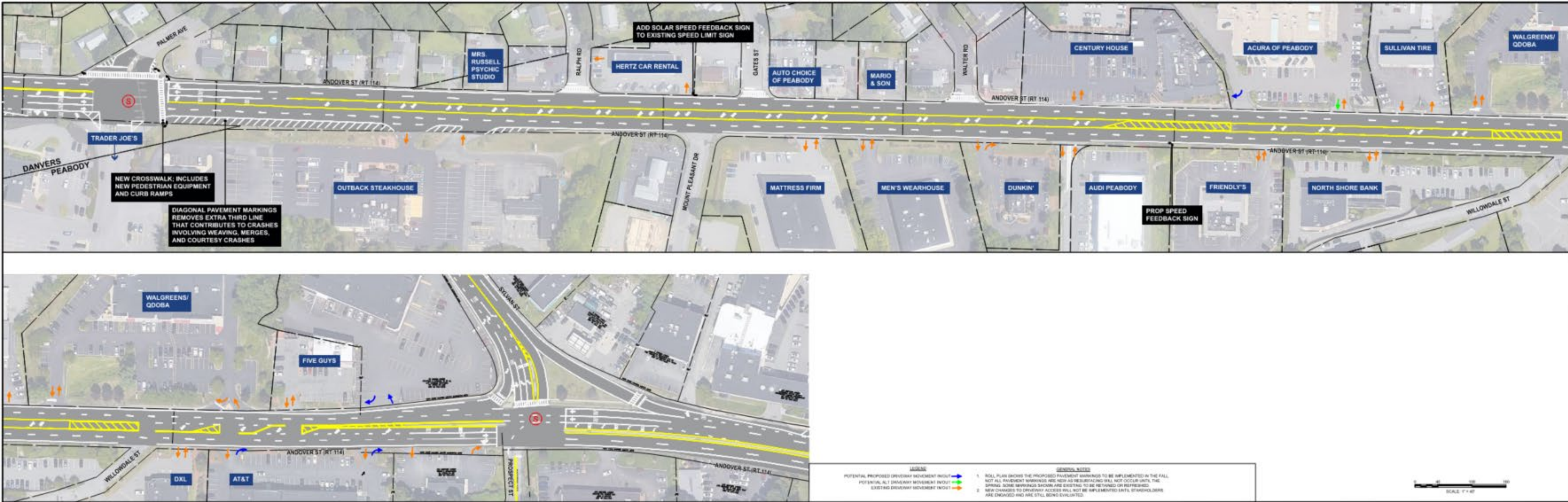
Design Development: Roll Plan

- Sheet 1 of 3



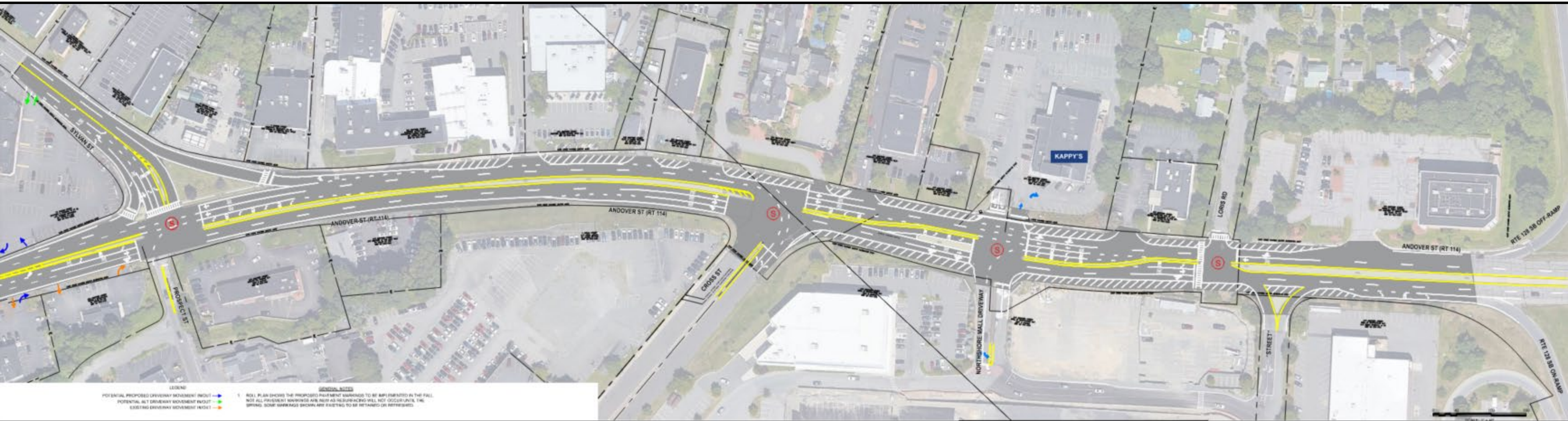
Design Development: Roll Plan

