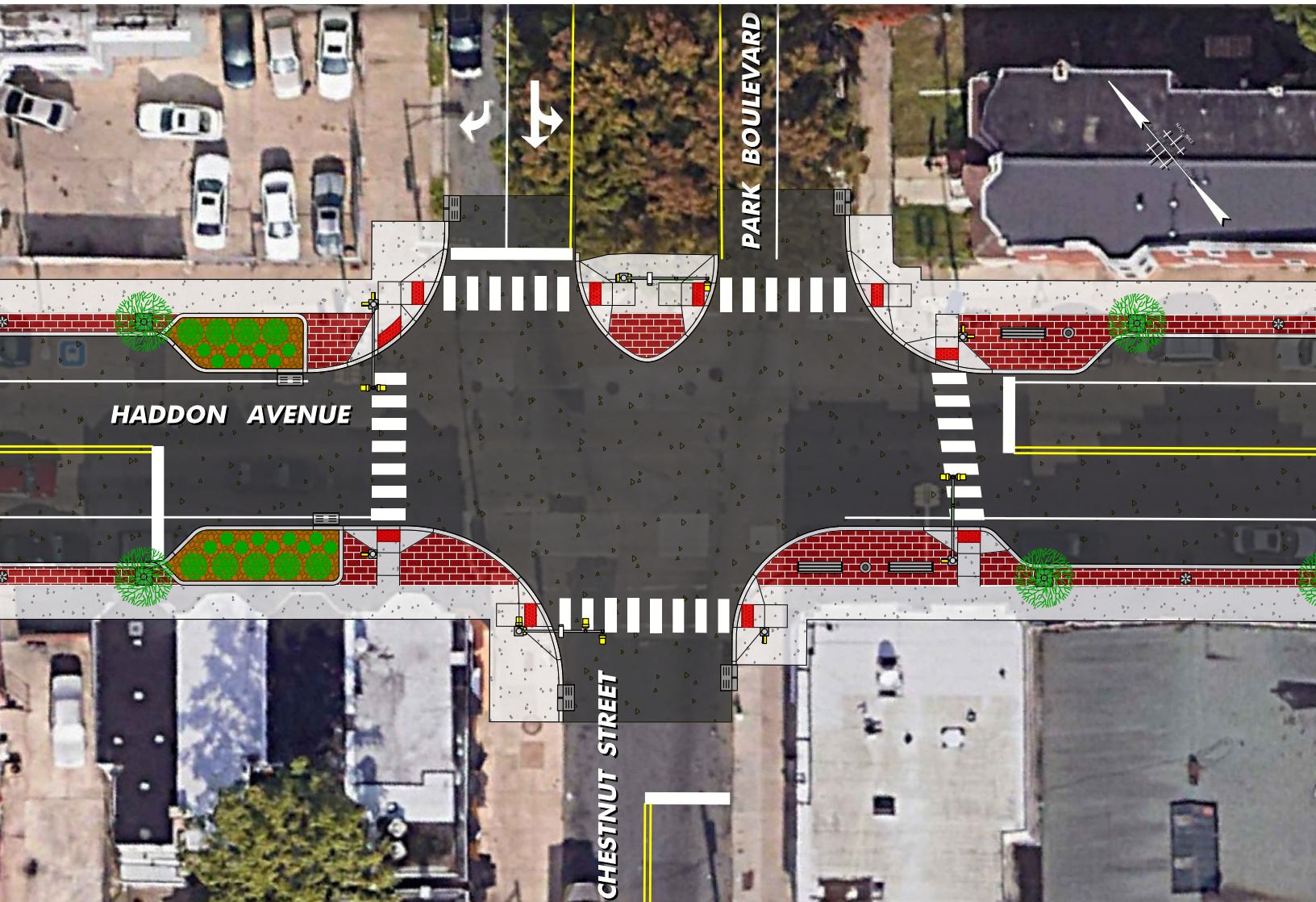


FINAL REPORT

CONCEPT DEVELOPMENT

Haddon Avenue Improvement Project Euclid Avenue to Newton Avenue City of Camden, Camden County



Submitted June 2020 by:

GPI

in association with:
KMA Consultant Engineers, Inc.
BANC3, Inc.
TechniQuest Corporation

Submitted to:

camden **county**
NEW JERSEY
Making It Better, Together.

Department of Public Works



COOPER'S FERRY
PARTNERSHIP
LIVE | WORK | INVEST | CAMDEN

Table of Contents

EXECUTIVE SUMMARY	1
I. INTRODUCTION	5
A. Foreword	5
B. Data Reviewed	5
C. Design Standards	7
D. Characteristics of the Roadways and Surrounding Area	7
E. Concept Development Scope Statement	8
F. CD Public Involvement Action Plan	8
II. PURPOSE AND NEED	9
A. Roadway Needs	9
B. Goals and Objectives	9
III. EXISTING INVENTORY AND CONDITION	9
A. Existing Bridge Inventory	9
B. Existing Roadway Inventory and Condition	9
1. Passing & Stopping Sight Distance	10
2. Horizontal Alignment	10
3. Vertical Alignment	10
4. Major Roadway Cross Section Elements	11
5. Clear Zone	12
6. Lighting	12
7. Signing	13
C. Existing Utilities	13
D. Drainage	13
E. Summary of Existing Deficiencies	14
F. List of Substandard Design Elements	14
G. Management Systems Input	14
H. Survey and Mapping	14
I. Available Plans and Tax Maps	15
IV. TRAFFIC AND CRASH SUMMARY	15
A. Traffic Operations	15
B. Traffic Data	15
C. Traffic Volume Forecasts	16
D. Crash Data Analysis and Crash Diagram	17
V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING	18
A. Cultural Resources	18
B. Section 4(f) Properties	18
C. Noise and Air Quality	18
D. Wetlands and Vernal Pools	19
E. Zoning and Land Use	19
F. Floodplains	20
G. Sole Source Aquifers	20
H. Threatened and Endangered Species	20
I. U.S. Fish and Wildlife	20

J. Stormwater Management and Water Quality	20
K. Hazardous Waste.....	21
L. Socioeconomics	21
M. Environmental Justice	21
N. Community Needs and Impacts	22
O. Surface Waters	23
P. Riparian Zones	23
Q. Tidelands	23
R. Well Head Protection Areas	24
S. Wild and Scenic Rivers.....	24
T. NJDEP Green Acres Program (GAP)	24
U. Registered Historic Sites and Districts.....	24
V. Soil Erosion and Sediment Control	24
W. Anticipated Environmental Permits or Approvals	24
1. Federal Permits/Approvals/Coordination.....	24
2. State Permits/Approvals/Coordination	25
X. Environmental Summary with Probable NEPA Document required	25
VI. EVALUATION OF ALTERNATIVES	25
A. Conceptual Alternatives	25
B. Traffic Analysis.....	27
C. Pavement Recommendation	28
D. Hydrology & Hydraulics Analysis	30
E. Right of Way Impacts and Review	30
F. Utility Impacts.....	30
G. ITS Facilities	31
H. Complete Streets Policy.....	31
I. Access Impacts and Review	32
J. Constructability and Staging Plans and Detour Plan	32
K. Controlling Substandard Design Elements and Reasonable Assurance	33
L. Construction Cost Estimate	33
M. Alternatives Matrix.....	33
N. Risk Analysis Summary	34
O. Discussions with Subject Matter Experts	34
VII. SELECTION OF PRELIMINARY PREFERRED ALTERNATIVE (PPA)	34
VIII. DESCRIPTION OF PPA	36
A. Geometrics	36
B. Pedestrian and Bicycle Compatibility	37
C. Pavement.....	37
D. Streetscape Elements	37
E. Transit Considerations.....	37
F. Drainage / Environmental	38
G. Utility Impacts.....	40
H. Right of Way and Access Impacts	40
I. Construction Staging	41
J. Cost Estimates	41

IX. PRELIMINARY ENGINEERING NEXT STEPS/TASKS	41
A. Schedule	41
B. Preliminary Engineering Scope Statement	41
X. CONCEPT DEVELOPMENT RECOMMENDATION	41
A. Interagency Review Committee (IRC) Coordination.....	41

List of Figures and Tables

Figure 1 – Alternative 1 Cross Section	2
Figure 2 – Alternative 2 Cross Section	2
Figure 3 – Alternative 3 Cross Section	3
Figure 4 – Project Location	5
Figure 5 – Project Surrounding Area	8
Figure 6 – Typical Existing Cross Section (N.T.S.).....	11
Figure 7 – Existing Cross Section under the DRPA/PATCO Rail Bridge (N.T.S.)	11
Figure 8 – Alternative 1 Cross Section	26
Figure 9 – Alternative 2 Cross Section	26
Figure 10 – Alternative 3 Cross Section	27
Figure 11 – Camden County HMA Pavement Standard Detail	30
Figure 12 – Existing and Future Planned Trails.....	32
Figure 13 – Total Online Survey Results	35
Figure 14 – Total PIC Votes.....	35
Figure 15 – PPA Cross Section	36
Table 1 – Data Reviewed	6
Table 2 – Horizontal Curves	10
Table 3 – Vertical Curves	11
Table 4 – Substandard SSD at Non-Signalized Intersections	14
Table 5 – Summary of Intersection Level of Service (LOS), 2018 Existing Conditions.....	15
Table 6 – Summary of Intersection Level of Service (LOS), 2045 No-Build Conditions.....	17
Table 7 – Crash Summary	17
Table 8 – Sensitive Receptors.....	19
Table 9 – Community Facilities.....	22
Table 10 – Summary of Intersection Level of Service (LOS), 2045 Build Conditions.....	27
Table 11 – Alternatives 1 and 2 Right of Way Impacts.....	30

Appendices

- A. Purpose and Need Statement
- B. List of Existing Documentation Collected
- C. Design Communication Report
- D. Collision Diagrams
- E. Traffic Data and Flow Diagram
- F. Aerial Photography
- G. Straight Line Diagrams
- H. Environmental Screening
- I. Public Involvement Action Plan and Outreach Summary
- J. Resolutions of Support
- K. Conceptual Alternatives
- L. Alternatives Analysis
- M. Alternatives Matrix
- N. Reasonable Assurance of Controlling Substandard Design Elements
- O. Preliminary Cost Estimates
- P. Conceptual Plans for PPA
- Q. County and NJDOT Correspondence
- R. Preliminary Engineering Scope Statement
- S. Complete Streets Checklist
- T. Compact Disk
 - Available Plans (Appendix B)
 - Utility Log, Utility Verification Responses and Plans
 - Community Profile
 - Tax Maps
 - Existing Timing Directives
- U. Categorical Exclusion Document Project Description/Purpose and Need

EXECUTIVE SUMMARY

The purpose of this Concept Development (CD) study was to develop and evaluate alternatives to reconstruct Haddon Avenue from Euclid Avenue to Newton Avenue, making Haddon Avenue safer for pedestrians, bicyclists, transit users and motorists; improving traffic flow through the area; bringing the infrastructure to a state of good repair; and establishing a foundation for redevelopment of the Camden neighborhoods of Parkside, Whitman Park, Gateway and Lanning Square.

