



PUBLIC INFORMATION CENTER

CONCEPT DEVELOPMENT STUDY

NEWTON AVENUE (CR 604)

SIGNAL AND ALIGNMENT IMPROVEMENTS

CITY OF CAMDEN

CAMDEN COUNTY, NEW JERSEY

OCTOBER 24, 2019

Project Team Leaders



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Agenda

1. Project Background
2. Project Goals
3. Project Location
4. Public Outreach Efforts
5. Review of Environmental Screening
6. Key Issues
7. Alternatives
8. Concept Development Process
9. Schedule

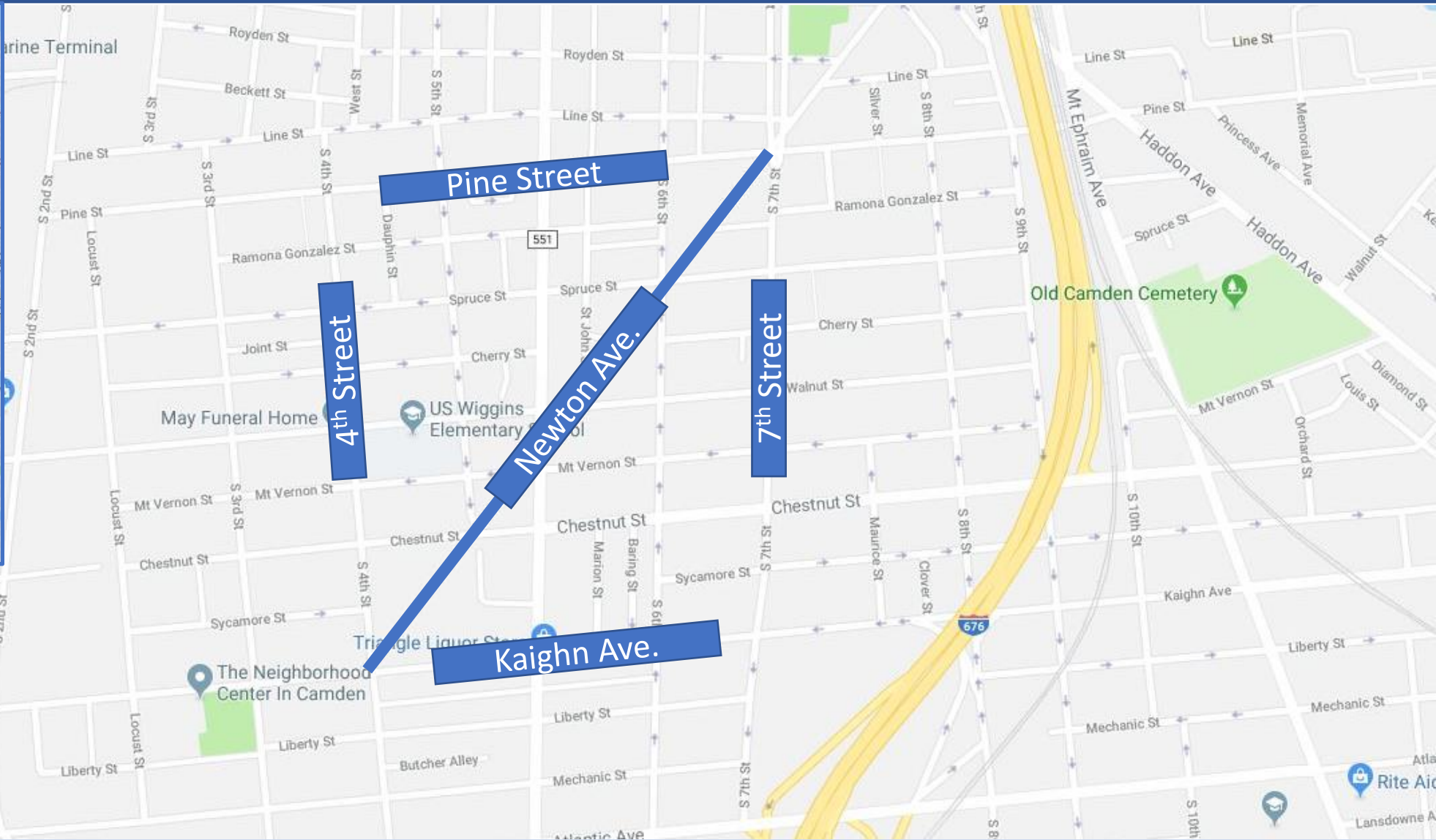
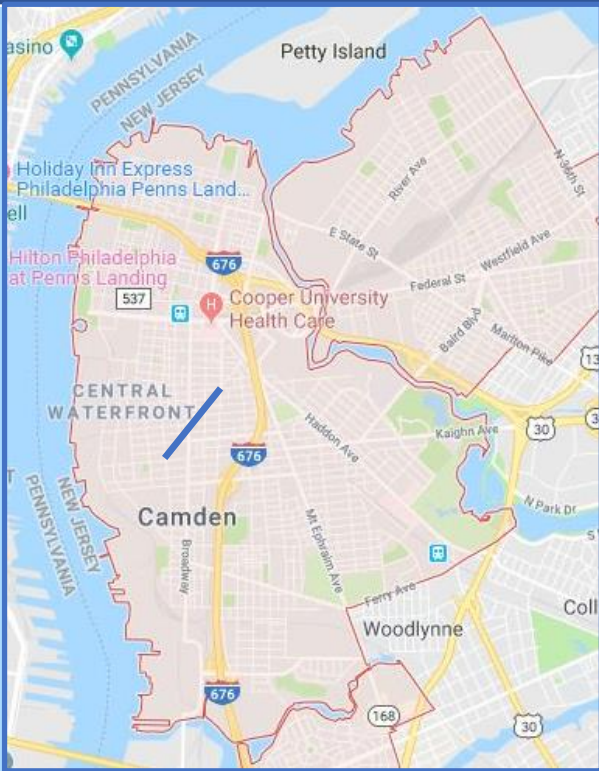
Project Background

1. Camden County received a grant from NJDOT to perform a Concept Development Study on Newton Avenue
2. The project is being managed by the County following NJDOT procedures
3. The purpose of a Concept Development Study is to:
 - Analyze the existing conditions at the site and identify key issues/deficiencies
 - Develop a series of alternatives which address the key issues
 - Solicit feedback from the public and key stakeholders on which alternative is most desirable
 - Identify the preferred alternative to be advanced to design

Project Goals

1. Enhance motor vehicle, bicycle, and pedestrian mobility while reducing accidents within the project area;
2. Upgrade signalized and unsignalized intersections for ADA compliance;
3. Evaluate Newton Ave. alignments to modify complex intersections to improve safety;
4. Upgrade/replace the underground infrastructure as required;
5. Improve roadway pavement, sidewalks, striping and signing
6. Develop a preferred alternative that is community-driven and stakeholder supported.

Project Location



Newton Avenue Signal & Alignment Improvements



Public Outreach Efforts

- Meetings
 - Stakeholder Meeting #1 – 01/30/2019
 - Local Officials Briefing – 05/06/2019
 - Stakeholder Meeting #2 – 09/05/2019
 - Cooper/Lanning Civic Association Meeting – 09/26/2019
 - **Public Information Center – 10/24/2019**
- Surveys
 - Stakeholder Survey – 01/30/2019
 - Identify how and why people use Newton Avenue
 - Determine what improvements are desired
 - Alternatives Survey – 09/05/2019
 - Gather input on preferred alternatives

STAKEHOLDER SURVEY
NEWTON AVENUE (CR 604) SIGNAL AND ALIGNMENT IMPROVEMENTS

Name _____ Organization (if any) _____
Address _____
Telephone Number _____ Email Address _____
How would you like to be contacted? Telephone Email Mail

1. How often do you come into the project area in a month? (Check one box)
 Every day (20-30 days)
 Often (5-10 days)
 Seldom (1-3 days)
 Never

2. How do you get to the project area? (Check all that apply)
 Drive
 Take the Bus
 Walk
 Ride a Bike
 Other _____

3. How do you get around the project area? (Check all that apply)
 Drive Take the Bus Walk Ride a Bike Other _____

4. What is important to you in regards to the project area? (Check all that apply)
 Beautification Walking/biking/transit Local Business Access to social services
 Traffic Other _____

5. What are the issues or problems that you experience with this area?

6. Please share any comments, questions, or suggestions you have in regards to the project.

7. Are there any special provisions you will need to attend future public meetings for this project? (i.e. access, hearing or visual)

8. Are there any organizations or individuals you think we should contact as possible stakeholders?

Thank you for completing the survey. Please return the survey by February 13, 2019 to Jing Kang, P.E. at jkang@sjheng.com



Public Outreach Efforts

□ Results of Stakeholder Survey

- About 50% of people walk or bike to Newton Ave. and about 1/3 by car
- Issues commonly experienced with this area
 - Crime/drugs
 - Lighting
 - Pedestrian crossing
 - Roadway
- Requested Improvements
 - Walking/biking/transit
 - Beautification
 - Traffic
 - Local business

□ Results of Alternative Survey (to date)

- Eastcoast gas station owner is objectionable to Alternative 2
- Some concerns on proposed Newton/Pine/7th Street roundabout operation

Review of Environmental Screening

Summary of Potential Environmental Impacts

- Minimal impacts to environmental resources
- Environmental Justice/Community Impacts: long-term advantage expected as a result of the proposed improvements
- No adverse impact to Bergen Square Historic District and Broadway Trust Company building is anticipated
- No adverse air and noise impact is anticipated
- No alterations to Land Use/Land Cover
- Will need to meet water quality treatment for new and reconstructed roadway pavement if total net new impervious surfaces exceed 0.25 acres
- Potential impacts to Known Contaminated Site (KCS) and Underground Storage Tank (UST) sites located within project area will be evaluated during subsequent design phases and may require the development of material handling plans.
- No impacts to Green Acres encumbered properties
- Soil erosion and sediment control plans will be required and be developed during design phase