- Sheet 2 of 3

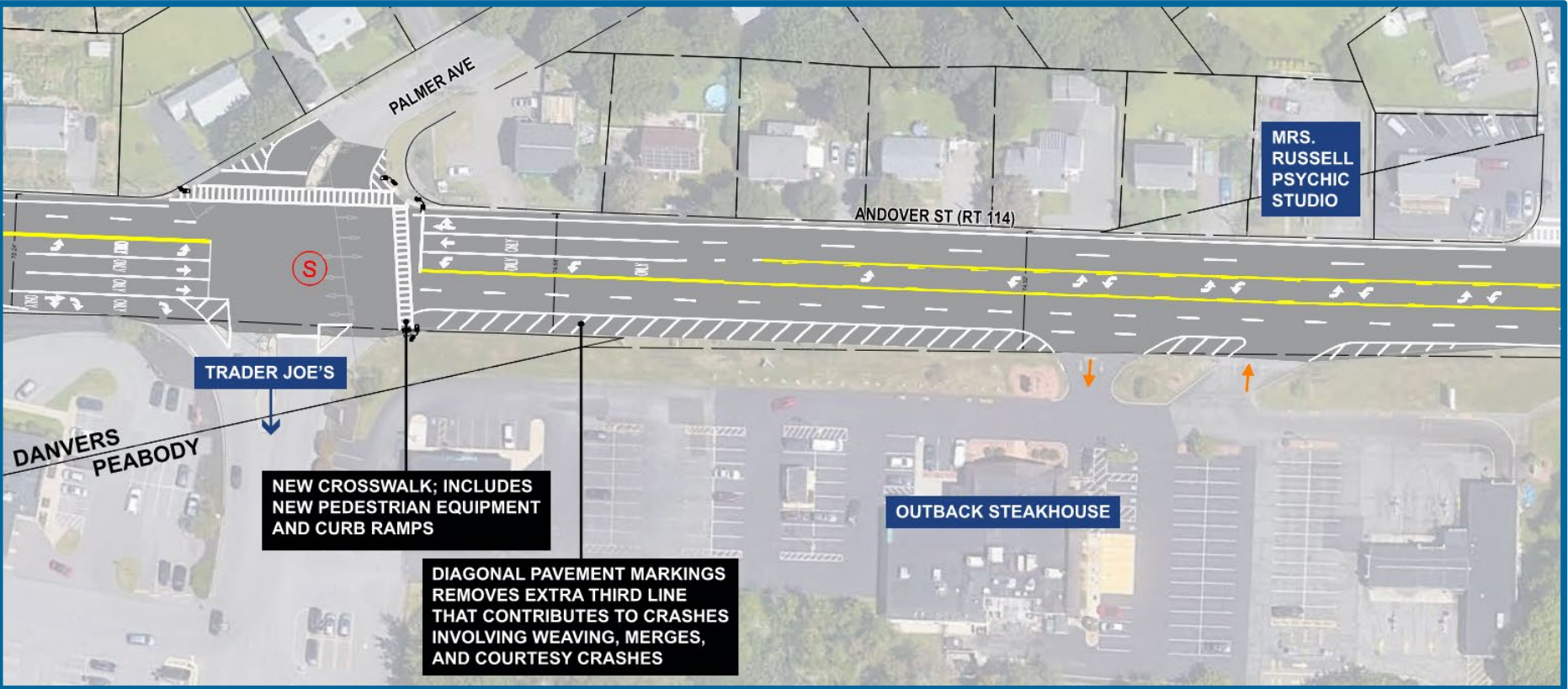
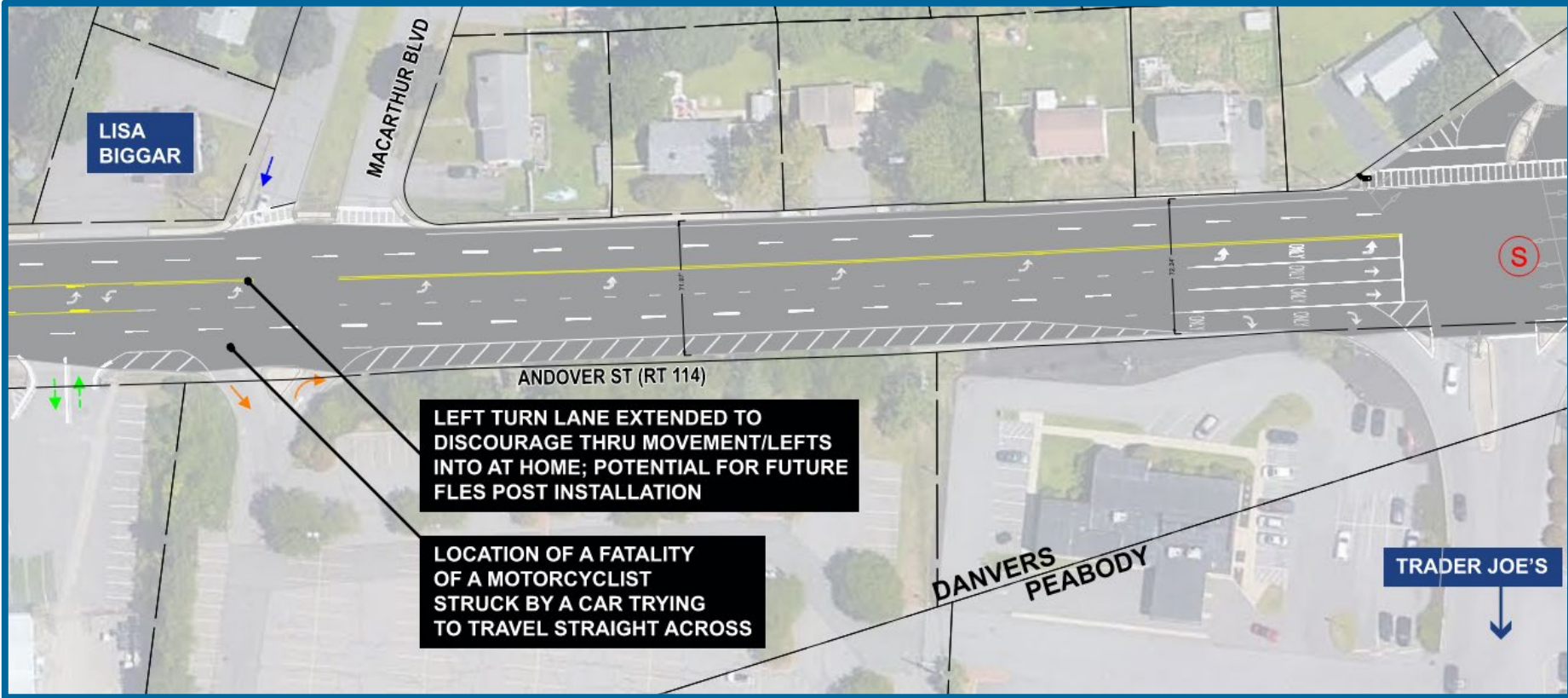
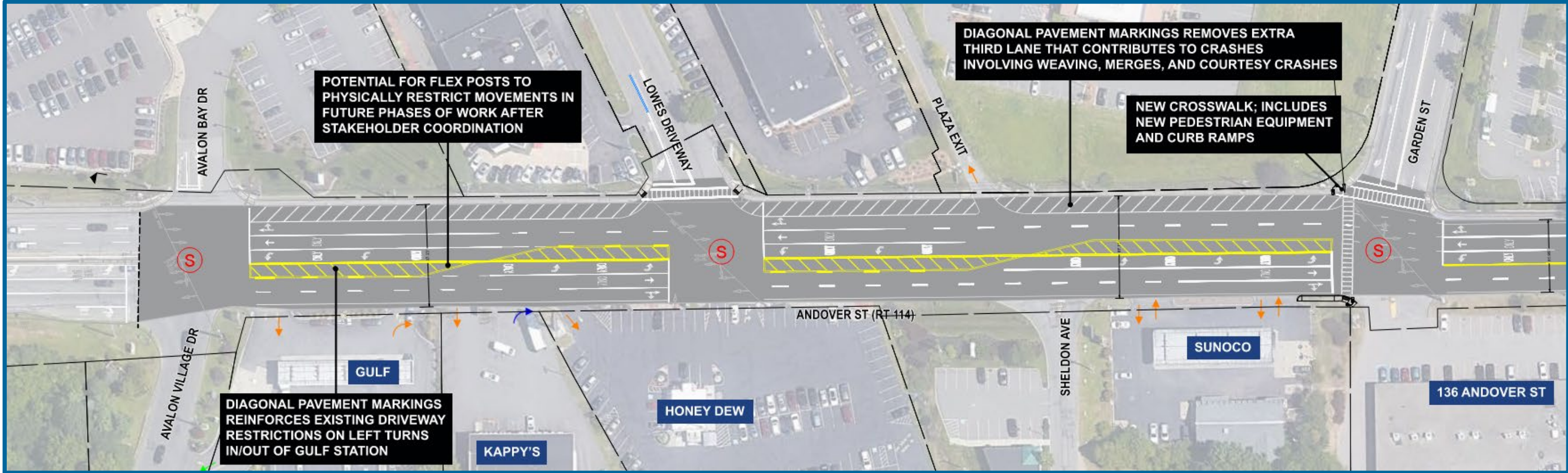