In recent years, improvements have been made to Haddon Avenue south of Euclid Avenue, in the vicinity of Our Lady of Lourdes Medical Center, as well as north of Pine Street, in the vicinity of the I-676 overpass and Cooper University Hospital. This study is intended to develop alternatives to close the gap between improvements to the north and the south. Of note, improvements to Haddon Avenue from Pine Street to Newton Avenue were completed during the development of this study.

A major goal for alternative development was bringing the pavement, traffic signals, signing and pavement markings to a state of good repair. Another major goal for alternative development was to provide reasonable pedestrian and bicycle accommodations in accordance with the City of Camden and Camden County's Complete Streets Policies and in line with the City's vision for the redevelopment of Haddon Avenue. Streetscape elements and green infrastructure were also considered in the development of alternatives. The existing sanitary and stormwater infrastructure within the study limits is a combined, brick sanitary/storm sewer system. Any project(s) emanating from this study should include the separation of the combined sewer system and repair/replacement of the existing combined sewer system within the limits of this study. Camden County is working with CCMUA and the City of Camden regarding the cost benefit ratios for separation of combined sewer system within the City of Camden, including Haddon Ave.

Pavement in the study area is in poor condition. It consists of a deteriorated patchwork of concrete slabs with numerous asphalt and concrete pavement repair patches. The existing traffic signal equipment, signing and pavement markings are outdated and not compliant with the Manual on Uniform Traffic Control Devices (MUTCD). Pedestrian curb ramps and pushbuttons are not compliant with the Americans with Disabilities Act (ADA). Pedestrian and bicycle safety accommodations are lacking. A significant overrepresentation of pedestrian and bicycle crashes occurred within the study limits.

This CD study performed an extensive inventory of the area including roadway infrastructure condition and identification of substandard geometry. The inventory also included identification of utilities, right-of-way and jurisdiction limits. Existing traffic conditions were assessed, and forecasts were developed to analyze alternatives for operation during the design year of 2045. Crash data was compiled and assessed to identify locations of concern. An environmental screening was performed to identify potential areas of concern that may affect the development of alternatives. No environmental "fatal flaws" were identified.

A robust public outreach plan was implemented to gather initial input from the community prior to alternative development and to present alternatives for input and indication of support. Outreach was performed through multiple methods, including public meetings, paper surveys and on-line surveys. On-line and paper surveys were provided in both English and Spanish languages.

Based on the project goals, assessment of existing conditions, and input from the community, three alternatives were developed and considered along with a no-build alternative.

Alternative 1 provides a slightly widened sidewalk, approximately one (1) foot, on each side of Haddon Avenue. It also provides for other pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. Alternative 1 does not provide dedicated bicycle lanes or bicycle markings on the travel lanes. Bicycle markings could be provided if supported by the community.

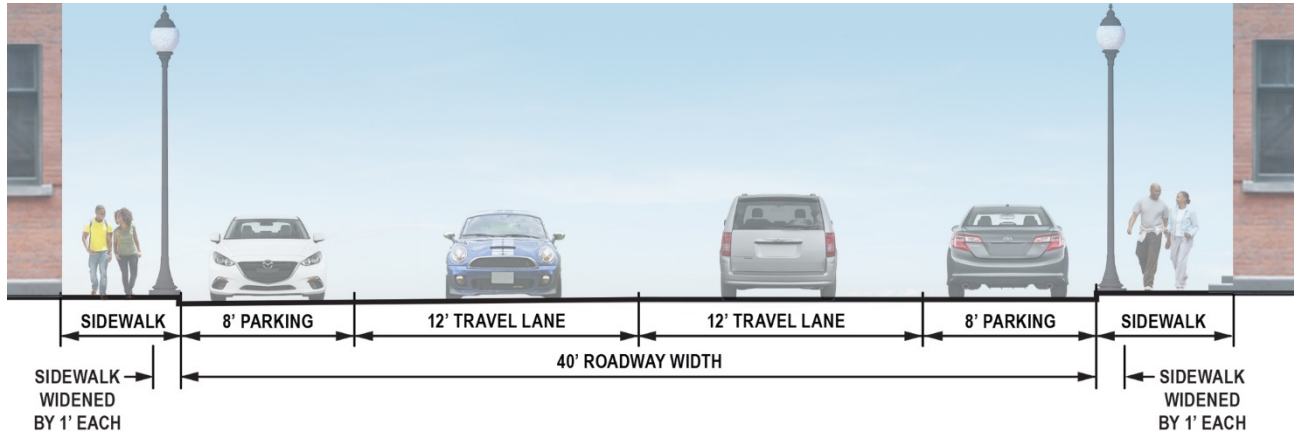


Figure 1 – Alternative 1 Cross Section

Alternative 2 maintains the existing sidewalk widths, but similar to Alternative 1, provides for pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. Alternative 2 provides a five (5)-foot wide bicycle lane along the northbound/westbound direction and a seven (7)-foot wide bicycle lane along the southbound/eastbound side of Haddon Avenue.

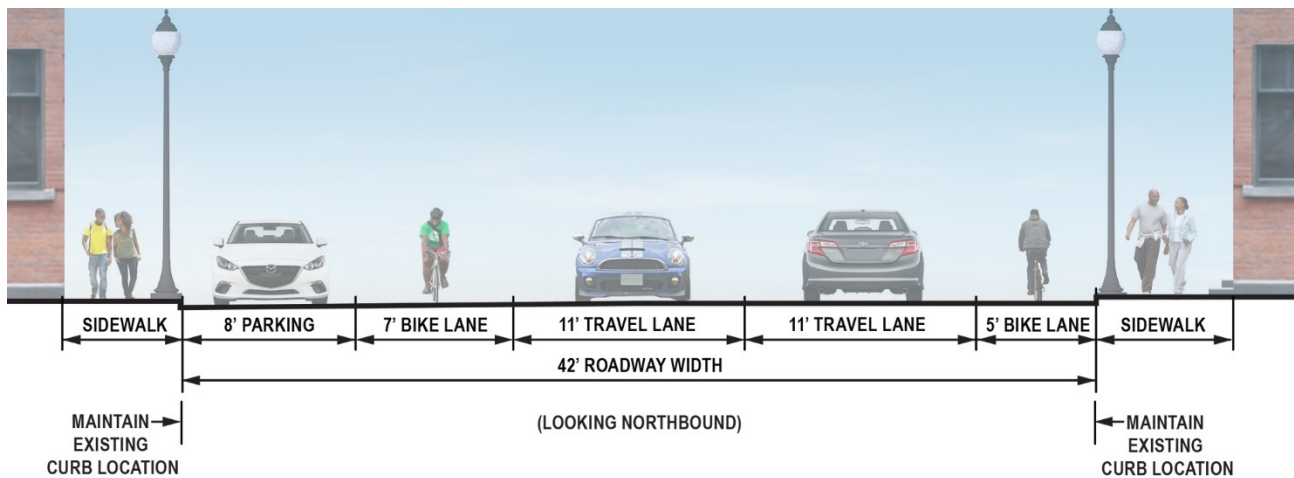


Figure 2 – Alternative 2 Cross Section

Alternative 3 also maintains the existing sidewalk width and provides for pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. It also provides a two-way, 12-foot wide two-way bicycle lane in the southbound/eastbound direction with an adjoining three (3)-foot wide buffer zone separating the travel lanes and the bicycle lane. However, on-street parking is eliminated.

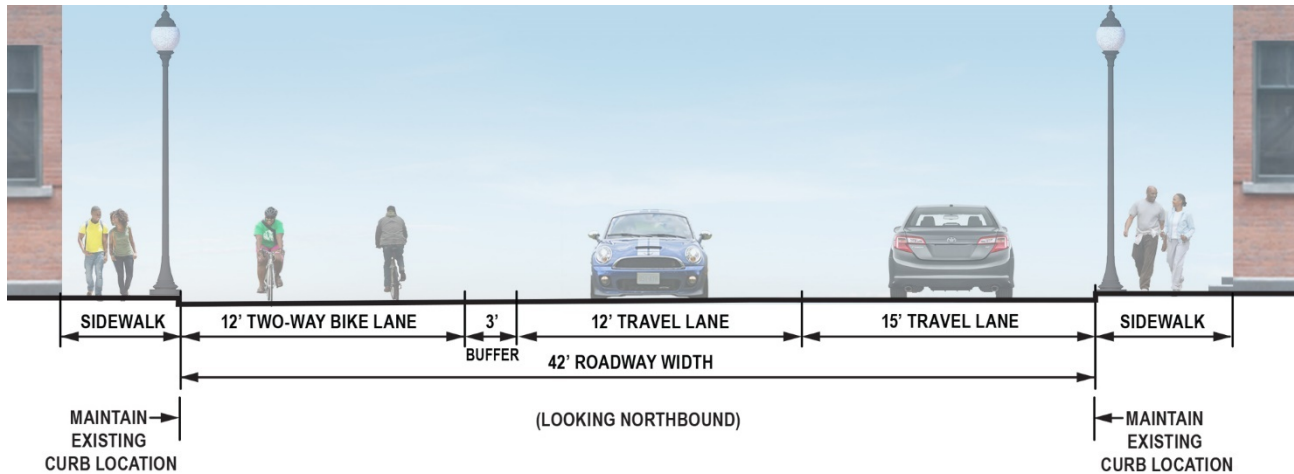


Figure 3 – Alternative 3 Cross Section

The three alternatives were presented to project stakeholders on February 27, 2019 at the Camden County Historical Society. A Public Information Center (PIC) followed on April 2, 2019.