Key Issues

- Driver Confusion with Lack of Pavement Marking/Signing
- Pedestrian, Bicycle and Vehicular Safety
- Poor Roadway (Pavement) and Sidewalk Conditions
- ADA Non-Compliant Pedestrian Facilities
- Substandard Traffic Signal Equipment
- Aged Underground Infrastructure

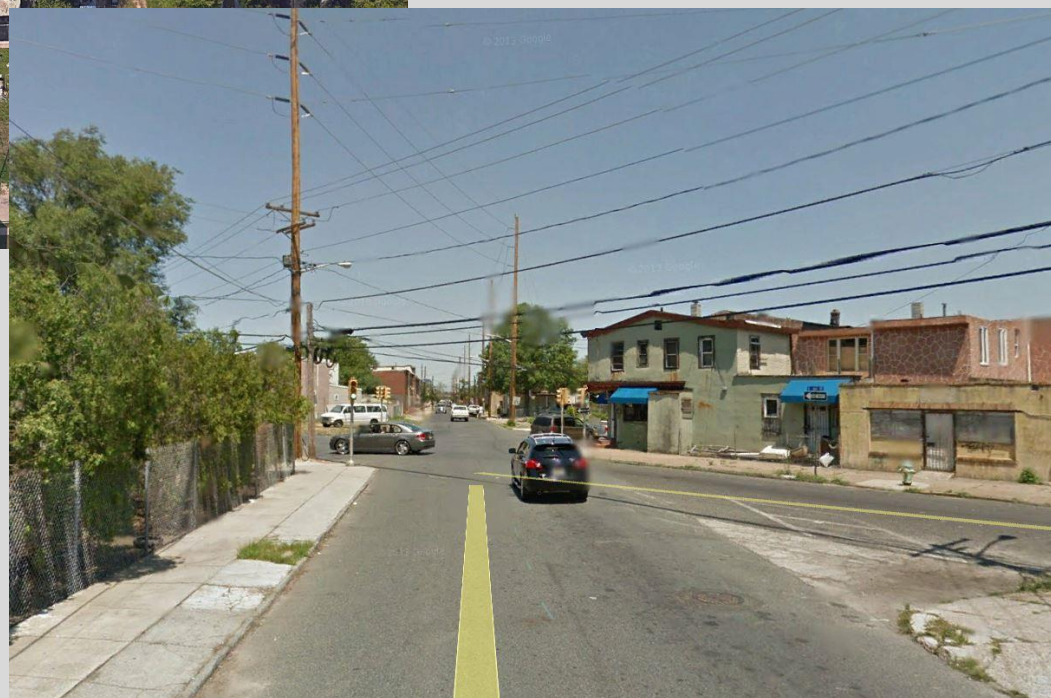
Key Issues – Driver Confusion with Lack of Pavement Marking/Signing



3 Signalized Intersections {4 leg (1), 5 leg (1), 6 leg (1)}

4 Unsignalized Intersections {4 leg (2), 5 leg (1), 6 leg (1)}

- Inadequate visibility and clear assignment of right-of-way
- Poor operational performance – especially for signalized intersections
- Insufficient reaction time caused by conflicting movement and challenging intersection geometry



- Slower turning movements for vehicles (SU-30 trucks and smaller)
- Increases pedestrian walking distance at the intersections
- Missing crosswalks and stop bar along the intersections

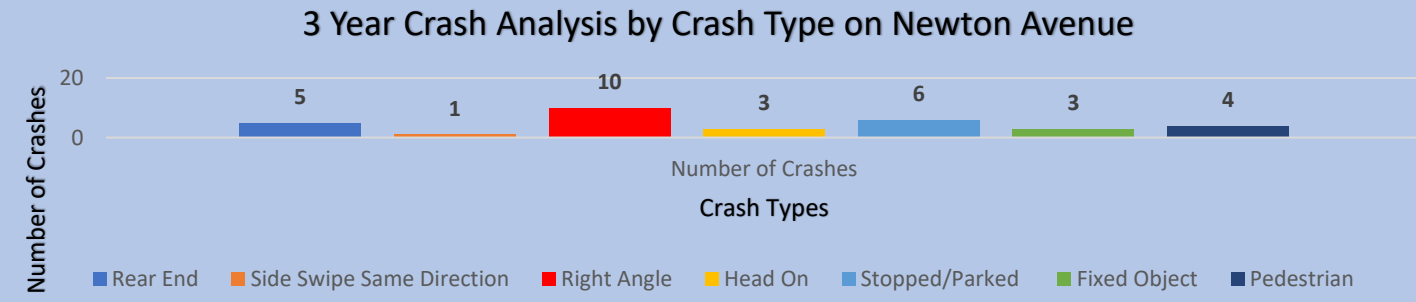
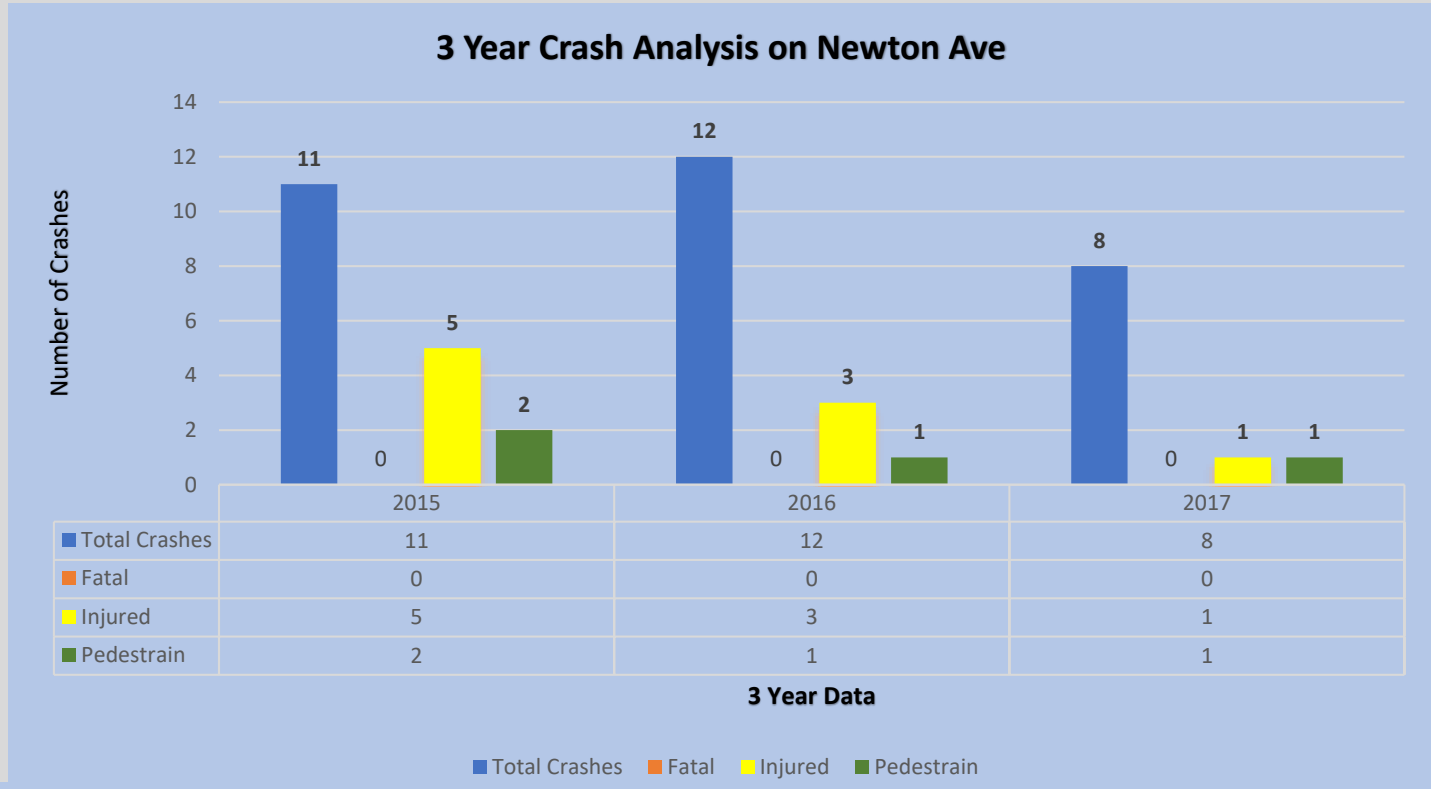