Design Development: Roll Plan

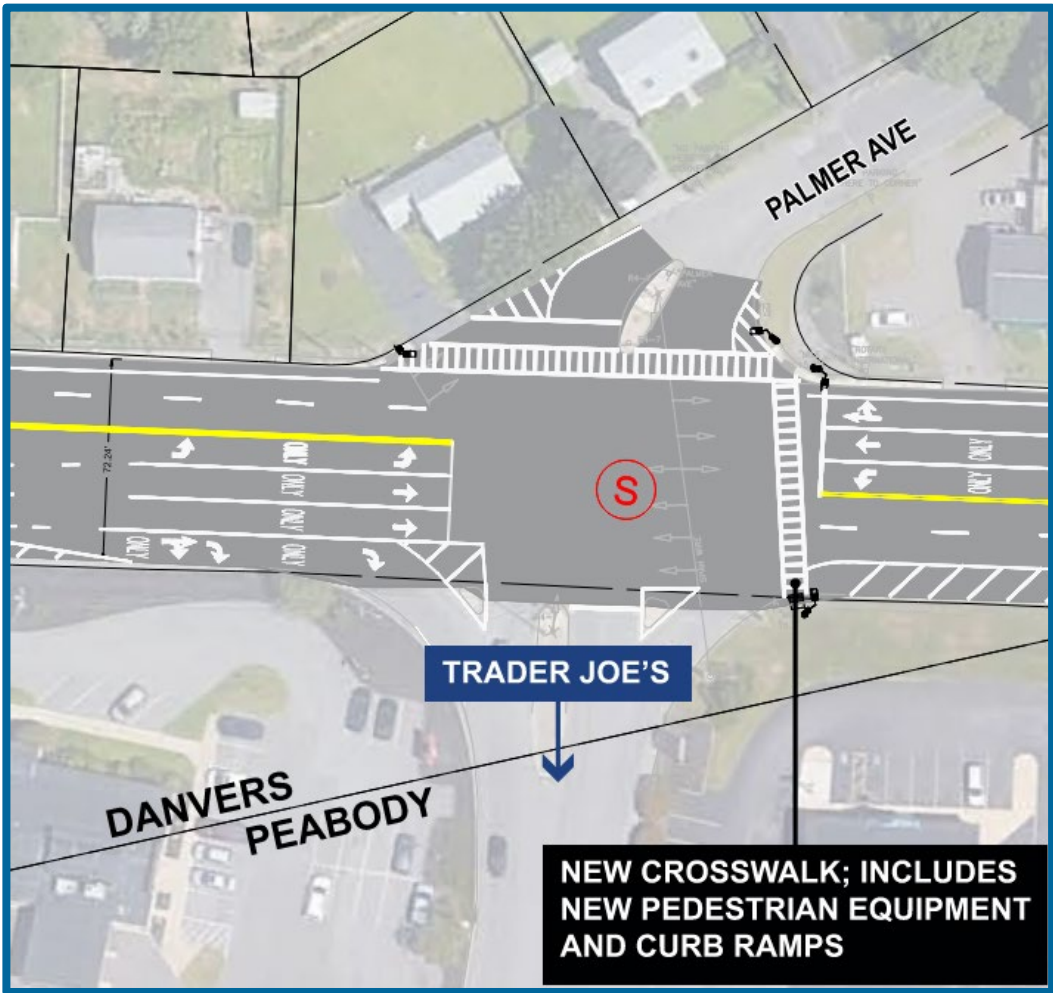
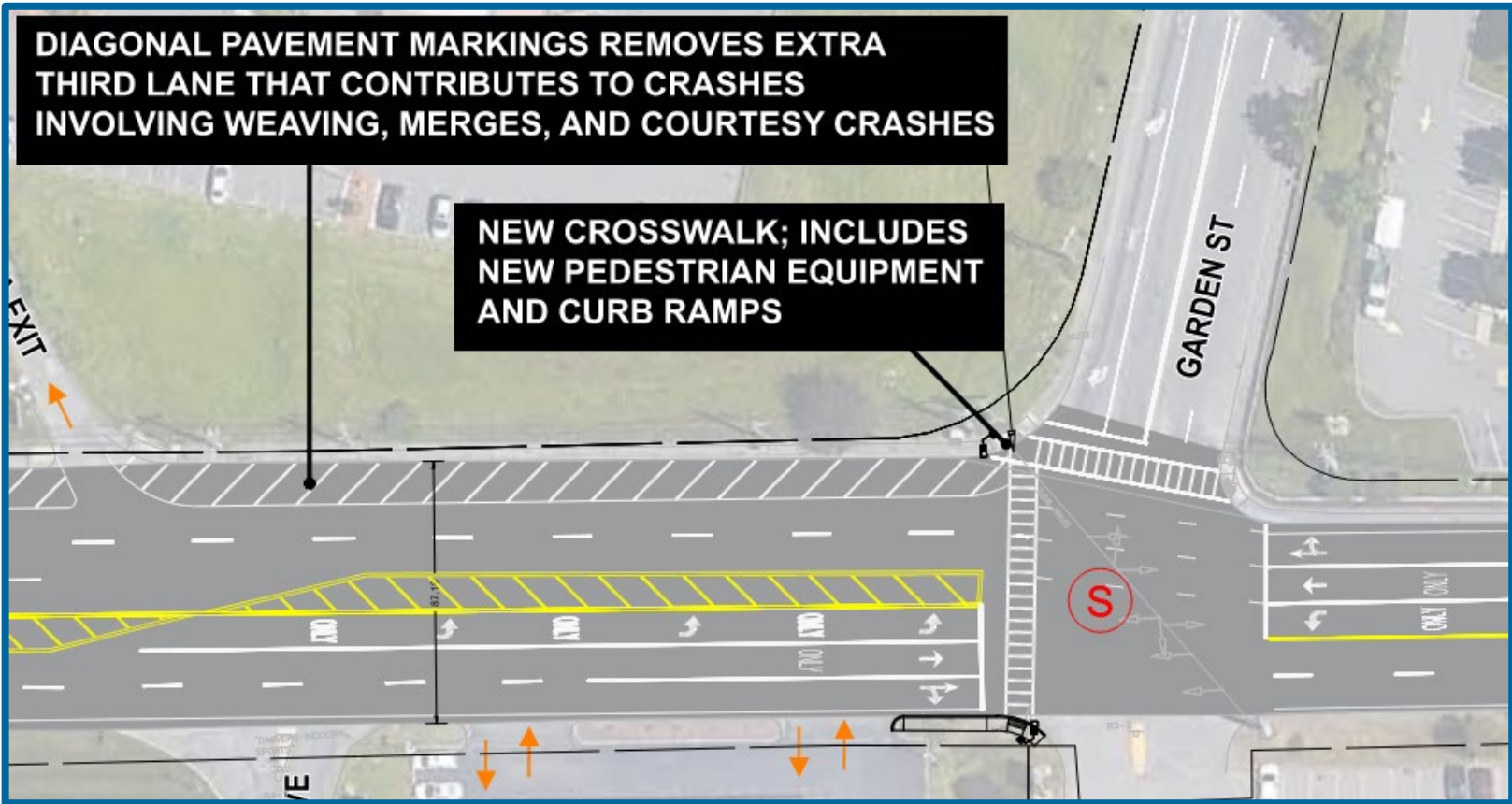
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Design Development: Remove Extra Travel Lane