At the PIC, a number of hardcopy surveys were made available to attendees for their completion at the PIC or to take with them. Based on comments at the PIC, the survey was modified to provide specific questions related to support of specific street amenities such as benches, trash receptacles and bicycle racks. As of April 19, 2019, 121 responses to the survey were received, most through the on-line survey application. Nearly 50% of those surveyed preferred Alternative 1. Approximately 20% preferred Alternative 2 and approximately 7% preferred Alternative 3. Approximately 12% did not select an alternative from the choices; however, approximately five of these respondents did tend to indicate a preference in their comments. These indications do not have any substantive impact on the results.

Another in-person survey of alternatives selection was conducted at the PIC. Attendees were provided with stickers to attach to their preferred alternative. 35 of the 43 attendees participated in this exercise. Of the 35 participants, 26 (or 74%) selected Alternative 1. Nine (9) participants (or 26%) selected Alternative 2. None of the participants selected Alternative 3.

Based on input received from Camden County officials, Camden City officials, Cooper's Ferry Partnership, the City of Camden Stakeholder Groups including the Parkside Business Community in Partnership, the Haddon Avenue Business Association, and the public, the selected Preliminary Preferred Alternative (PPA) is Alternative No. 1.

The PPA proposes to maintain the existing alignment of Haddon Avenue. The cross section consists of a 12-foot wide lane with adjoining 8-foot wide parking in each direction of Haddon Avenue.

It should be noted that it was suggested at the July 23rd, 2019 NJDOT Subject Matter Expert meeting that additional widening of the sidewalk should be considered using a proposed cross section of either a 10-foot wide or 11-foot wide travel lane with adjacent 8-foot wide parking in each direction. Sidewalks on each side of the road could then be widened up to two (2) or three (3) feet depending on the selected lane width. It was agreed that this alternative would be further investigated in Preliminary Engineering.

Curb extensions will be implemented at signalized intersections, where feasible, and they will be designed to accommodate local fire department trucks and NJ Transit buses.

Under the PPA, sidewalks on each side of the roadway will be widened up to one (1) foot. Curb ramps and pedestrian pushbuttons will be brought into compliance with the ADA. Vehicular and pedestrian signals, signing, and pavement markings, including crosswalks, will be upgraded to meet current MUTCD requirements.

Due to the limited width of the roadway and the desire to maintain parking on both sides of Haddon Avenue, no bicycle lanes will be implemented. The Parkside Trail, which runs parallel to the Cooper River and Haddon Avenue between Pine Street and Kaighn Avenue near its intersection with Euclid Avenue, serves as an available bicycle route in the community.

The PPA proposes removal of the existing concrete roadway and the construction of a full depth Hot Mix Asphalt (HMA) section for this project in accordance with Camden County Development Regulations. However, alternative pavement designs will be assessed during Preliminary Engineering.

The PPA provides opportunities for green infrastructure, street trees, street furniture and decorative street lighting. Camden County prefers the use of single, pole mounted luminaire decorative lighting as currently installed at the Haddon Avenue Gateway Project and at the intersection of Haddon Avenue and Kaighn Avenue.

NJ Transit expressed a desire to provide bus boarding and alighting from or to a raised sidewalk rather than street level. In all conceptual alternatives, boarding or alighting from or to raised sidewalks is accommodated. NJ Transit also noted the idea of incorporating “bus bulbs” in the design of the project. A bus bulb is an elongated curb extension at a bus stop location. Buses would not have to pull into bus turn-outs, therefore speeding the boarding/ alighting process. Future traffic conditions considering bus bulbs were analyzed and the analysis indicates that bus bulbs could be accommodated without significant impacts on traffic flow.

Regarding environmental permitting, the PPA does encroach upon a tidal NJDEP Flood Hazard Area (FHA) of the Delaware River. Since the project exceeds the one-acre threshold for permanent disturbance and is considered a “major development,” the project is not eligible to use any FHA Permits-by-Rule and will require an FHA Individual Permit.

The total construction cost estimate of the PPA, including construction staging and traffic control, is approximately \$20.4 million. Should the CSO efforts be performed separately, this cost would decrease by approximately \$4 million, to \$16.4 million.

The following are the anticipated start dates and estimated funding needs for the subsequent stages of this project:

Project Delivery Phase	Anticipated Start Date (Fiscal Year)	Estimate
Concept Development	<i>Complete Winter 2019</i>	\$239,000
Preliminary Engineering	Spring 2020	\$750,000
Final Design	Summer 2021	\$1,000,000
Construction	Spring 2022	\$20,384,000

I. INTRODUCTION

Haddon Avenue (County Route 561) Improvement Project, Euclid Avenue to Newton Avenue Concept Development Study

Camden County Department of Public Works – Kevin Becica, P.E., County Engineer

Coopers Ferry Partnership – Kathy Cullen, Program Manager

A. Foreword

The Camden County Department of Public Works performed this Concept Development (CD) Study for the improvement of this 1.13-mile long section of Haddon Avenue (CR 561) between Euclid Avenue (milepost 49.54) and Newton Avenue (CR 604) (milepost 50.67). Hereinafter, Haddon Avenue refers to Haddon Avenue within these study limits. A location map indicating the project limits is provided in Figure 1 below. This report summarizes the findings of the CD Study. Copies of the NJDOT Straight Line Diagrams for Haddon Avenue (CR 561) within the study's limits are included within Appendix G.



Figure 4 – Project Location

B. Data Reviewed

During the data collection phase of this study, various sources were consulted to obtain information on the existing conditions in the study area. This information was evaluated to determine areas of non-conformance with current design standards and to also form the base data for use in the development of alternatives. For this project, the information in Table 1 was available for review.

Copies of the available plans, utility log, utility verification responses and plans, community profile, tax maps and existing timing directives can be found in Appendix T which is on a compact disk attached to this report.

Table 1 – Data Reviewed

Data	Source	Date ¹
Camden Urban Land Institute Report	Camden County	Jun 2004
Community Based Green Infrastructure for the City of Camden	Rutgers University	Nov 2011
Parkside Neighborhood Revitalization Plan 2017	Camden County	Apr 2017
Camden County 2017 Highway Master Plan Update	Camden County	May 2017
Pavement Design Alternatives Report for Erial Clementon Road (CR 703) from Erial-New Brooklyn Road (CR 706) to Blackwood Clementon Road (CR 534)	Camden County	Feb 2015
Camden County Highway Plan	DVRPC	Mar 2015
City of Camden Access Study	DVRPC	Mar 2018
Camden Waterfront Neighborhood Development Initiative Transportation Improvement Report	Cooper's Ferry	Jun 2017
Haddon Avenue (CR 561) Roadway Improvements - Phase I from Euclid Avenue to Vesper Boulevard Plans	Camden County	Jul 2014
CR561 Haddon Avenue Gateway Project, Intersection of Haddon Avenue, Mt. Ephraim Avenue, Pine Street and Line Street Plans	Camden County	Apr 2015
Haddon Avenue (CR 561) Transit Village Roadway Improvements Phase II from Vesper Boulevard to Old White Horse Pike (CR 606A) Plans	Camden County	Jul 2015
Construction Plans for the Mill and Overlay of Berlin Road Between White Horse Road (CR 673) and Linden Avenue (CR 700)	Camden County	Feb 2017
Station Avenue & Atlantic Avenue Pedestrian Improvements	Camden County	May 2018
Progress Report #1-4 for Concrete Slab Replacement, Federal Street (CR 537) Roadway Improvements, From 19th Street to Marlton Pike (CR 601)	Camden County	Dec 2018
Haddon Avenue Sewer Inspection Report	Camden County	Nov 2017
Haddon Avenue Sewer and Water Maps	Camden City	Various
Systems Characterization Report, Camden County Municipal Utilities Authority (CCMUA), City of Camden, City of Gloucester	Camden County	Jan 2019(r)
CCMUA CSO (Combined Sewer Overflow) LTCP Asset Map and Sewersheds in Camden City	Cooper's Ferry	Nov 2016
Camden County Development Regulations	Camden County	Feb 2017(r)
City of Camden Tax Maps	Camden City	Various
City of Camden Signal Timing Directives	Camden City	Various
Camden County Standard Hot Mix Asphalt Pavement Detail	Camden County	Mar 2014
Circuit Trails Plan, The Camden Greenway, Camden, NJ	Cooper's Ferry	Jan 2016

¹ (r) indicates revision date.

Data	Source	Date ¹
Camden City Fire Department Truck Specifications	Camden County	Jan 2019
SEPTA Bus Stop Design Guidelines – Curb Extension Details	SEPTA	Not Dated
PSE&G Lighting Service Agreement and Cost Summary for Lanning Square Gateway	Camden County	Apr 2017
Walter Rand Transportation Center Rider Guide, Bus Routes Map	NJ Transit	May 2019

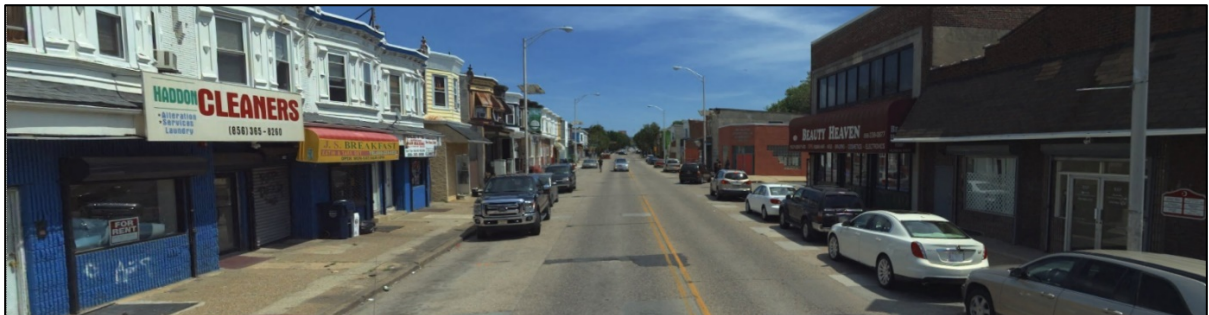
C. Design Standards

The following design standards were utilized in the analysis of the existing conditions and deficiencies within the project area and in the development of the alternatives for this project. The abbreviated title used throughout this report is noted in parentheses.