Key Issues – Pedestrian, Bicycle and Vehicular Safety

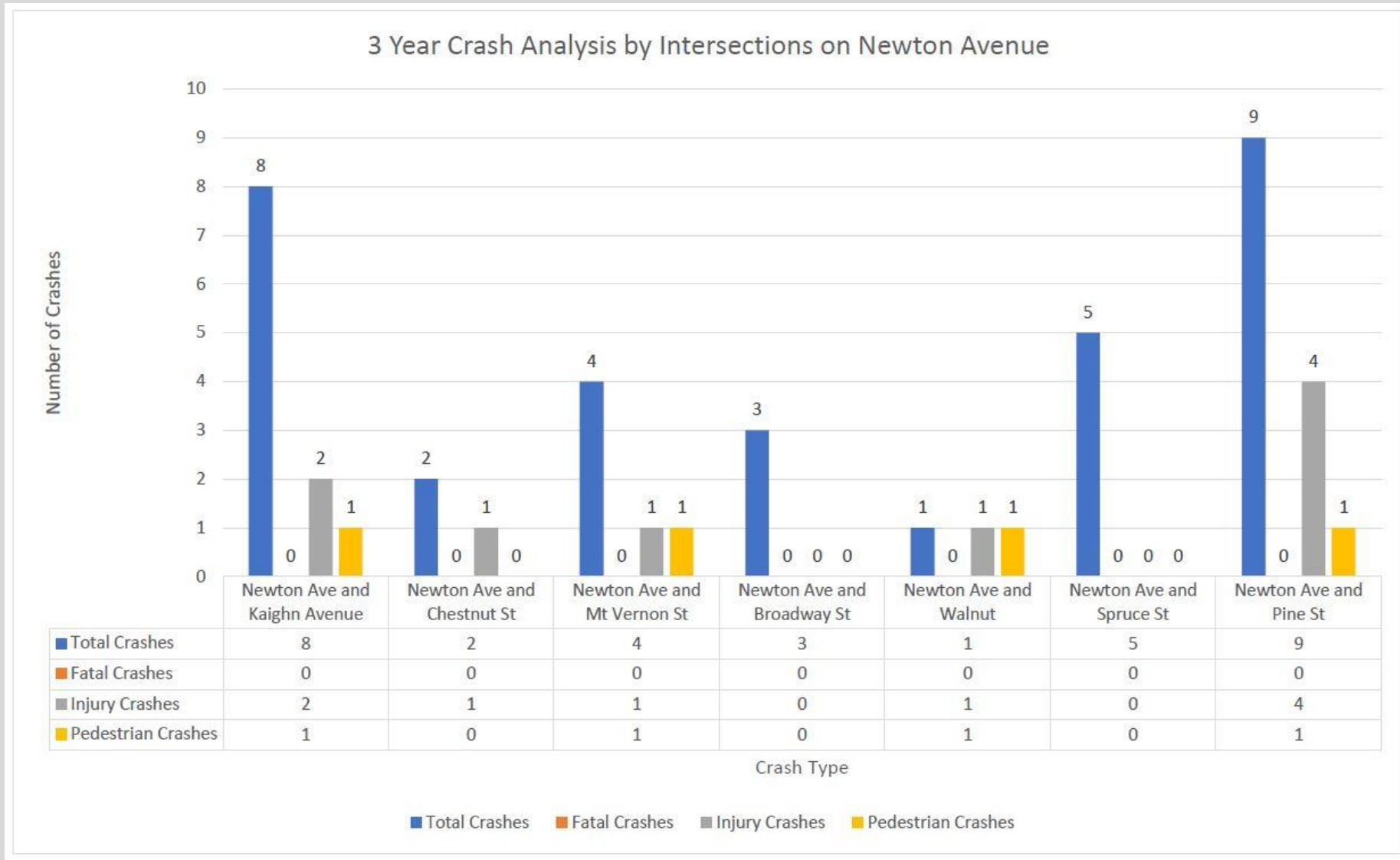
Crash Analysis – 2015, 2016, 2017

Key Observations

- A total of 32 crashes occurred during the analysis period
- No fatal crashes observed
- However
 - 9 crashes involved injury along the 0.5 mile segment of Newton Avenue accounting for approx. 28% of total crashes > Statewide Avg. 25.58%
 - 4 crashes included pedestrian/bicyclist accounting for approx. 13% of total crashes > Statewide Avg. 2.77%
 - 10 crashes occurred at right angle which accounts for approx. 31% of total crashes > Statewide Avg. 18.73%