Design Development: Crosswalks



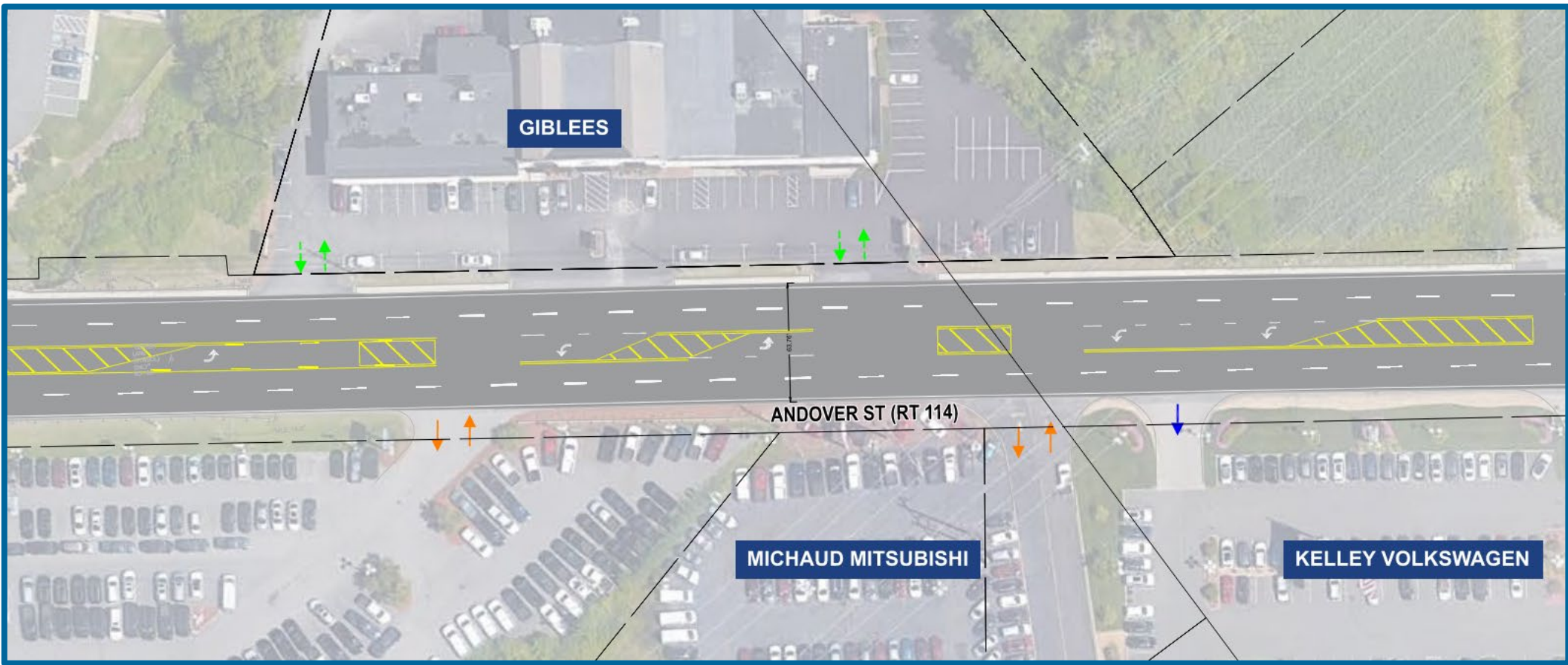
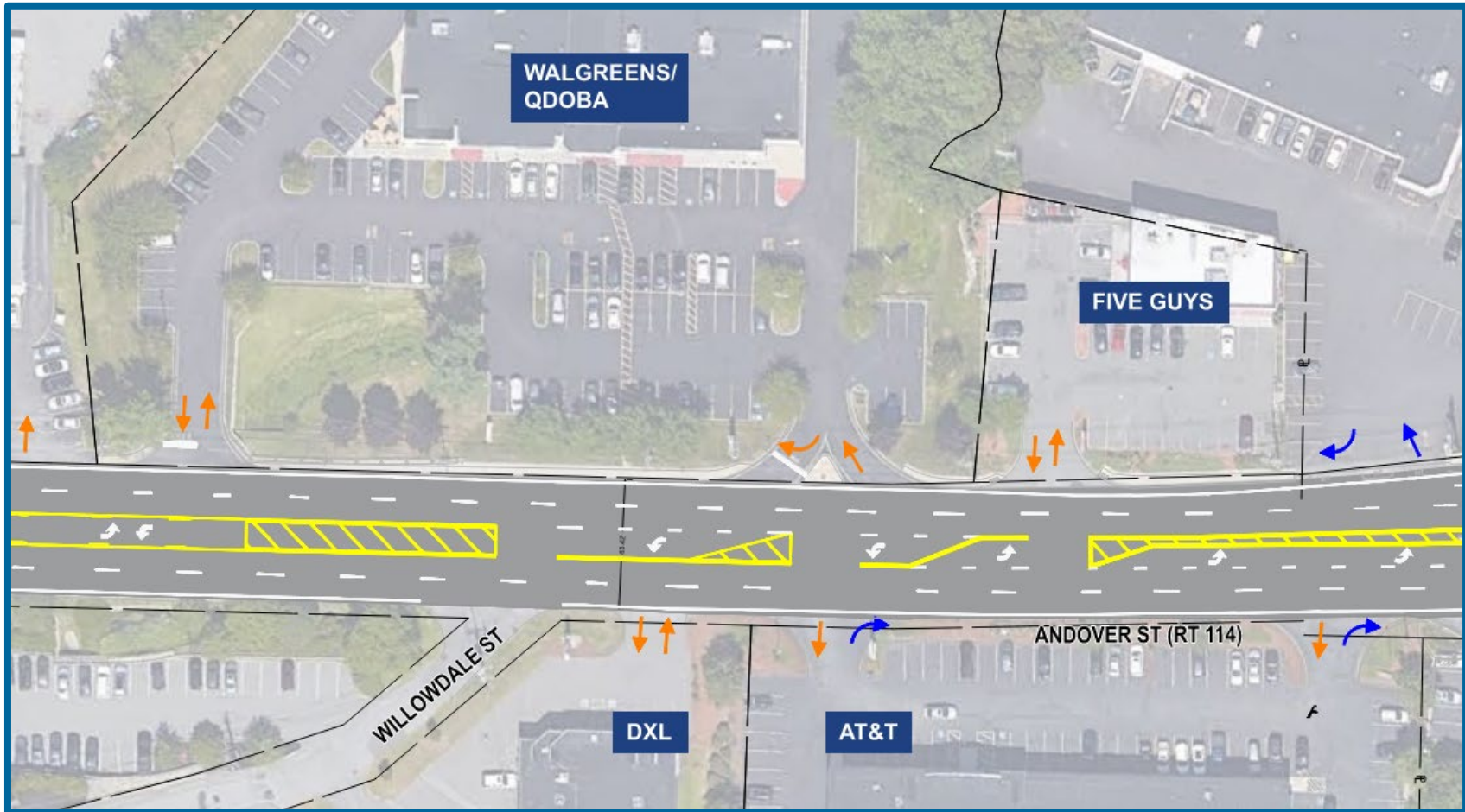