1. *AASHTO Policy on Geometric Design of Highways and Streets* (AASHTO), 2011;
2. *AASHTO Roadside Design Guide* (RDG), 2011;
3. *NJDOT Roadway Design Manual*, 2015;
4. *NJDOT Design Exception Manual*, 2012;
5. *Highway Capacity Manual* (HCM) – Transportation Research Board, 2016;
6. *Manual on Uniform Traffic Control Devices* (MUTCD) – FHWA, 2009;
7. *NJDOT Standard Specifications for Road and Bridge Construction*. 2007;
8. *AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities*;
9. *AASHTO Guide for Planning, Design, and Operation of Bicycle Facilities*;
10. *NATCO Urban Street Design Guide*
11. *State of New Jersey Complete Streets Design Guide*, 2017
12. *City of Camden and County of Camden Complete Streets Policies*

D. Characteristics of the Roadways and Surrounding Area

Haddon Avenue is an urban minor arterial south of Mt. Ephraim Avenue and an urban principal arterial north of Mt. Ephraim Avenue. The existing roadway cross-section for Haddon Avenue throughout the project limits consists of one 12-foot wide travel lane in each direction with adjoining 9-foot wide parking on each side of the road. The posted speed limit is 25 mph and the roadway is under the jurisdiction of Camden County. Sidewalk of variable width exists on each side of the road. The right-of-way width is 66 feet. I-676 and DRPA/PATCO Rail pass over Haddon Avenue immediately north of Mt. Ephraim Avenue. Seven (7) signalized and eleven (11) unsignalized intersections exist within the study limits. The adjacent land use is a mix of residential and business/commercial use. Limited off-street parking exists within the project limits.



Haddon Avenue has long served as a major transportation artery connecting downtown Camden to the surrounding neighborhoods and outlying towns. Haddon Avenue originated as an early Indian trail, then evolved into an important colonial turnpike, and later became the alignment of Camden's first trolley line extension to the Parkside neighborhood. Often referred to as the "Medical Mile," Haddon Avenue not only provides access to Cooper University Hospital and Our Lady of Lourdes Medical Center, this key connector also provides access to the Walter Rand Transportation Center, the Ferry Avenue PATCO Station, the Camden County Police Department, Campbell Soup Company Headquarters, Subaru of America Headquarters, as well as a significant number of businesses in downtown Camden and in the surrounding area. Haddon Avenue also serves the Camden neighborhoods of Parkside and Whitman Park. Parkside lies to the northeast of Haddon Avenue and Whitman Park to Haddon Avenue's southwest.



Figure 5 – Project Surrounding Area

E. Concept Development Scope Statement

A CD Scope Statement was not prepared for this project.

F. CD Public Involvement Action Plan

A Public Involvement Action Plan (PIAP) was prepared and submitted for final approval in October 2018. It is provided in Appendix I.

II. PURPOSE AND NEED

The purpose of this project is to reconstruct Haddon Avenue from Euclid Avenue to Newton Avenue, making Haddon Avenue safer for pedestrians, bicyclists, transit users and motorists; improving traffic flow through the area; bringing the infrastructure to a state of good repair; and establishing a foundation for redevelopment of the Camden neighborhoods of Parkside, Whitman Park, Gateway and Lanning Square.

A. Roadway Needs

Pavement in the study area is in poor condition. It consists of a deteriorated patchwork of concrete slabs with numerous asphalt or concrete pavement repair patches and strips throughout. The existing traffic signal equipment, signing and pavement markings are outdated and not compliant with the MUTCD. Pedestrian curb ramps and pushbuttons are not compliant with the Americans with Disabilities Act (ADA). Pedestrian and bicycle safety accommodations are lacking, and the project limits exhibit a significant overrepresentation of pedestrian and bicycle crashes.

B. Goals and Objectives

It is the goal of this project to reconstruct Haddon Avenue, bringing the pavement, traffic signals, signing and pavement markings to a state of good repair. It is also the goal of this project to provide reasonable pedestrian and bicycle accommodations in accordance with the City of Camden and Camden County's Complete Streets Policies and in line with the City's vision for the redevelopment of Haddon Avenue. Streetscape elements and green infrastructure have also been considered in the development of the Preliminary Preferred Alternative (PPA). Given that the existing sanitary and stormwater infrastructure within the project limits is a combined, brick sanitary/storm sewer system, this project will seek to provide for the separation of the combined sewer system and repair/replacement of the existing combined sewer system within the study limits.

The project Purpose and Need Statement can be found in Appendix A.

III. EXISTING INVENTORY AND CONDITION

A. Existing Bridge Inventory

Two bridges exist within the project limits. They carry I-676 and DRPA/PATCO Rail over Haddon Avenue immediately north of Mt. Ephraim Avenue. This study does not anticipate impacting either of these bridges. However, it was noted through the course of CD that the vertical clearance under both structures is substandard. In addition, the existing piers of the DRPA/PATCO Rail Bridge suffer substandard horizontal clearances and lack adequate protection. Camden County has a planned project to replace the guiderail protecting the center pier anticipated to be completed in summer 2020.

B. Existing Roadway Inventory and Condition

Design elements are inherently based on traffic volumes and design speed. The posted speed limit along Haddon Avenue is 25 mph. Thus, according to AASHTO guidelines the design speed is 30 mph. With the exception of the section of Haddon Avenue between Newton Street and Pine Street, the horizontal alignment used in our analyses was developed based on a best fit geometry of the centerline using CADD software. The section of Haddon Avenue between Newton Street and Pine Street was recently realigned as part of the Haddon Avenue Gateway Project. The entire vertical

alignment of Haddon Avenue was also developed based on a best fit geometry of the roadway surface along the centerline of the roadway using CADD software.

1. Passing & Stopping Sight Distance

According to Tables 3-1 and 3-4 of AASHTO, respectively, the minimum stopping sight distance and passing sight distance for a design speed of 30 mph are 200 feet and 500 feet. There are currently no permitted passing zones on Haddon Avenue within the limits of this project and none are anticipated for any of the proposed alternatives. Based on a review of the as-built plans and field observations, the horizontal and vertical stopping sight distances along Haddon Avenue within the project limits appear to be in conformance AASHTO.

Limited stopping sight distance is a controlling substandard design element on one or more of the approaches at the unsignalized intersections of Whitman Avenue, Bradley Avenue, Liberty Street, Sycamore Street, Spruce Street, Division Street, and Mt. Ephraim Avenue.

Further details on limited stopping sight distance within the project limits and other substandard design elements can be found in Section III.F.

2. Horizontal Alignment

Since as-built plans were not available, a best fit alignment was created using the survey collected during CD with the exception of the section of Haddon Avenue between Newton Street and Pine Street, for which an alignment was available. Haddon Avenue follows a generally tangent alignment and has a right-of-way width of 66 feet. The smallest mainline radius is 600 feet at the intersection with Mt. Ephraim Avenue. The Horizontal Sightline Offset (HSO) for this radius with a 5-foot centerline offset is 8.46 feet, which is not encumbered at any point throughout this radius. The following table lists the horizontal curves within the project limits along Haddon Avenue.

Table 2 – Horizontal Curves

Milepost Limits	PC Station	PT Station	Curve Length (ft)	Radius (ft)
49.92 - 49.93	36+72.42	37+43.85	71.43	1240.00
50.09 - 50.11	46+02.35	46+88.79	86.44	20000.00
50.50 - 50.53	7+18.81	8+64.65	145.84	600.00
50.65 - 50.68	75+39.01	76+97.94	158.93	20000.00