Key Issues – Pedestrian, Bicycle and Vehicular Safety

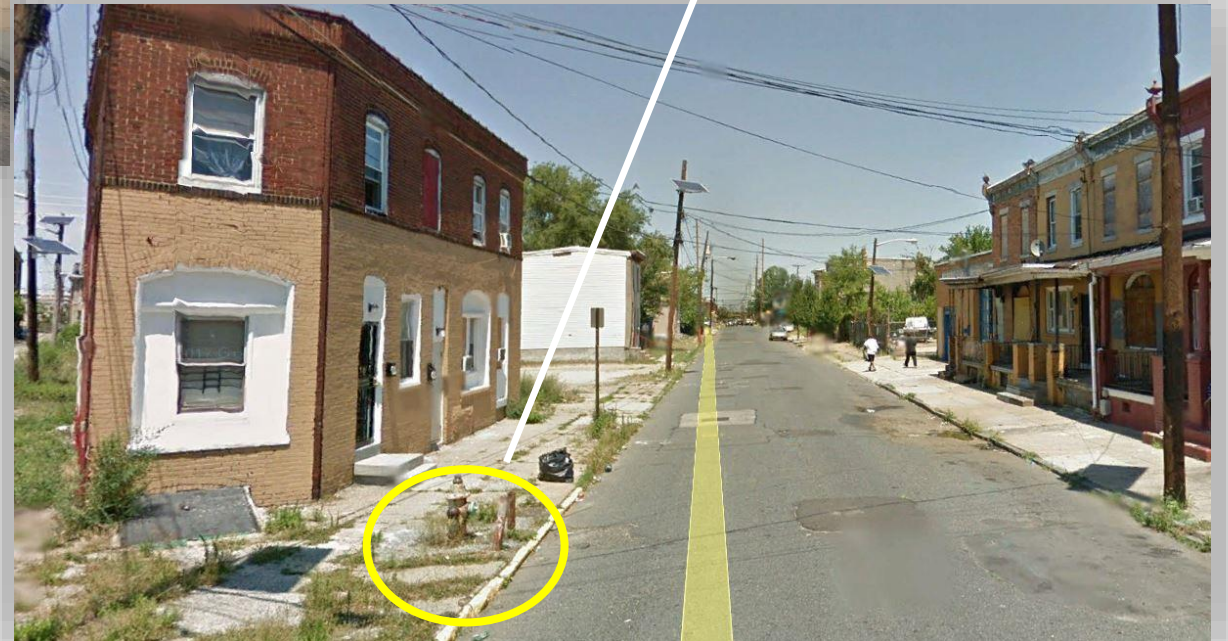


Key Issues - Poor Roadway(Pavement) and Sidewalk Conditions



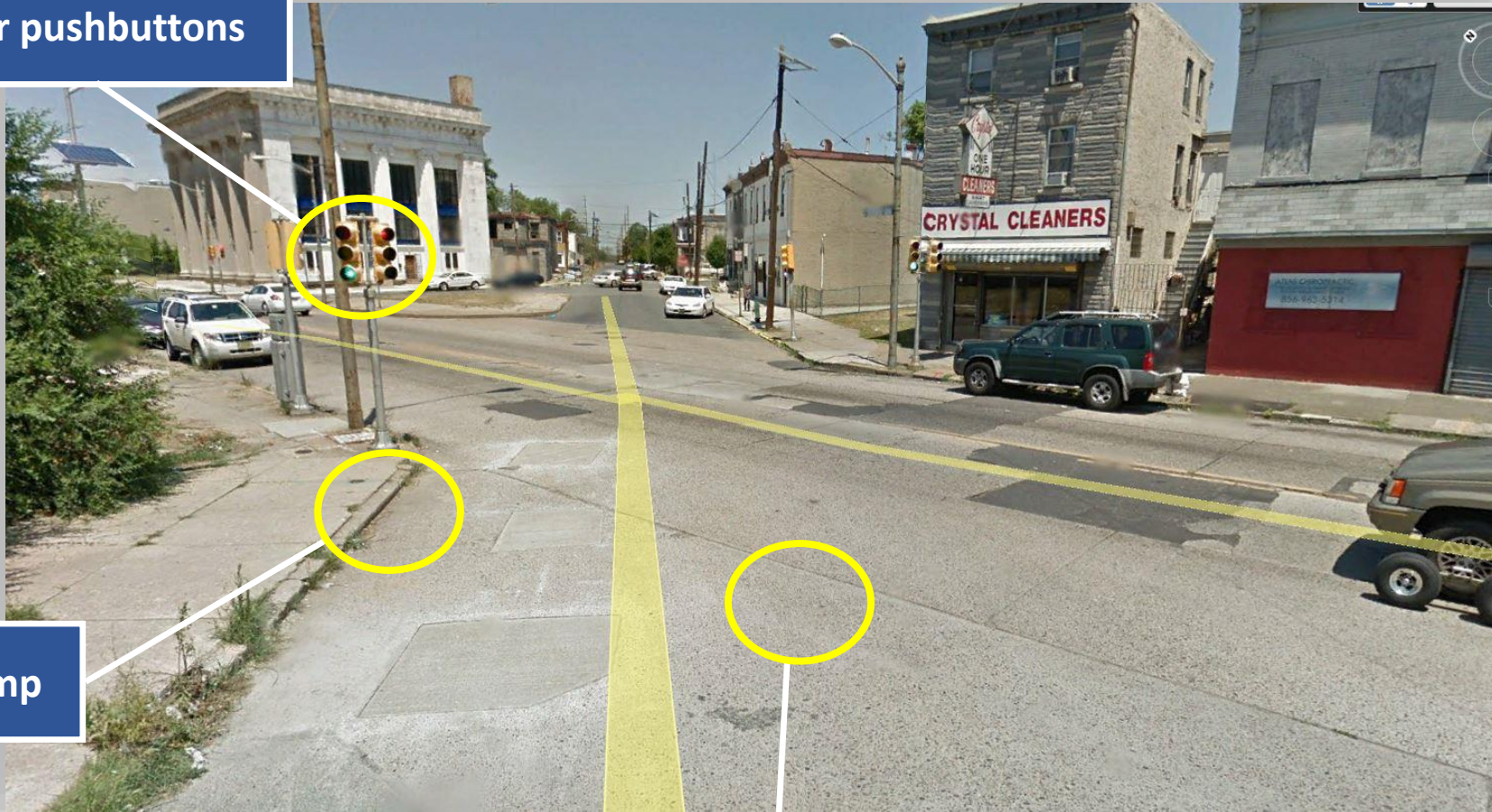
Concrete and asphalt patches

Poorly maintained sidewalk



Key Issues - ADA Non-Compliant Pedestrian Facilities

No ped heads or pushbuttons



Missing curb ramp

Missing crosswalks

Key Issues - Substandard Traffic Signal Equipment

8" head



Missing far right signal

Missing stop bar

Key Issues – Aged Underground Infrastructure



Missing curb piece

Inlet in the middle of crosswalk






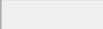






All Alternatives

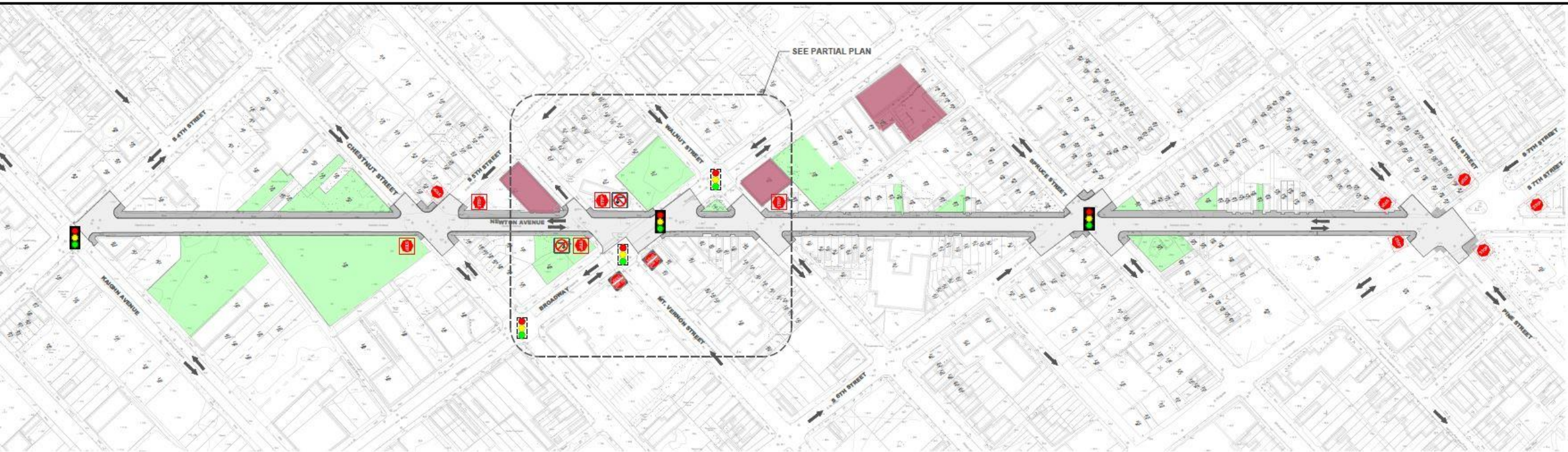
- Provide Americans with Disabilities Act (ADA) ramps at all intersections
- Rehabilitate/replace stormwater and sanitary sewer systems
- Pavement rehabilitation/reconstruction
- Reconstruction of existing sidewalks
- Upgrade existing traffic signals
- Improve striping and signing
- Install new street lightings
- Landscape improvements

Alternative 1 – Existing Roadway Configuration with Signal Upgrades

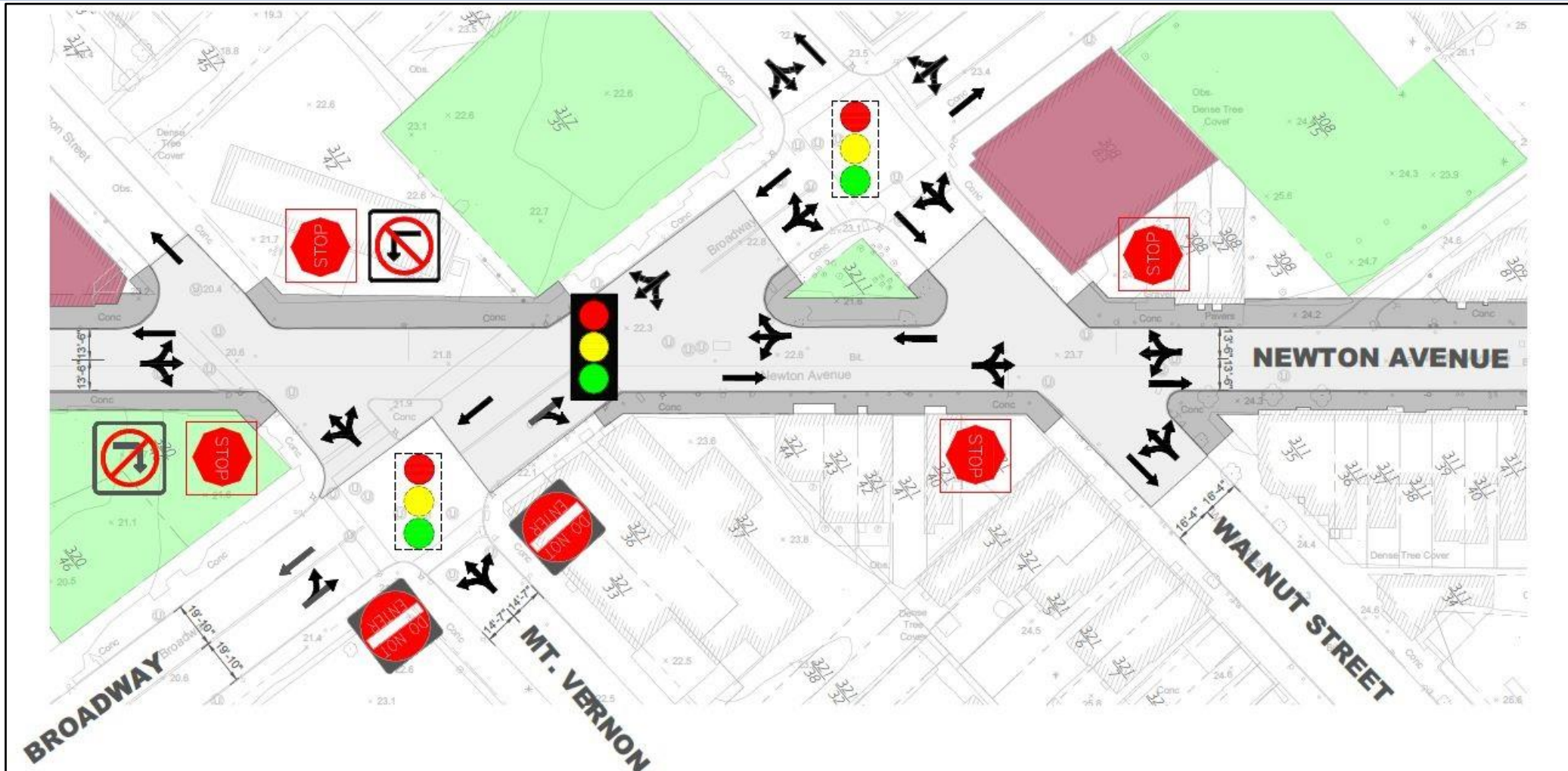
- Maintain the existing 2-way operation along Newton Ave.
- Upgrade all existing signals along Newton Ave. within project limits

LEGENDS

 PROPOSED NO RIGHT TURN SIGN	 EXISTING STOP SIGN	 EXISTING SIGNAL TO BE UPGRADED	 PAVEMENT	 PROPERTY OWNED BY CITY OF CAMDEN
 PROPOSED NO LEFT TURN SIGN	 PROPOSED DO NOT ENTER SIGN	 EXISTING SIGNAL TO REMAIN	 SIDEWALK	 HISTORIC PROPERTY