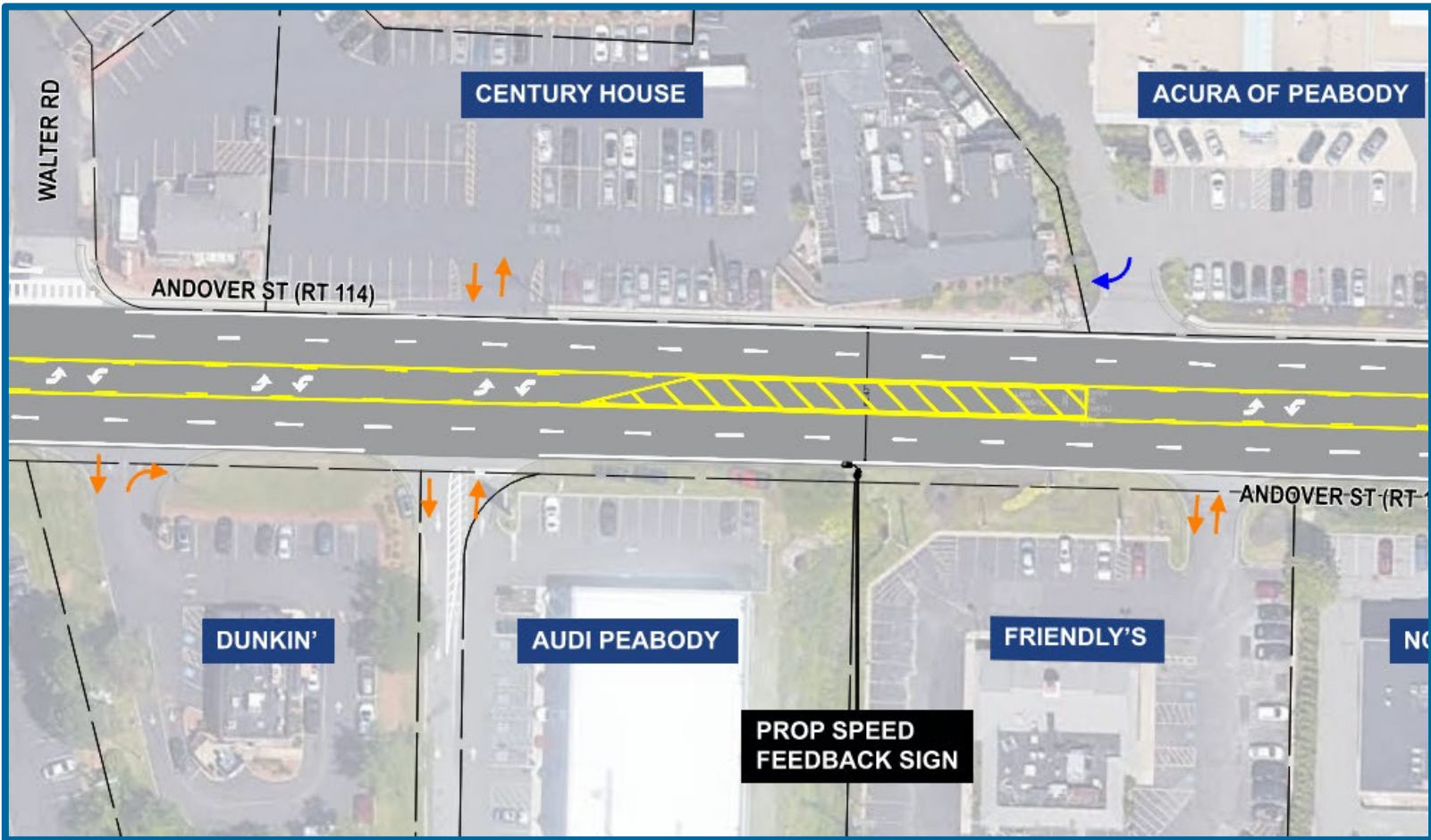
1.5 - mile stretch between crosswalks across Route 114 (Brooksby Village Drive to Loris Road)