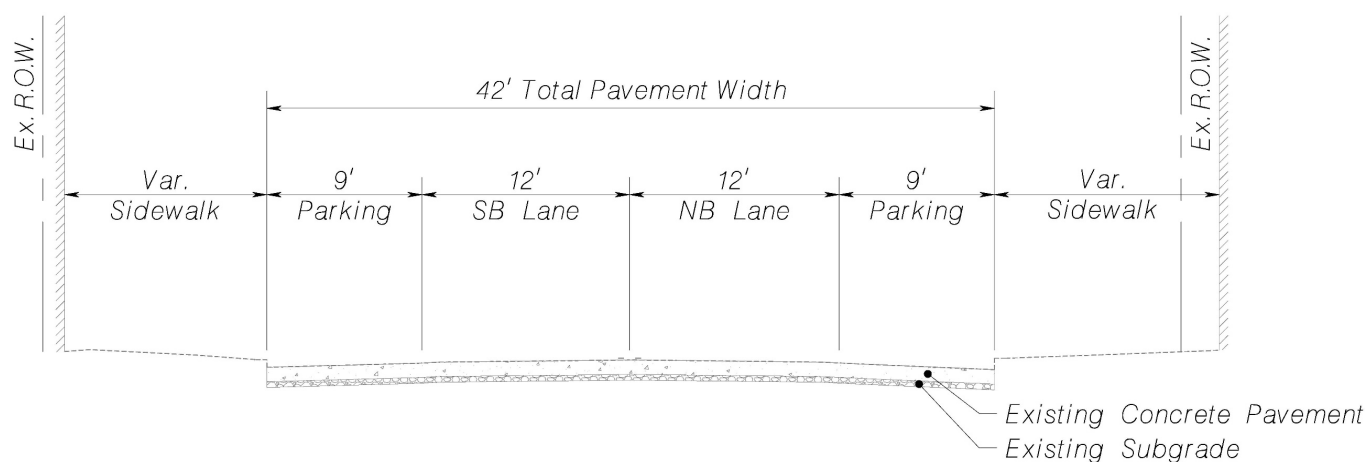
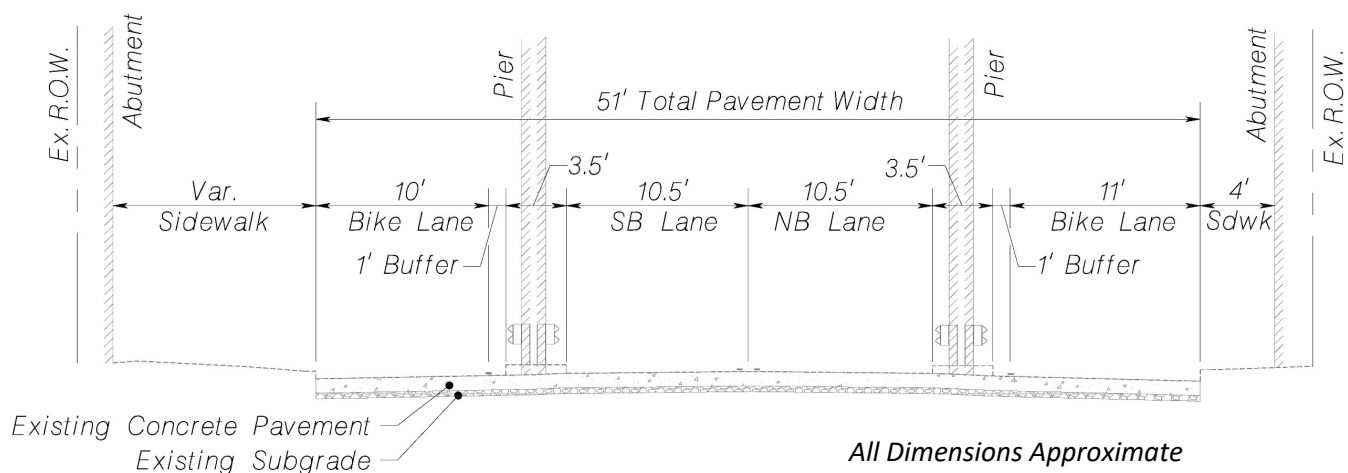
3. Vertical Alignment

Since as-built profiles were not available, a best fit profile was created using the survey collected during CD to match the existing ground elevations. All calculated vertical curves met the minimum stopping sight distance required for Haddon Avenue. The following table lists the vertical curves within the project limits along Haddon Avenue

Table 3 – Vertical Curves

Milepost Limits	PVI Station	Curve Type	A (%)	L (ft)	K
49.66 - 49.76	20+51.50	Crest	1.44	500.00	347.19
49.80 - 49.86	26+91.39	Crest	1.24	300.00	241.45
49.92 - 50.08	35+74.52	Sag	1.42	800.00	565.00
50.21 - 50.23	47+28.67	Sag	0.98	100.00	101.96
50.29 - 50.30	51+32.92	Sag	0.75	100.00	132.79
50.44 - 50.51	60+92.21	Crest	1.72	400.00	232.63
50.62 - 50.64	68+94.56	Sag	0.99	100.00	101.45

4. Major Roadway Cross Section Elements

**Figure 6 – Typical Existing Cross Section (N.T.S.)****Figure 7 – Existing Cross Section under the DRPA/PATCO Rail Bridge (N.T.S.)**

a) Lane Widths

The existing lane width along Haddon Avenue within the study limits is 12 feet (see Figure 6), except for the 140-foot section of roadway underneath the DRPA/PATCO Rail Bridge where 10-foot lanes are provided due to the bridge piers (see Figure 7). The lane widths meet or exceed the minimum 10-foot width per AASHTO but do not meet the minimum 11-foot lane width preferred by NJ Transit for accommodation of buses. However, AASHTO Section 7.3.3 states that 10-foot lanes can be used with relatively low bus and truck traffic and speeds below 35 mph.

b) Shoulder Widths

No marked shoulders are present along Haddon Avenue within the project limits. Pavement beyond the traveled way is utilized for on-street parking. This condition does not meet the minimum width of eight (8) feet per Table 7-3 of AASHTO for an arterial street with design volume over 2,000 vehicles per day.

c) Superelevation

Superelevation is not provided along the curves identified in Table 2. However, according to Section 7.3.2 of AASHTO, low-speed, curbed urban arterial streets such as Haddon Avenue are usually not superelevated. Therefore, the existing normal crown section within the project limits is not considered substandard for any of the existing horizontal curves.

d) Cross Slope

Based on survey information collected during CD, the Haddon Avenue roadway and shoulder cross slopes varies throughout its length. AASHTO states that the minimum plane cross slope for travel lanes and shoulders should be 1.5 percent and 2.0 percent, respectively.

5. Clear Zone

The clear zone is defined as the area starting at the edge of the traveled way that is available for safe use by errant vehicles. The width of the clear zone varies with speed, traffic volume, roadside slope and horizontal roadway alignment. Based on a design speed of 30 mph, as well as an ADT over 6,000 vehicles, the range of the existing clear zone for Haddon Avenue is between 14 and 16 feet. Currently, many of the buildings lining Haddon Avenue are within the clear zone. Other obstructions at the edge of the travel lane include utility poles, fire hydrants, street trees, and parked cars.

6. Lighting

Between Euclid Avenue and Wildwood Avenue a mix of single pole top mounted decorative lighting and aluminum lighting pole arm mounted cobra-head fixtures is present along both sides of Haddon Avenue. From Wildwood Avenue to Newton Avenue aluminum lighting pole or wood utility pole arm mounted cobra-head fixtures are present along both sides of Haddon Avenue with the exception of the area below the I-676 overpass which has abutment mounted underdeck lighting. North of Newton Avenue, decorative cantilever lighting is present along both sides of Haddon Avenue. A lighting warrant and illumination analysis was not performed to verify if the existing lighting meets the illumination requirements of AASHTO and Section 11 of the NJDOT-RDM. However, based on our visual assessment, the existing lighting does not appear to be in

conformance with AASHTO and/or NJDOT requirements. A lighting warrant analysis and, if applicable, an illumination analysis of the proposed roadway and sidewalks should be performed during Preliminary Engineering (PE).

7. Signing

Numerous existing regulatory and warning signs are not in conformance with the most recent edition of the MUTCD. A sign inventory should be conducted during PE. The inventory will evaluate all signs relative to their condition, conformance with the MUTCD, and the NJDOT Standard Details.

C. Existing Utilities

GPI prepared and distributed a Utility Verification Letter, which requested information of existing and/or proposed facilities within the project limits and the name, address and telephone number of the appropriate contact, to those utilities that have facilities within the project limits. Based on information provided to date, the following utility providers have facilities, both aerial and underground, within the study limits.

- Electric – Public Service Electric & Gas (PSE&G)
- Gas – PSE&G
- Telephone – Verizon
- Cable – Comcast
- Water – City of Camden
- Sewer – City of Camden, Camden County Municipal Utility Authority (CCMUA)
- Communication Fiber – ATT (Core), Crown Castle, Verizon Business (MCI), Sprint, Zayo

Letter responses and the utility plans can be found on the attached compact disk.

The sewer facilities within the project limits are a combined sanitary/storm sewer overflow system (CSO). The existing system is composed of brick-lined, terra-cotta, and PVC pipe sections.

D. Drainage

Currently, storm sewer inlets exist along both sides of Haddon Avenue. Most of the time, the CSO successfully transports the sanitary and storm water to the CCMUA's treatment plant. However, during periods of heavy rainfall or snowmelt, the system becomes overwhelmed, causing untreated wastewater to overflow into the Cooper River via one of the City's twenty-two active combined sewer outfall locations. Camden County is working with CCMUA and the City of Camden regarding the cost benefit ratios for separation of combined sewer system within the City of Camden, including Haddon Ave. With the assumption of separation within the project limits, the stormwater system would be separated from the sanitary system beginning at the most upstream pipe section of the existing CSO within the project limits. The stormwater system will run parallel and in the same direction of flow as the sanitary system and will eventually re-combine with the existing CSO at each point that it leaves the project limits. During PE, a hydraulic analysis of the system's ability to accommodate the parallel storm drainage system at the confluence with the existing CSO "pinch point" will be necessary to assure that no adverse impacts are created on downstream properties. For example, sanitary sewer backing up into basements during high storm flows.

E. Summary of Existing Deficiencies

Pavement condition in the study area is poor. The pavement is deteriorated and consists of a patchwork of concrete slabs with numerous concrete and asphalt pavement repair strips throughout. The traffic signal equipment, signing and pavement markings are outdated and not compliant with the MUTCD. Pedestrian curb ramps and pushbuttons are not compliant with ADA requirements. Pedestrian and bicycle safety accommodations are lacking. It is anticipated that stormwater and sanitary sewer improvements will need to be made due to the pavement and sidewalk improvements. Given the CSO infrastructure's age within the project limits, this project may provide for replacement and separation of the same.

F. List of Substandard Design Elements

- Stopping sight distance (SSD) at several non-signalized intersections.

Table 4 – Substandard SSD at Non-Signalized Intersections

INTERSECTION	MP	APPROACH	CONTROL	ISD REQ. (ft)	ISD AVAIL. (ft)	SSD REQ. (ft)	LIMITING OBSTRUCTION
Whitman Ave	49.59	EB	Stop Sign	335	171	200	Roadside Parking
Bradley Ave	49.75	WB	Stop Sign	335	70	200	Roadside Parking
Liberty St	49.85	EB	Stop Sign	335	140	200	Roadside Parking
Sycamore St	50.03	EB	Stop Sign	335	82	200	Roadside Parking
Spruce St	50.35	EB	Stop Sign	335	119	200	Roadside Parking
Division St	50.39	EB	Stop Sign	335	94	200	Roadside Parking
Mt. Ephraim Rd	50.52	WB	Stop Sign	335	86	200	Rail Structure Pier

- Cross slopes of lanes and shoulders
- Shoulder width
- Vertical clearance under the structures carrying I-676 (Structure No. 0430-151) and the DRPA/PATCO rail tracks over Haddon Avenue.