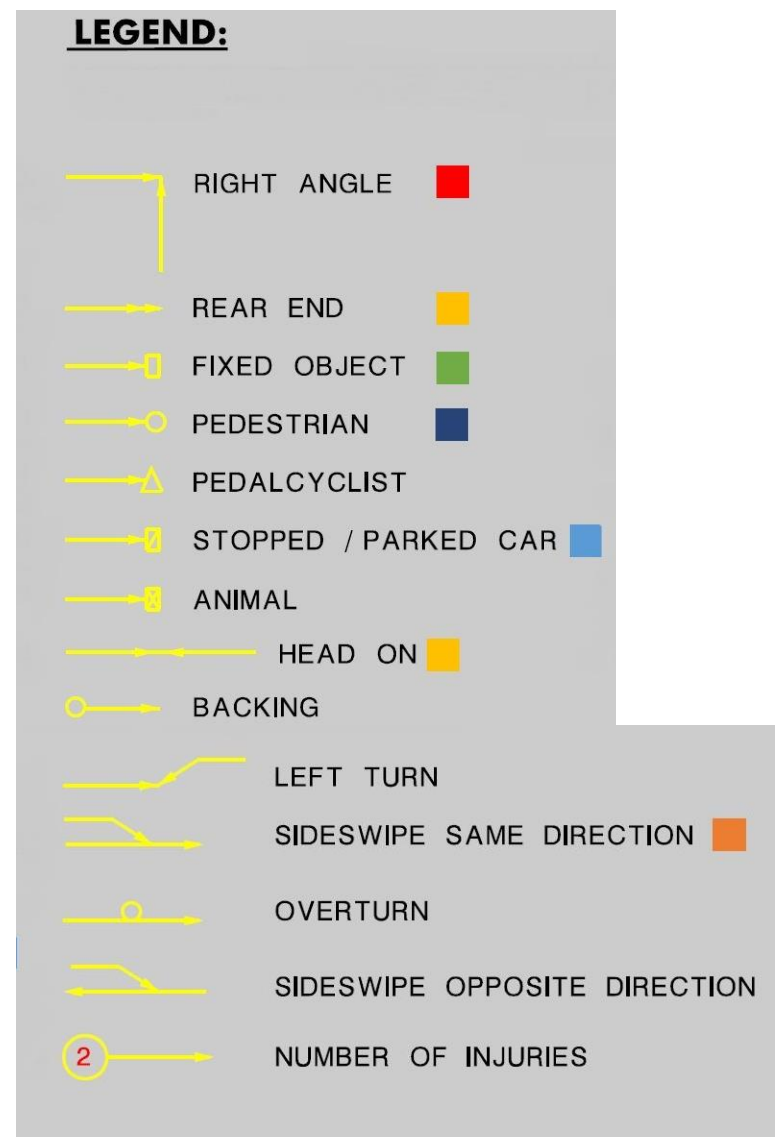


Alternative 1 – Existing Roadway Configuration with Signal Upgrades



Partial Plan

Crash Diagram at Newton/Broadway/Mt. Vernon/Walnut Intersections



Queuing Issue at Newton/Broadway/Mt. Vernon/Walnut Intersections

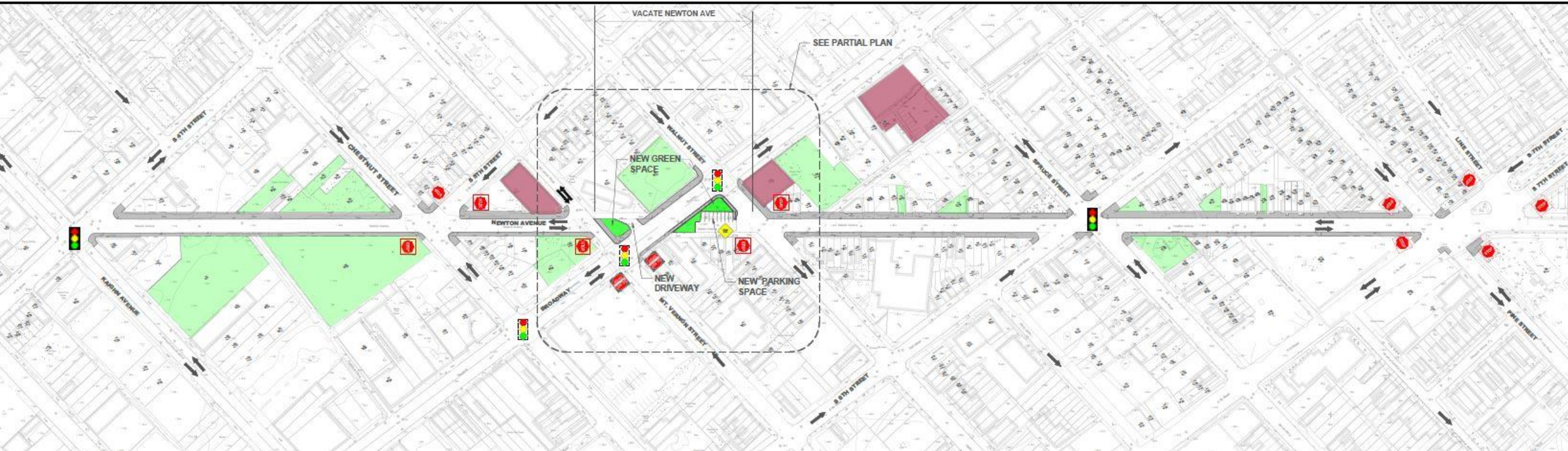


Newton Avenue Signal & Alignment Improvements

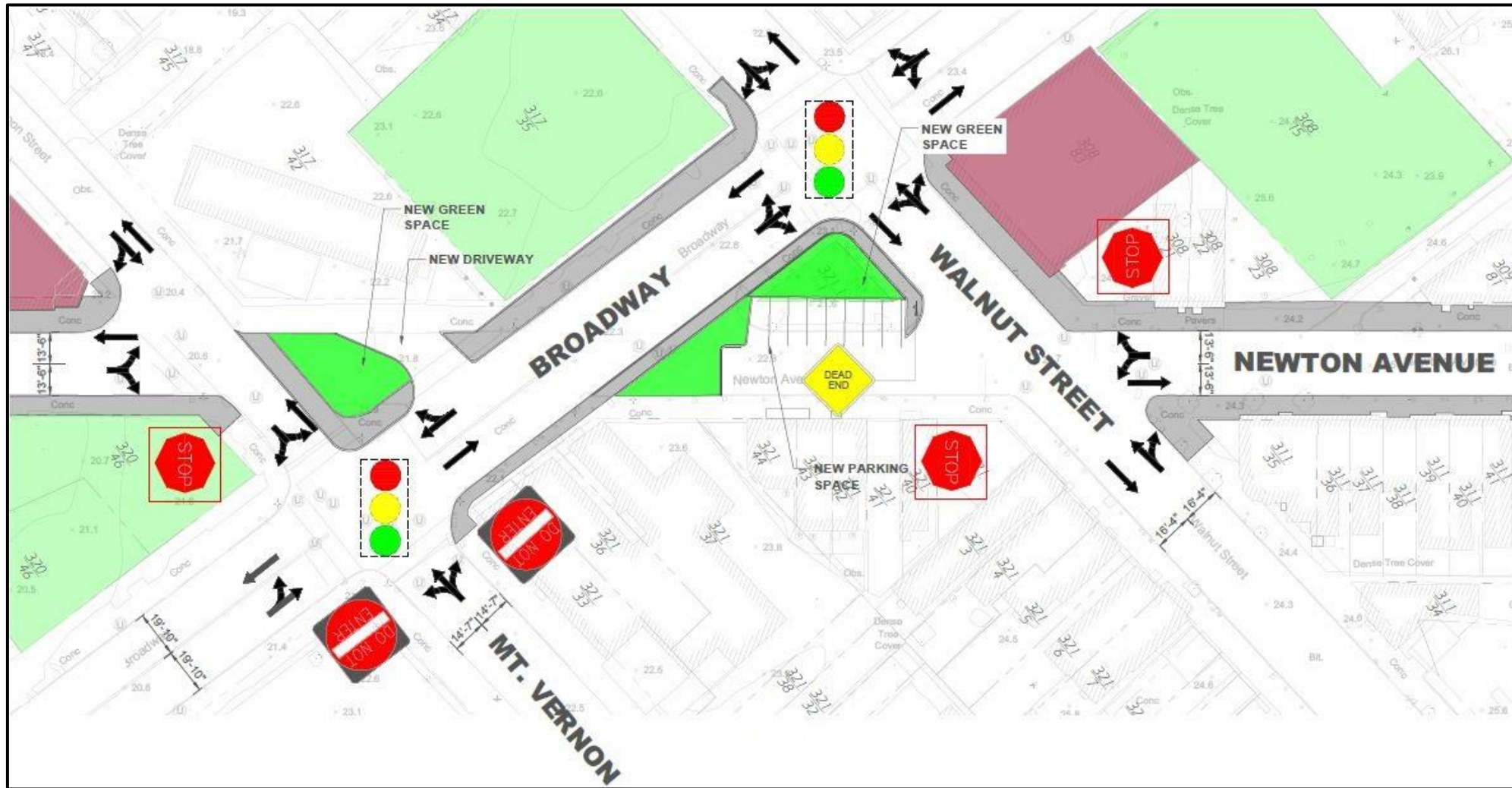


Alternative 2 – Vacate Newton Ave. b/t Mt. Vernon St. & Walnut St.

- Maintain 2-way operation along Newton Ave. from 4th St. to Mt. Vernon St, & from Walnut St. to 7th St
- Vacate Newton Ave. between Mt. Vernon St. and Walnut St. to convert the Newton Ave./Mt. Vernon St. intersection to a T-intersection, and convert Newton Ave. at Broadway to a dead end
- Upgrade all remaining existing signals along Newton Ave. within project limits



Alternative 2 – Vacate Newton Ave. b/t Mt. Vernon St. & Walnut St.