Two new crosswalks at Garden and Palmer to meet demand created by land use on both sides of the road

Locations selected by crash history and pedestrians counted

No ROW or significant utility work was required; more crosswalks to be evaluated for Spring/Summer

Design Development: Changes to Two Way Left Turn Lane



Add diagonal hatching to areas of the two-way-left-turn-lane that do not require turns

Convert TWLTL to pocket lefts as appropriate

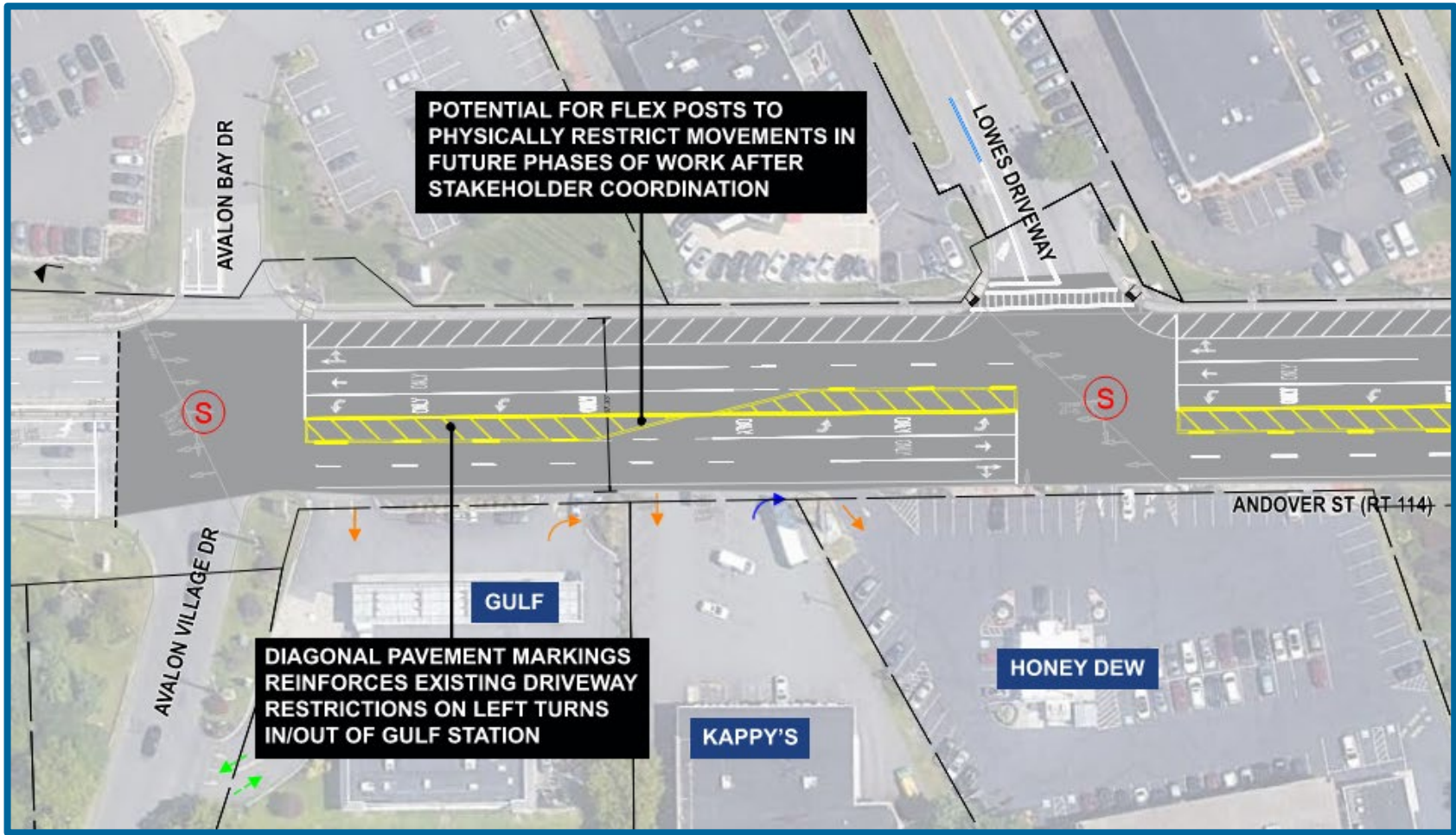
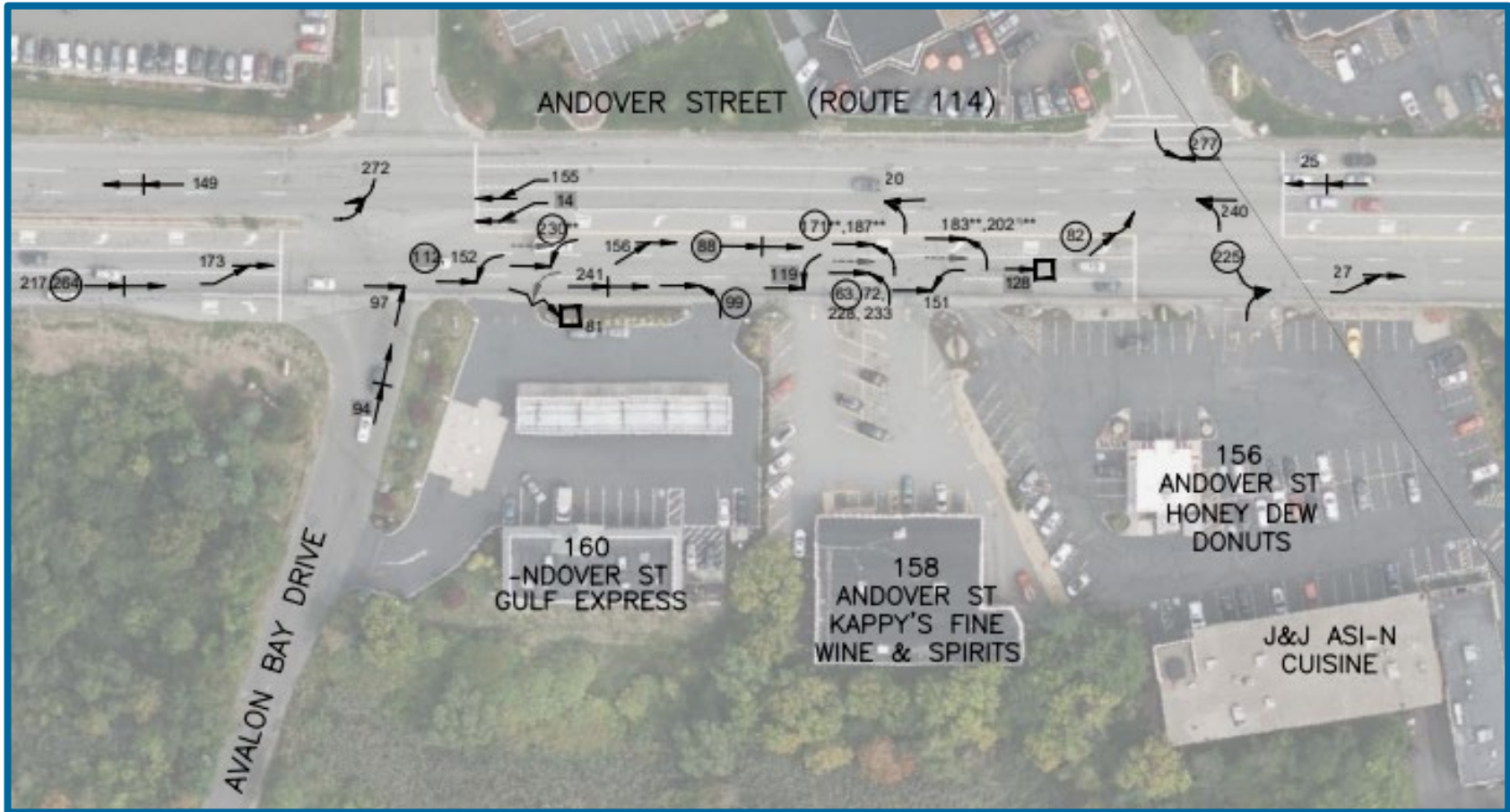
Goal is to provide visual breaks in the TWLTL to avoid unnecessary driving in it, reducing head-on conflicts and speeding