G. Management Systems Input

Since Haddon Avenue is not a State roadway, Management System data was not available.

H. Survey and Mapping

GPI's subconsultant, BANC3 obtained and provided deliverables of new color digital ortho aerial photography, analytical triangulation digital terrain model (DTM) and topographic mapping with one-foot contours at 1" = 30' scale in AutoCAD electronic format. The aerial mapping extends along Haddon Avenue from Euclid Avenue to Newton Avenue with a total swath area of 175 feet to ensure 50 feet of coverage extents at each of the intersections. The base mapping features include, but are not limited to; buildings, land use types (pavement/concrete/grass), trees, drainage structures, utility poles, hydrants, valves, traffic signals, lighting, junction boxes, fences, and curbing. Subsurface utilities, other than sewer and drainage pipes, were estimated based on requested available utility company mapping and included on the project base mapping. BANC3 also obtained inlet and manhole

rims, grates and inverts along Haddon Avenue. The right of way shown on the project base mapping was obtained from available tax maps.

I. Available Plans and Tax Maps

Available plans and tax maps are listed in Table 1. As-built plans, jurisdictional maps and right of way plans were not readily available. A list of the available plans can be found in Appendix B, and any available plans can be found in Appendix T – Compact Disk.

IV. TRAFFIC AND CRASH SUMMARY

A. Traffic Operations

Haddon Avenue is a two lane, urban minor arterial with a 25-mph posted speed limit. Haddon Avenue forms signalized intersections with Gwen Faison Avenue/Lansdowne Avenue, Atlantic Avenue, Kaighn Avenue (CR 607), Chestnut Street/Park Boulevard, Walnut Street, Pine Street, and Newton Avenue (CR 604). Haddon Avenue forms unsignalized intersections with Crestmont Street, Whitman Street, Bradley Avenue, Mechanic Street, Liberty Street, Wildwood Avenue, Sycamore Street, Mt. Vernon Street, Spruce Street, Division Street and Mt. Ephraim/Line Street.

The following table summarizes the existing overall intersection Level of Service (LOS) and delay in seconds for the AM, midday and PM peak hours for the year 2018. A more detailed table of LOS and delay by movement can be found in Appendix E. The LOS and delay were calculated using Synchro and are based on the balanced traffic volumes from 2018 and the existing geometric and physical conditions.

Table 5 – Summary of Intersection Level of Service (LOS), 2018 Existing Conditions

Intersection ² Haddon Ave and	AM		MD		PM	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
1 - Gwen Faison / Lansdowne Ave (S)	A	7.4	A	8.7	B	11.1
2 - Atlantic Ave (S)	A	8.0	A	6.4	A	8.3
3 - Kaighn Ave (CR 607) (S)	B	14.8	B	14.2	B	16.2
4 - Wildwood Ave (U)	A	0.7	A	0.7	A	0.7
5 - Chestnut St / Park Blvd (S)	B	16.5	B	12.9	B	15.1
6 - Walnut Street (S)	A	2.4	A	1.7	A	3.2
7A - Pine St (U*)	-	-	-	-	-	-
7B - Mt. Ephraim Ave / Line St (S*)	B	11.4	B	11.3	B	10.7
8 - Newton Ave (CR 604) (S)	D	40.8	B	17.8	C	23.8

B. Traffic Data

GPI's subconsultant, TechniQuest Corporation performed classified manual turning movement traffic counts at the following Haddon Avenue locations on Wednesday, October 10, 2018 from 7:00 AM to 9:30 AM, 10:30 AM to 12:30 PM, and 3:30 PM to 5:30 PM.

² S=signalized, U=unsignalized. *Intersection not counted due to ongoing construction/improvements. Unsignalized at time of data collection. ** Signalized at time of data collection.

1. Gwen Faison Avenue/Lansdowne Avenue
2. Atlantic Avenue
3. Kaighn Avenue (CR 607)
4. Wildwood Avenue
5. Chestnut Street/Park Boulevard
6. Walnut Street
7. Mt. Ephraim Avenue/Line Street
8. Newton Avenue (CR 604)

The count data was classified in 15-minute increments into the following categories:

- Pedestrians
- Bicycles (on road and sidewalk)
- Automobiles / Light Trucks (bicycles, motorcycles, automobiles, SUV's, minivans, pick-up trucks and full-size vans, for personal or commercial use)
- Medium Trucks (Single unit trucks)
- Heavy Trucks/Buses (Tractor Trailers 3 or more axles)

TechniQuest also performed Automatic Traffic Recorder (ATR) counts at four locations along Haddon Avenue from Tuesday, October 9, 2018 through Thursday, October 18, 2018.

- Northbound between Mechanic Street and Liberty Street
- Southbound between Mechanic Street and Liberty Street
- Northbound, just north of Walnut Street
- Southbound, just north of Walnut Street

GPI summarized the turning movement count data in a flow diagram and balanced the same, where appropriate. A copy of the count data and flow diagram can be found in Appendix E.

C. Traffic Volume Forecasts

Growth rates were obtained from the Delaware Valley Regional Planning Commission (DVRPC) Travel Demand Model for the design year of 2045. The average annual growth rate was estimated at 0.43%. DVRPC prepared growth factors by county and federal functional class based on long range population and employment forecasts and the major regional transportation projects in the DVRPC's Long Range Transportation Plan. Additional traffic from large planned developments in the immediate area would typically be estimated separately and added to the future traffic volumes resulting from the growth factors. However, no large planned developments in the immediate area were identified thus no additional traffic volumes were added to the future traffic volumes as calculated from the DVRPC growth rate. A copy of the growth rate calculations can be found in Appendix E.

The following table summarizes the no-build overall intersection Level of Service (LOS) and delay in seconds for both the AM and PM peak hours for the year 2045. A more detailed table of LOS and delay by movement can be found in Appendix E. The LOS and delay were calculated using Synchro and are based on the 2045 future traffic volumes and the existing geometric and physical conditions.

Table 6 – Summary of Intersection Level of Service (LOS), 2045 No-Build Conditions

Intersection ³ Haddon Ave and	AM		PM	
	LOS	Delay (s)	LOS	Delay (s)
1 - Gwen Faison / Lansdowne Ave (S)	A	7.4	B	11.2
2 - Atlantic Ave (S)	A	8.2	A	8.6
3 - Kaighn Ave (CR 607) (S)	B	15.7	B	17.3
4 - Wildwood Ave (U)	A	0.7	A	0.8
5 - Chestnut St / Park Blvd (S)	B	16.3	B	15.3
6 - Walnut Street (S)	A	2.4	A	3.3
7A - Pine St (S*)	B	13.9	B	14.8
7B - Mt. Ephraim Ave / Line St (U**)	A	0.1	A	0.0
8 - Newton Ave (CR 604) (S)	D	51.0	C	32.2

In general, the overall intersection delay at the studied intersections along Haddon Avenue slightly increases from the 2018 existing conditions to the 2045 no-build conditions. However, even with the increased delay all of the intersections operate at an overall intersection level of service (LOS) of 'A' or 'B' with the exception of Newton Avenue which operates at a LOS 'D' and a LOS 'C' in the AM and PM peak periods, respectively.

D. Crash Data Analysis and Crash Diagram

In 2018, the Camden County Police Department (CCPD) provided vehicular crash reports for Haddon Avenue for the three-year period from January 2015 through December 2017. Collision diagrams and a crash analysis were prepared from these reports. No fatal crashes occurred during the three-year period. The statewide crash rate for State roadways with similar cross sections (two lanes, undivided with no shoulders) is 4.17 crashes / million vehicle miles (mvm). The actual crash rate for Haddon Avenue within the project limits is 6.32 crashes / mvm. CCPD also provided pedestrian crash reports for Haddon Avenue for the five-year period from January 2013 through December 2017. Seventeen (17) pedestrian or bicyclist crashes occurred over this period. The majority of these crashes resulted in injuries, however, no fatalities occurred. It should be noted that the crashes reported in the City of Camden tend to be less than the actual number of occurring crashes due to delay in reporting and unreported crashes. The crash data is summarized in the following table.

Table 7 – Crash Summary

Total Crashes	Actual Crash Rate	2017 Statewide Crash Rate	Overrepresentations		
			Crash Type	Severity	Surface/Light Conditions
81	6.32	4.17	Parked vehicle, left/U-turn, Fixed Object, Pedestrian/ Bicyclist, At intersection	Injury (predominately minor)	Dry/Day and Night

³ S=signalized, U=unsignalized. *Signalized in future no-build and build conditions. ** Unsignalized in future no-build and build conditions. Volumes rerouted.

Collision diagrams for Haddon Avenue were developed from the individual crash reports. Copies of the crash analyses and collision diagrams can be found in Appendix D.

V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING

KMA Consulting Engineers, Inc., prepared an environmental screening for this project in October 2018 to identify any possible environmental “fatal flaws” for the proposed reconstruction of Haddon Avenue. Potential environmental constraints identified within the screening are summarized below. A copy of the screening, including constraints mapping, can be found in Appendix H.

A. Cultural Resources

The New Jersey Historic Preservation Office’s (NJHPO) Cultural Resource Information System (CRGIS) was examined in an effort to identify recorded and known archaeological and historic architectural resources within the study area. According to information provided by the NJHPO CRGIS, the following historic properties are located within the study area:

- Cooper Plaza Historic District – Eligible for Listing on the National Register (NR) (SHPO Opinion 10/30/1991);
- Pulaski Park Historic District – Eligible for Listing on the NR (SHPO Opinion 12/11/1989);
- Haddon Avenue Historic District – Identified;
- Parkside Historic District – Eligible for Listing on the NR (SHPO Opinion 6/5/1996) and
- Camden and Atlantic Railroad Historic District – Eligible for Listing on the NR (SHPO Opinion 9/17/2001).