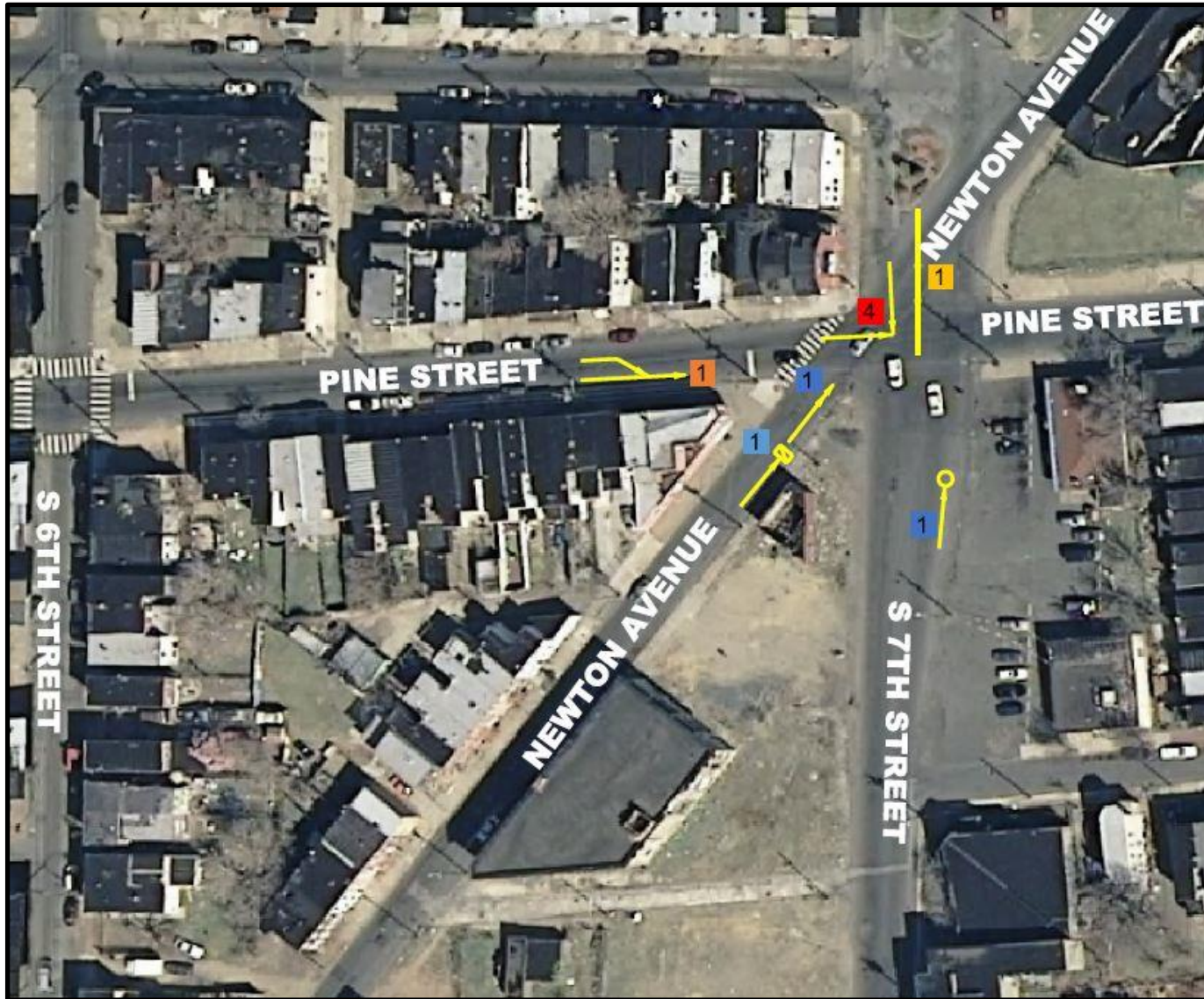


Partial Plan



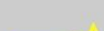





Alternative 2 – Synchro Simulation



Crash Diagram at Newton Ave./Pine St./7th St. Intersection

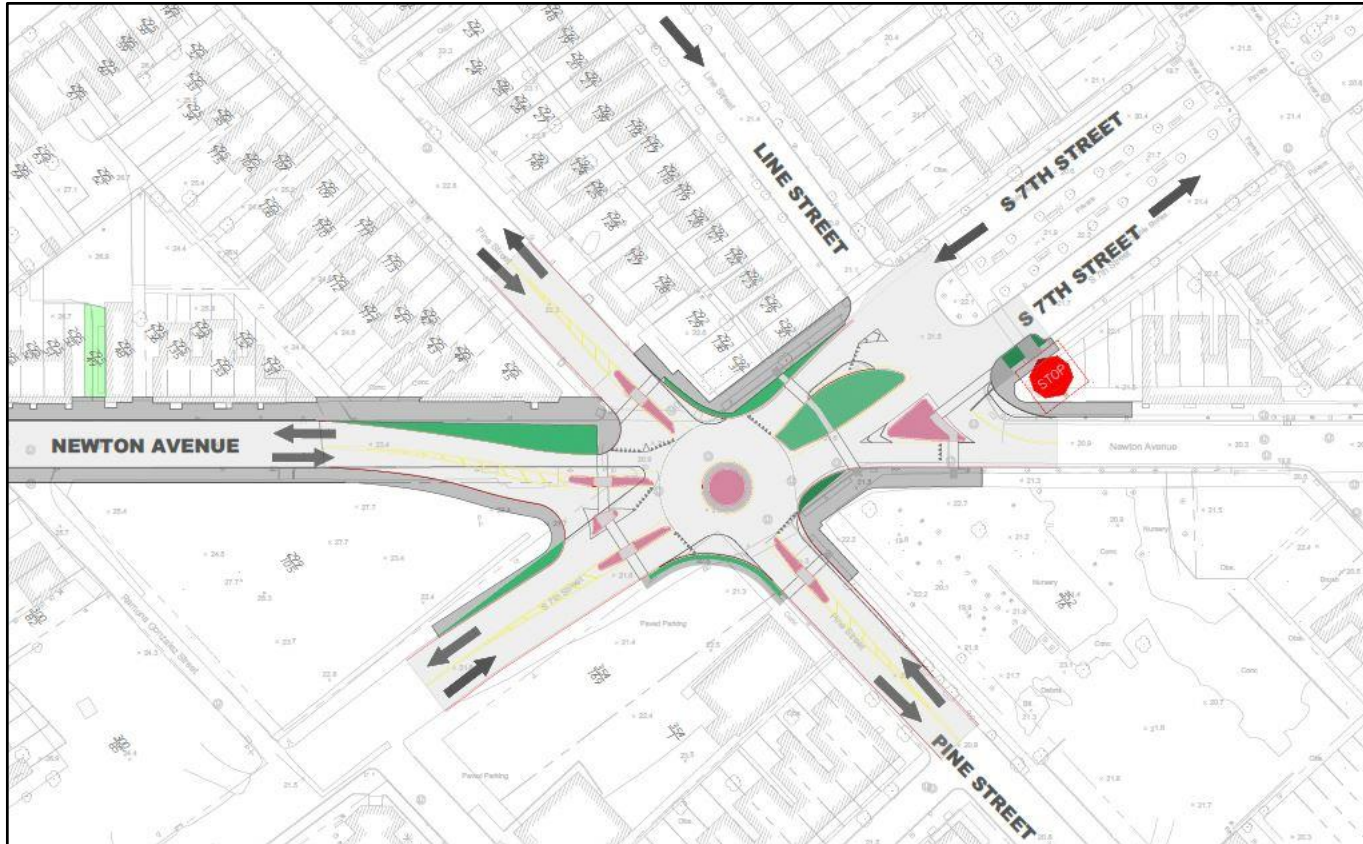


LEGEND:

-  RIGHT ANGLE 
-  REAR END 
-  FIXED OBJECT 
-  PEDESTRIAN 
-  PEDALCYCLIST 
-  STOPPED / PARKED CAR 
-  ANIMAL 
-  HEAD ON 
-  BACKING 
-  LEFT TURN 
-  SIDESWIPE SAME DIRECTION 
-  OVERTURN 
-  SIDESWIPE OPPOSITE DIRECTION 
-  NUMBER OF INJURIES 

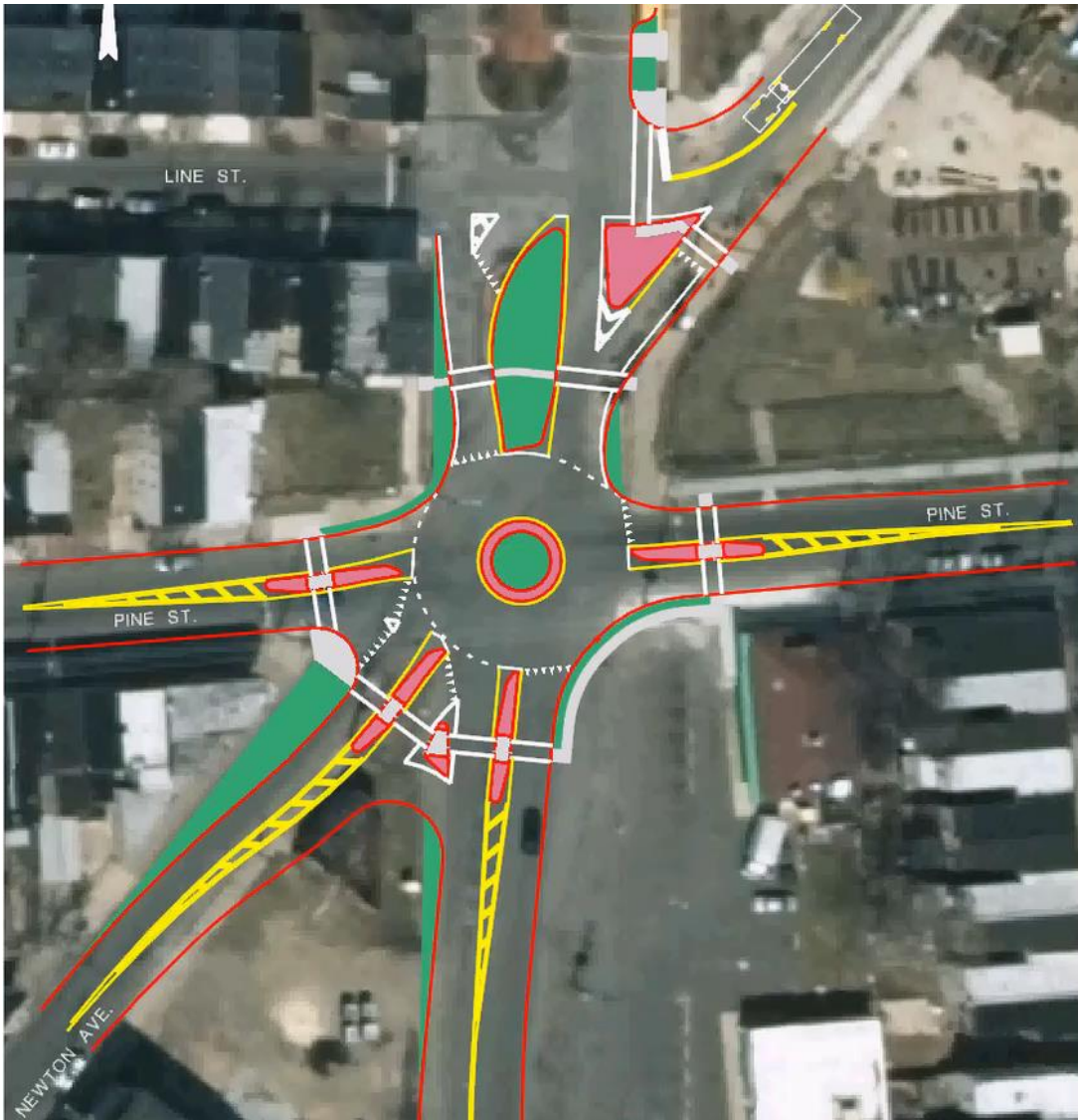
Alternative 3a – Construct Roundabout at 7th St/Pine St

- Maintain existing 2-way operation along Newton Ave.
- Upgrade all existing signals along Newton Ave. within project limits
- Construct roundabout at Newton and 7th St./Pine St. intersection