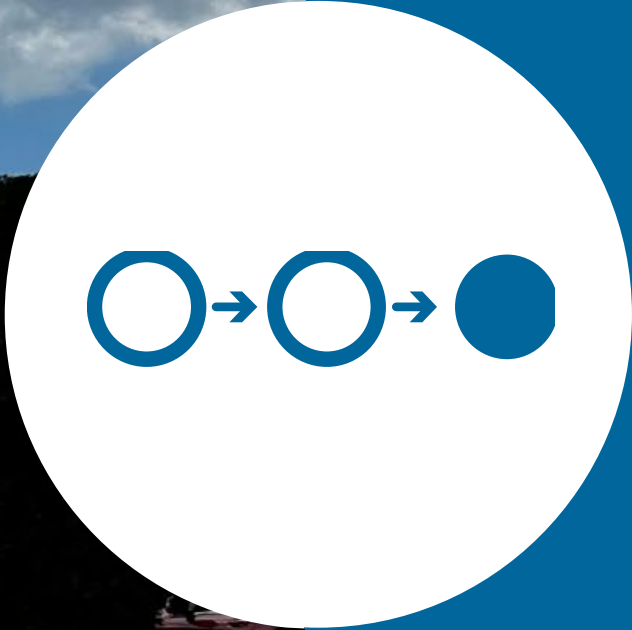
Design Development: Access Management

Discourage dangerous turns to access businesses with pavement markings

Potential to add flex posts to physically restrict movements after coordination

Targeted areas with redundant access points, alternate access to a signal via a side street, and significant crash history





Next Steps

Next Steps



Fall Implementation of
Tier 1 Improvements –
Ongoing



Public Meeting for
Discussion of Tier 2
Improvements



Reach out to
stakeholders and
businesses for
coordination and
rights-of-entry as
needed