There are no historic properties that are listed as a New Jersey Register of Historic Places property immediately adjacent to the study area.

B. Section 4(f) Properties

No existing Section 4(f) parkland resources were identified within the study area other than a pocket park in the northeast corner of Haddon Avenue and Newton Avenue. Also, a pocket park was recently constructed at Pine Street and Haddon Avenue. However, there will be no involvement with these two resources. As such, the project will not result in the use of Section 4(f) parkland resources. There are multiple neighborhood playgrounds, pocket parks, and passive recreational areas located more than 400 feet away from the project study area including 7th and Clinton Street playground, Cooper Plaza Commons playground, and Bradley and Ormand Avenue passive recreational area. In addition, the Camden High School Athletic Field is located approximately 1,200 feet away from the study area.

In addition to parkland and recreational resources, Section 4(f) of the USDOT Act also requires that the projects evaluate the use of cultural resources that are of local, state, or national importance. As such, use of the five (5) known cultural resources identified in Section A above, would require evaluation per Section 4(f).

C. Noise and Air Quality

Sensitive receptors, such as educational, religious, residential and service areas, were identified within the project limits. Table 8 identifies sensitive receptors within the study limits.

Table 8 – Sensitive Receptors

Name	Address	Type
Camden Kids Academy	1459 Haddon Avenue, Camden, NJ	Child Care Center
MEL, Inc.	1131-33 Haddon Avenue, Camden, NJ	Child Care Center
The Happy Child Learning Center	1051-1053 Haddon Ave, Camden, NJ	Child Care Center
Dr. Martin Luther King Junior Center	1151 Haddon Ave, Camden, NJ	Community Facility
STARS Adult Medical Day Center	1470 Haddon Ave, Camden, NJ	Medical Facility
Masjid Muhammad Abdul Wahab	1032 Spruce St, Camden, NJ	Religious Institution
Dominican Monastery of the Holy Rosary	1500 Haddon Ave, Camden, NJ	Religious Institution
The Quba School and Islamic Center	1311 Haddon Ave, Camden, NJ	Religious Institution
Nation of Islam Muhammad's Temple of Islam No. 20	1157 Haddon Ave, Camden, NJ	Religious Institution

The proposed project is exempt under Table 2 – Pavement resurfacing and/or rehabilitation of the Transportation Conformity Rule in the Clean Air Act Amendments (CAAA). As such, the proposed project is exempt from the conformity requirement of the CAAA, including a PM 2.5 analysis, per 40 CFR 93.126 and is not anticipated to have adverse air quality impacts.

It is anticipated that the project would be classified as a Type III project under 23 CFR 772.7 and would not require analysis for highway traffic noise impacts. Type III projects do not involve added capacity, construction of new through lanes or auxiliary lanes, substantial changes in the horizontal or vertical alignment of the roadway or exposure of noise sensitive land uses to a new existing highway noise source.

D. Wetlands and Vernal Pools

No wetlands are located within the study area. No vernal habitats or potential vernal habitats are located within the study area.

E. Zoning and Land Use

Haddon Avenue is zoned Commercial District C-1 within the study area, allowing ground floor retail with residential units on the upper floor, as well as attached row-home dwelling units. The Commercial Overlay Zone CV-2 provides sufficient space in appropriate locations for various types of public and semi-public recreational development, conservation and other open space users.

Implementation of the proposed project will be consistent with the existing land use and will not create a conflict with zoning regulations, change the intensity of the land use or impact the character or quality of the existing community.

The project area is designated by NJDEP as a State Planning Area P-1 (Metropolitan).

F. Floodplains

All regulated waters with drainage areas of 50 acres or greater have flood hazard areas regulated by the NJDEP Flood Hazard Area Control Act Rules (NJAC 7:13). A small portion of the project corridor, within the Park Boulevard intersection with Haddon Avenue, is located within the 100-year Flood Hazard Area of the Delaware River. Therefore, the proposed project activities will be regulated under the NJDEP Flood Hazard Area Control Act Rules.

G. Sole Source Aquifers

The study area is located in the New Jersey Coastal Plain Sole Source Aquifer System. Although the study area is located within the USEPA-mapped sole-source aquifer, a Groundwater Quality Assessment (GQA) will not be required since this type of project does not meet the criteria set forth in the USEPA and FHWA Memorandum of Understanding on Sole Source Aquifers dated July 8, 1984.

H. Threatened and Endangered Species

Correspondence with the New Jersey Natural Heritage Program (NHP) indicated that there are no known records of threatened or endangered species document within the project corridor.

I. U.S. Fish and Wildlife

The U.S. Fish and Wildlife Services Information, Planning and Conservation (IPaC) system was also reviewed and no federally listed threatened or endangered species or critical habitat were identified within the study area.

J. Stormwater Management and Water Quality

It is anticipated that the project will be classified as a major development based on one acre of land disturbance, but less than $\frac{1}{4}$ acre of net new impervious surface. The current NJDEP Stormwater Management (SWM) Rules, NJAC 7:8, dated June 20, 2016, require that all projects classified as a major development meet certain standards for water quality, water quantity, and groundwater recharge. Since it is anticipated that the selected PPA is classified as a major development, the project will be designed to meet the requirements of the SWM Rules. However, it is anticipated that Stormwater Best Management Practices (BMP) will not be required for the following reasons:

1. The project is in a tidal flood hazard area of the Delaware River. Therefore, quantity control is not anticipated.
2. The project will not exceed $\frac{1}{4}$ acre of net new impervious surface. Therefore, water quality design is not required.
3. The project is located in a "PA-1" state planning area which is not subject to groundwater recharge compliance.

It should be noted that new SWM Rules were proposed on December 1, 2018 and will be adopted on or before November 30, 2019. The new rules, once adopted, will become "effective" within one year of the adoption date. Under the new rules proposal, NJDEP requires all "major development" to comply with the rules by using Green Infrastructure (GI) as the first layer of compliance. GI requires suitable soils for infiltration and an existing gravity drainage system to capture excess flows. The new rules also state that impervious surface area which conveys runoff into a new or upsized pipe system will count towards the $\frac{1}{4}$ acre net new impervious threshold. Runoff for this project may well be

directed into a new parallel pipe system. Therefore, we anticipate that even though runoff from existing impervious surface area is being redirected from the CSO into a separate stormwater system there will be no loss of water quality that would necessitate BMPs for water quality treatment. It will, however, be necessary to demonstrate that there is no adverse impact on the hydraulics of the existing CSO once the parallel storm system is tied into it.

It should also be noted that NJDEP has proposed to upgrade the surface water quality classification of the Cooper River to Category 1. This change is likely to impose higher treatment standards onto the existing CSO system that cannot be assessed at this time, but which may affect the stormwater compliance in the next phases of design.

K. Hazardous Waste

Available geospatial data from the NJDEP was obtained, including the NJDEP's Known Contaminated Sites List and historic fill, to determine the potential for involvement with hazardous materials. A review of this dataset revealed that there are thirteen (13) sites located within 300-feet of the project corridor with the potential to be an Area of Concern (AOC). According to available geospatial data from the New Jersey Geological and Water Survey, mapped historic fill is located within the project limits near Haddon Avenue and Interstate 676. The NJDEP considers historic fill material an Area of Concern (AOC) pursuant to the Technical Requirements, N.J.A.C. 7:26E-1.8. During Preliminary Engineering further investigation, including test pits, is recommended to determine the nature of the contamination at some of the sites and the potential implications during construction.

L. Socioeconomics

A Community Profile was submitted to Camden County in October 2018 which serves to alert the Project Team of the characteristics and demographics within the project area. This evaluation determined that the population within the study area is 65% African American. 29% of the study area is Hispanic/Latino. 26% of the population in the study area speaks Spanish. And, 32% of the population within the study area live at or below the federal poverty level. Due to the neighboring public facilities such as schools, emergency services, and transportation hubs, impacts to these services and those they serve should be carefully considered. Efforts were made to reach out to the surrounding communities and stakeholders during the CD phase to obtain their input including holding a Public Information Center (PIC). These efforts to reach out to the community and stakeholders needs to be carried out through the following phases of design and construction.

M. Environmental Justice

The Environmental Justice Policy Executive Order assists in the establishment of the State's commitment to ensure that minority populations and low-income communities are afforded fair treatment and meaningful involvement in decision-making regardless of race, color, ethnicity, religion, income or education level.

The Environmental Protection Agency (EPA) Environmental Justice Screening (EJ Screen) Tool was used to determine the presence or absence of minority and/or low-income populations within the study area. The study area used for the EJ screen was delineated as a ¼-mile buffer from the proposed project corridor.

Available demographic and economic data from the U.S. Census 2012-2016 American Community Survey (ACS) 5-year estimates were populated by the EJ Screen Tool to determine the presence or absence of minority and/or low-income populations within the study area. Based on this information, it was determined that the population within the study area is 12,741 persons, approximately 97% of the population consists of minorities, 13% of people within the study area speak English less than well, and approximately 32% of the households within the study area live at or below the federal poverty level. The summary report generated by the EJ Screen Tool indicates that there may be potential EJ issues in the project area.

Although low-income and minority populations are present, the proposed work will not isolate any residential neighborhoods or adversely impact community cohesion in the project area. The proposed project is not anticipated to alter access to public transportation, negatively impact pedestrian, bicyclist, and/or motorist safety, or involve a disproportionately high and adverse effect to any minority or low-income population. Coordination with property and business owners is recommended during the design phase of the project to maintain accessibility during construction, as well as, coordination with NJ Transit regarding impacts to existing bus routes and bus stops. In addition, multilingual public outreach may be necessary to engage residents. Furthermore, it is not anticipated that the proposed project will affect farmland or community facilities.

N. Community Needs and Impacts

A Public Involvement Action Plan (PIAP) was prepared and submitted for approval to Camden County in October 2018. In addition, the following meetings were held with local officials and the public. Copies of the minutes for each meeting can be found in Appendix I.