Partial Plan

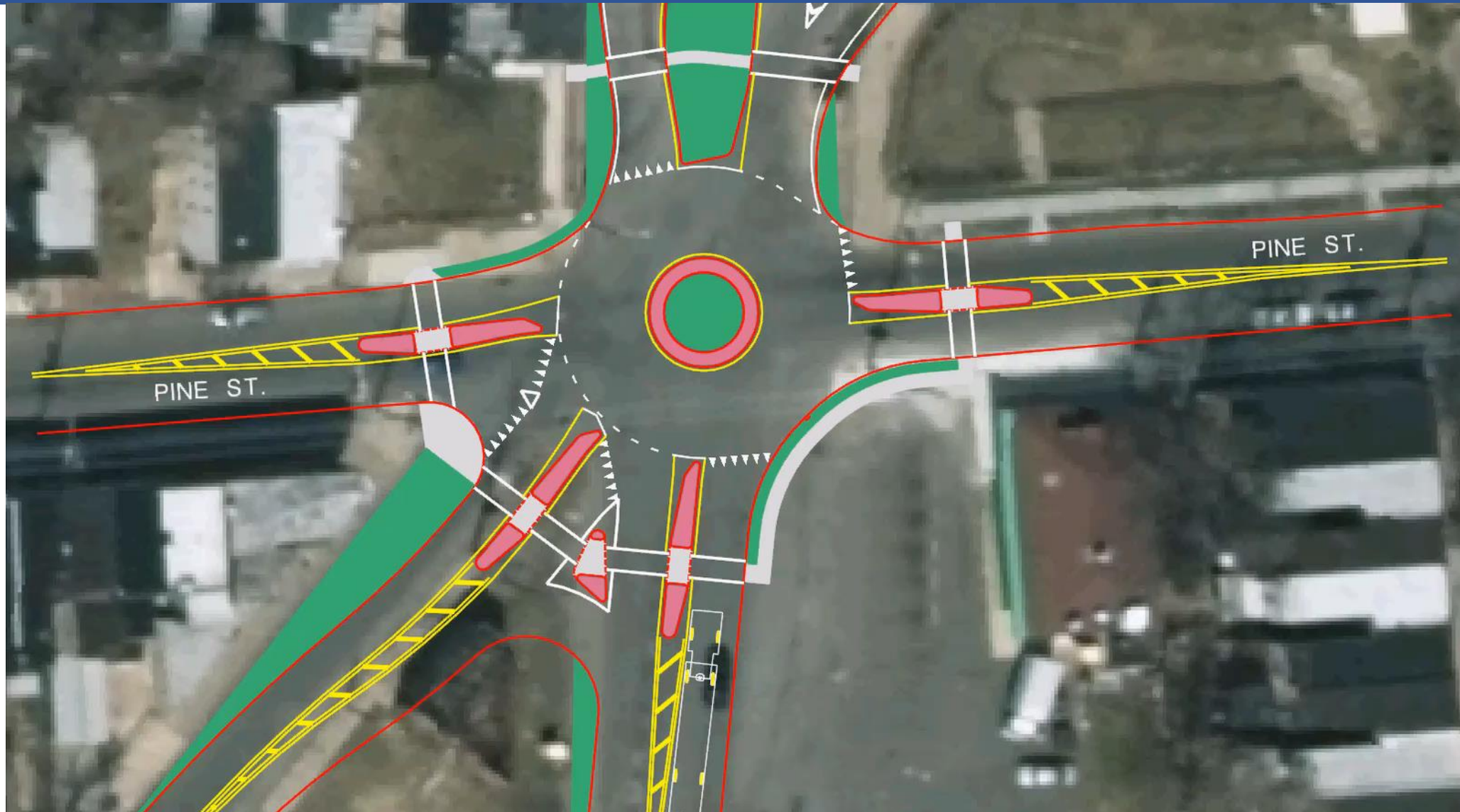
Alternative 3a – Swept Path Analysis – Southbound Movement



Fire truck configurations considered:

- Ladder 1 – Pierce Arrow XT 100' Rear Mount Aerial
- Ladder 102 – Seagraves 100' Aerial
- Ladder 2 – KME Cat TDA 100' Aerial
- Tower Ladder 3 – Seagraves 75' Tower Ladder
- Squad 7 – Pierce Saber
- Engine 9 – KME Predator

Alternative 3a – Swept Path Analysis - Northbound Movement

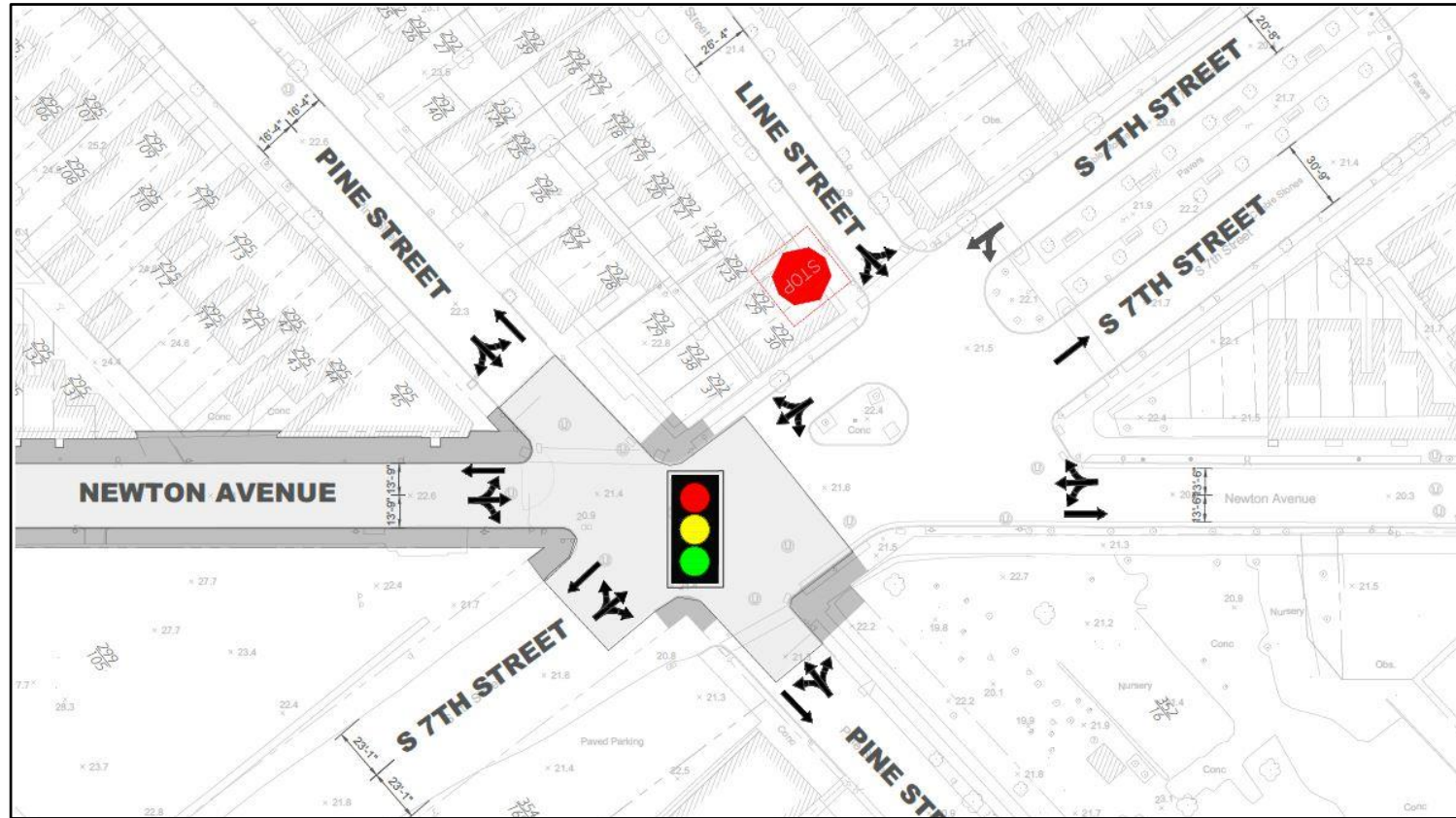


Alternative 3a – Synchro Simulation



Alternative 3b – Provide Traffic Signal at 7th St/Pine St

- Maintain existing 2-way operation along Newton Ave.
- Upgrade all existing signals along Newton Ave. within project limits
- Provide signal at Newton and 7th St./Pine St. intersection