Design of Tier 2
Improvements over
the Winter/Spring



Spring/Summer
Implementation of
Tier 2 Improvements

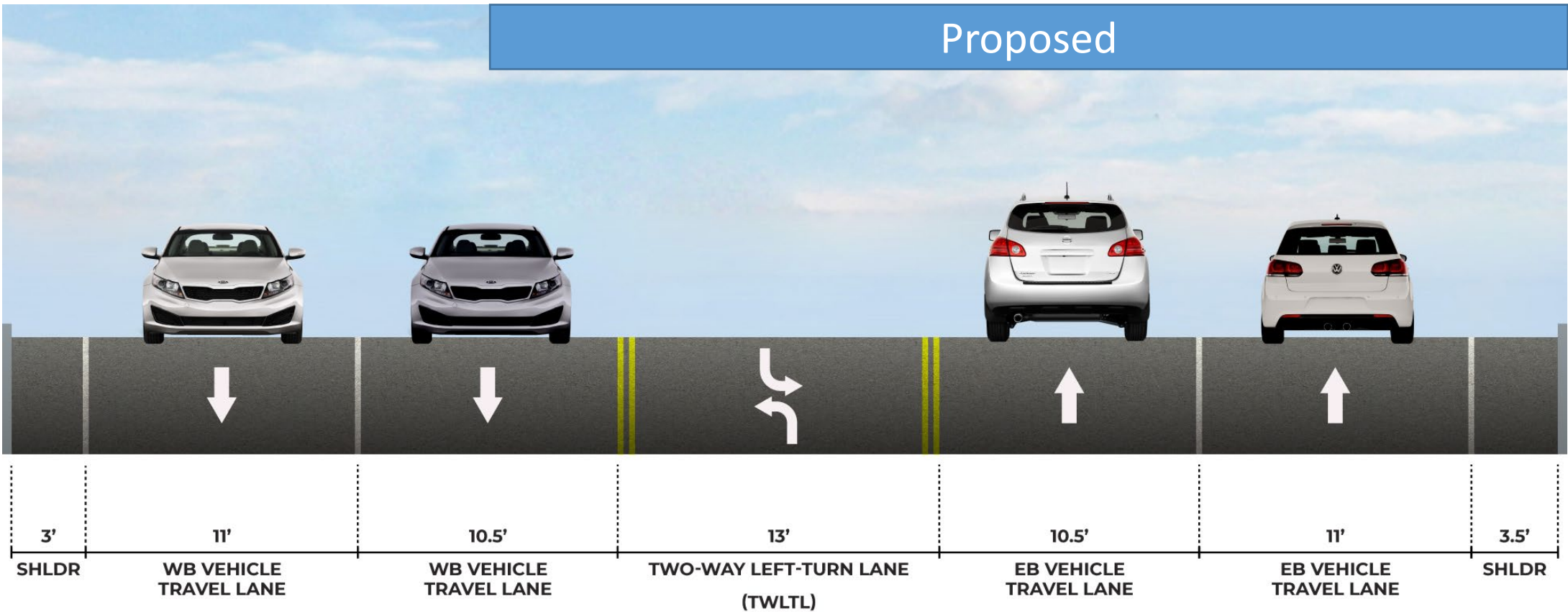
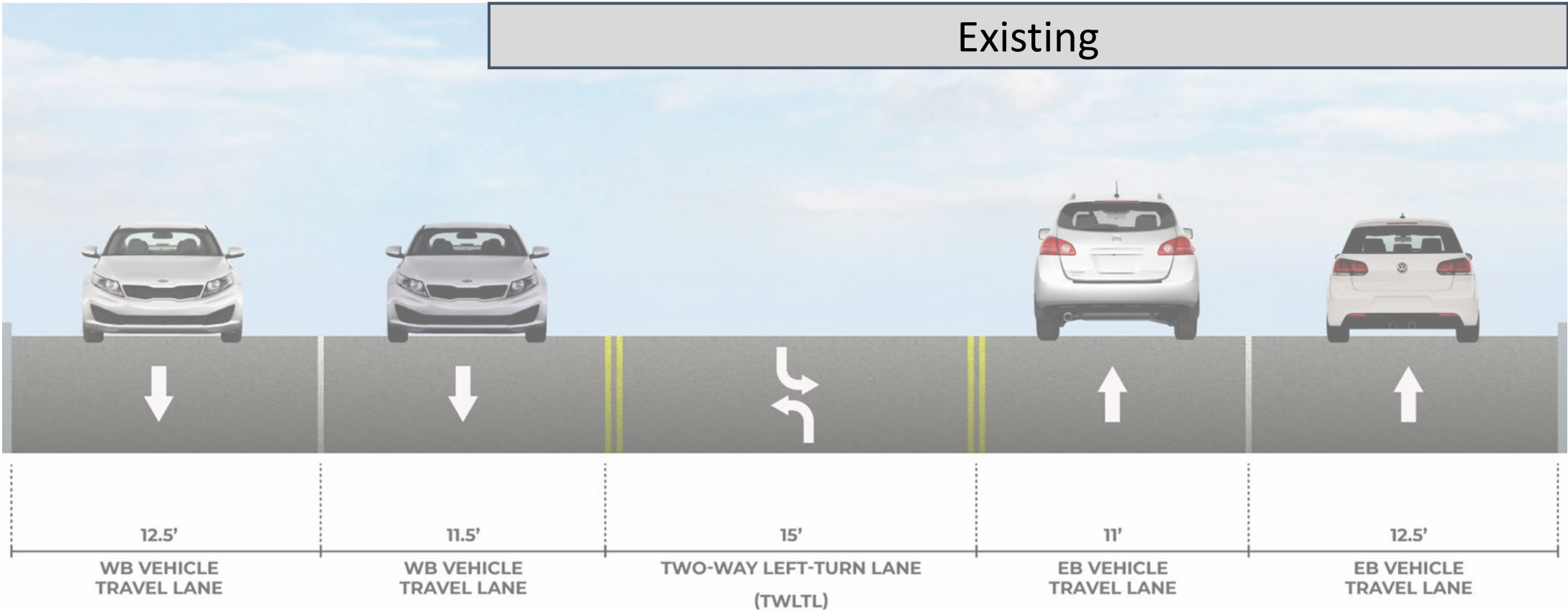
Next Steps: Tier 1 Implementation Update

- 🚦 Signal work: Mostly complete; pending pedestrian equipment
- 🚧 Pavement markings: ongoing
- 🚶 Curb ramps: anticipated this week



Next Steps: Tier 2 Implementation

- Resurfacing of the corridor and providing narrower travel lanes to reduce speeding
- Installing flex posts, signs, and pavement marking in targeted locations to restrict left-turns with high potential for conflict and/or significant crash history
- More pedestrian crossing opportunities
- Targeted sidewalk construction to connect to destinations on the south side of Route 114 and fill desire lines





**How will we
keep you
informed?**

How Will We Keep You Informed?



Project Website: <https://www.mass.gov/route-114-danverspeabody-safety-improvements-project>



Project email: route114safety-peabodydanvers@dot.state.ma.us

Reach out with questions, concerns, or to sign up for future updates!

Look out for a Public Workshop on the
Tier 2 Design Improvements later this year!



**Questions and
discussion**



Thank You

Route 114 Safety Improvements Project Danvers/Peabody

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