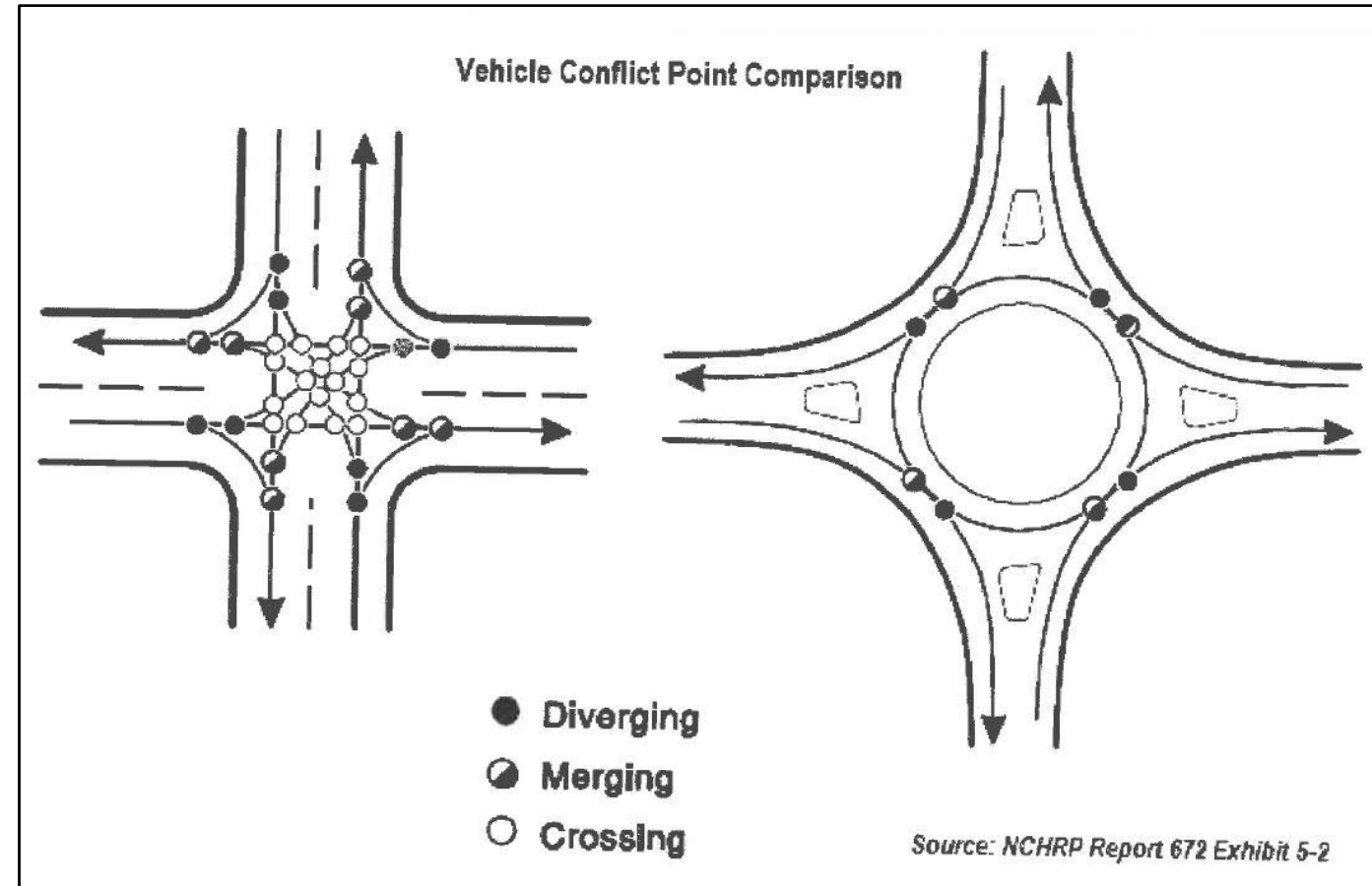


Partial Plan

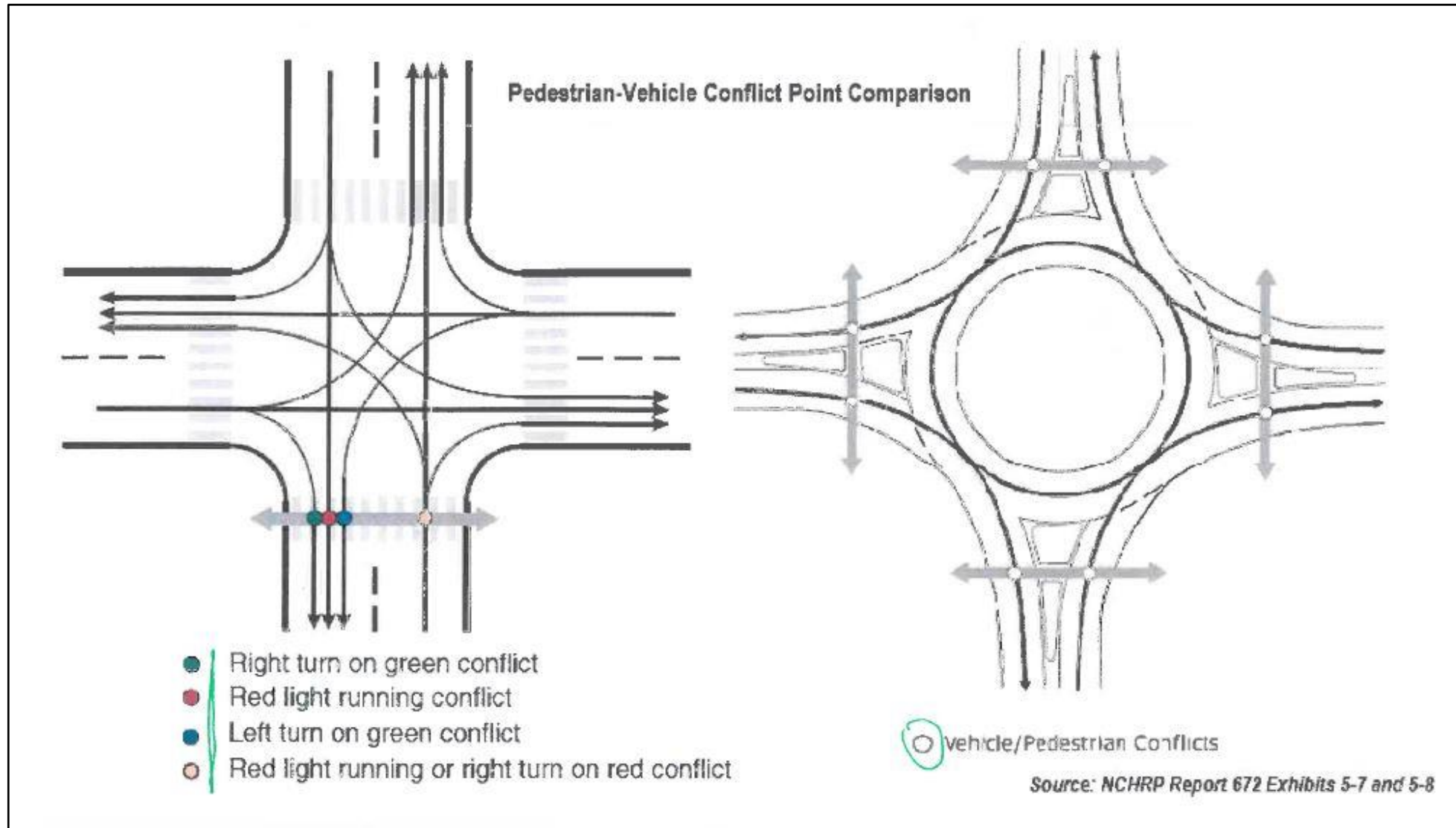
Roundabout vs Signalized Intersection Design

Advantage of Roundabout Design

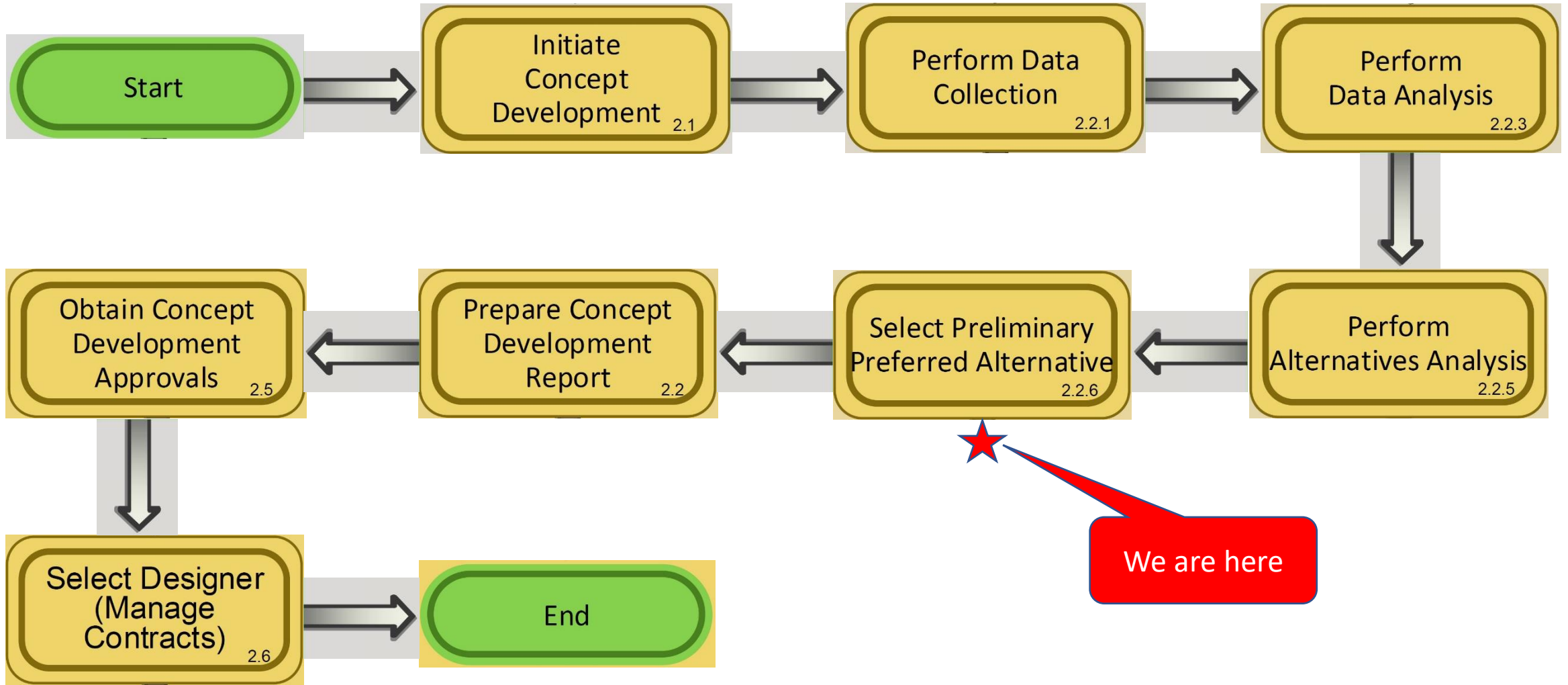
- Improve safety - less conflict points
 - IIHS and FHWA Studies show roundabouts typically achieve:
 - 37% reduction in overall collisions
 - 75% reduction in injury collisions
 - 90% reduction in fatally collisions
 - 40% reduction in pedestrian collisions
- Reduce delay, improve traffic flow
- Less expensive
- Less space requirement
- Aesthetically more pleasing with grass-covered islands
- Reduce maintenance cost



Roundabout vs Signalized Intersection Design



Concept Development Process



Project Schedule

Timeline



3rd Community Survey

Your input is valued! Please complete and return.

- <https://www.surveymonkey.com/r/LS6SH2F>
- Email: jkang@sjheng.com
- Mail: Jing Kang, PE
SJH Engineering, P.C.
3700 Route 27, Suite 201
Princeton, NJ 08540



QUESTIONS?

THANK YOU!