Date	Meeting
September 25, 2018	Initial Stakeholders Meeting
February 27, 2019	Second Stakeholders Meeting to Present Alternatives
April 2, 2019	Public Information Center

The table below identifies the important community centers within the project limits.

Table 9 – Community Facilities

Name	Address	Type
Camden Kids Academy	1459 Haddon Avenue, Camden, NJ	Child Care Center
MEL, Inc.	1131-33 Haddon Avenue, Camden, NJ	Child Care Center
The Happy Child Learning Center	1051-1053 Haddon Ave, Camden, NJ	Child Care Center
Dr. Martin Luther King Junior Center	1151 Haddon Ave, Camden, NJ	Community Facility
STARS Adult Medical Day Center	1470 Haddon Ave, Camden, NJ	Medical Facility
Masjid Muhammad Abdul Wahab	1032 Spruce St, Camden, NJ	Religious Institution
Dominican Monastery of the Holy Rosary	1500 Haddon Ave, Camden, NJ	Religious Institution
The Quba School and Islamic Center	1311 Haddon Ave, Camden, NJ	Religious Institution

Name	Address	Type
Nation of Islam Muhammad's Temple of Islam No 20	1157 Haddon Ave, Camden, NJ	Religious Institution

The Stakeholders meetings included representatives from community organizations and government, including:

- Haddon Avenue Business Association
- Parkside Business and Community in Partnership
- Nation of Islam Muhammad's Temple of Islam No. 20
- Cooper University Hospital
- Lourdes Health System
- City of Camden Fire Department

At the start of the study, during and after the initial stakeholders meeting, a survey was developed to gather input from the community. Surveys were available through paper response as well as an on-line application, as suggested by project stakeholders. Surveys were developed in both English and Spanish. 121 responses were received. Through a multiple-choice selection process, 30% of the respondents indicated that they were in the study area nearly every day and 70% were in the study area 11 or more days each month. 78% of respondents indicated that beautification of the area was important to them. Over 50% of respondents indicated that walking and biking, local business impact, and traffic congestion were important. 33% indicated transit accessibility was important. Over 10% indicated as a write-in response that safety was important. These responses were considered in the development of alternatives. A copy of the survey and results is included in Appendix I. Documentation of additional outreach efforts, particularly related to feedback on alternatives development, is provided in Section VI, Selection of Preliminary Preferred Alternative.

O. Surface Waters

The closest surface water to the study area is the Cooper River, located approximately 1,000 feet east of the study area. The Cooper River is classified as a Freshwater Non-Trout waterway. It is a tributary of the Delaware River. The Cooper River is considered a tidal waterway within the City of Camden. The study area is located within the Lower Delaware Watershed Management Area and is completely contained within the Cooper River Hydrologic Unit Code (HUC)-14 watershed. The Cooper River is proposed to be reclassified to a Category 1 water upon adoption of an NJDEP Rule Proposal dated March 4, 2019.

P. Riparian Zones

Since the Cooper River is located more than 300 feet away from the study area, proposed project activities will be outside the NJDEP regulated riparian zone.

Q. Tidelands

Tidelands are all lands now or formerly flowed by the mean high tide of a natural waterway. Projects proposed in a tidally flowed waterway require a Waterfront Development permit and NJDEP Bureau of Tidelands issued Tidelands Conveyance. Since proposed improvements are limited to the vicinity

of Haddon Avenue, neither a Tidelands Application nor Waterfront Development Permit will be required for this project.

R. Well Head Protection Areas

In New Jersey, a Well Head Protection Area (WHPA) is a mapped area calculated around a public Community Water Supply (CWS) well or a Non-Community Water Supply (NCWS). This area delineates the horizontal extent of ground water captured by well pumping at a specific rate over various periods of time. Through regulation of land use and activities within WHPAs the potential for groundwater contamination can be reduced.

The study area is located within a public CWS WHPA. It is not likely that the proposed project activities will result in changes to land use or adversely affect groundwater quality.

S. Wild and Scenic Rivers

The National Park Service (NPS) was consulted to determine if the Cooper River is designated as a Wild or Scenic River. According to the NPS it is not designated as a Wild or Scenic River. Also, the Cooper River is not listed on the NJDEP New Jersey Wild and Scenic Rivers System.

T. NJDEP Green Acres Program (GAP)

Available geospatial data from the NJDEP Green Acres Program Recreation and Open Space Inventory (ROSI) and aerial photography were reviewed to identify public parkland, including recreation facilities, publicly owned open space, community parks, etc. There are no Green Acres properties located within the project study area.

U. Registered Historic Sites and Districts

See Section A. above.

V. Soil Erosion and Sediment Control

If the project results in more than 5,000 square feet of ground disturbance, water quality degradation concerns during construction will be addressed by implementing soil erosion and sediment control measures designed in accordance with The Standards for Soil Erosion and Sediment Control in New Jersey. A Soil Erosion and Sediment Control application will be submitted to the Camden County Soil Conservation District for certification. Upon receipt of the certification, a Request for Authorization under the New Jersey Pollution Discharge Elimination System (NJPDES) General Stormwater Permit for Construction (5G3) will be required, assuming the project exceeds the one-acre threshold for ground disturbance.

W. Anticipated Environmental Permits or Approvals

1. Federal Permits/Approvals/Coordination

If federal funding is used for this project, the project is considered a federal action and is subject to review per the National Environmental Policy Act (NEPA) of 1969. In addition to NEPA requirements, the following federal authorizations or permits may be required:

- Consultation with NJSHPO per Section 106 of the National Historic Preservation Act of 1966
- Compliance with the Federal Clean Air Act Amendments of 1990

- FHWA Section 4(f) of the USDOT Evaluation to assess use of cultural resources and publicly owned parks
- Compliance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise.

2. State Permits/Approvals/Coordination

- Demonstrated compliance with NJDEP Stormwater Management Rules
- NJ Pollutant Discharge Elimination System (NJPDES) General Stormwater Permit for Construction (5G3) if the project results in greater than one acre of ground disturbance
- Certification from the Camden County Soil Conservation District
- Compliance with the NJDEP Technical Requirements for Site Remediation and LSRP Program for potential improvement with historic fill or regulated material.
- Coordination with the Camden County Municipal Utilities Authority (CCMUA)
- NJDEP Flood Hazard Area Individual Permit

X. Environmental Summary with Probable NEPA Document required

In summary, the Environmental Screening did not identify any “fatal flaws” that would prohibit the advancement of this project. NJDOT Bureau of Environmental Program Resources (BEPR) approved the Environmental Screening Report on June 20, 2019 via email that can be found in Appendix H. This project is not anticipated to be funded with federal funds under any phase of work. Therefore, the determination of a probable NEPA document would not be necessary. However, a New Jersey EO215 environmental document is expected to be required and submitted for approval by NJDEP during PE.

VI. EVALUATION OF ALTERNATIVES

A. Conceptual Alternatives

Three conceptual alternatives were developed and considered along with a no-build alternative in response to the project’s Purpose and Need. See Section VI.C., for an evaluation of pavement alternatives.

Alternative 1 consists of a 12-foot wide travel lane with adjacent 8-foot wide parking in each direction. Sidewalks on each side of the road would be widened up to one foot. (It should be noted that it was suggested at the July 23rd, 2019 NJDOT Subject Matter Expert meeting that additional widening of the sidewalk should be considered using a proposed cross section of either a 10-foot wide or 11-foot wide travel lane with adjacent 8-foot wide parking in each direction. Sidewalks on each side of the road could then be widened up to two (2) or three (3) feet depending on the selected lane width. It was agreed that this alternative would be further investigated in PE along with any impacts to above and below ground utilities.) The alternative will replace the existing concrete pavement with full-depth bituminous pavement. The CSO will be separated. Curb extensions will be added at signalized intersections, where feasible. All existing traffic signals will be replaced and brought into compliance with the MUTCD along with signing and pavement markings. Curb ramps and pedestrian pushbuttons will be brought into compliance with the ADA. Opportunities for green stormwater infrastructure, street trees, street furniture and decorative street lighting will be considered, as appropriate.

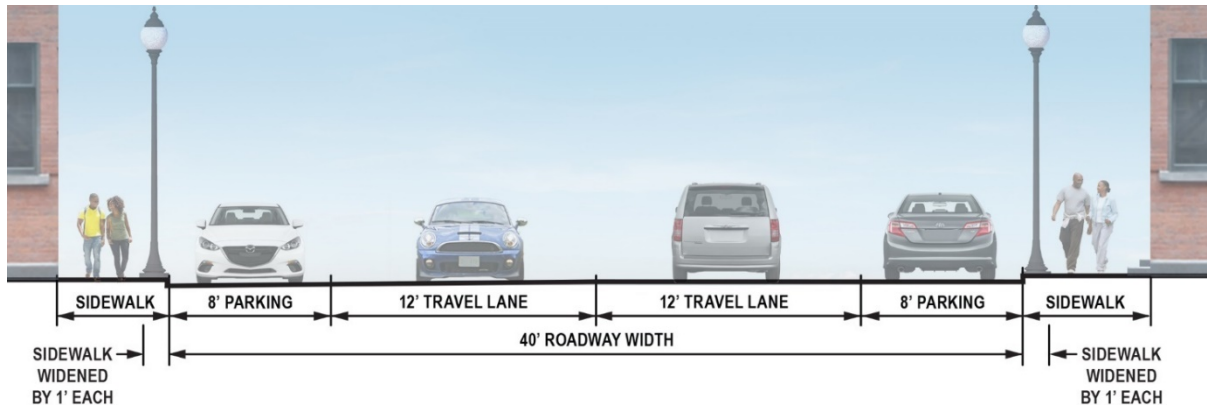


Figure 8 – Alternative 1 Cross Section

Alternative 2 is similar to Alternative 1 except that the cross section would consist of an 11-foot wide travel lane in each direction, a five (5)-foot wide bicycle lane in the northbound/westbound direction, a seven (7)-foot wide bicycle lane and adjoining eight (8)-foot wide parking in the southbound/eastbound direction. Existing parking would be removed along the northbound side of Haddon Avenue.

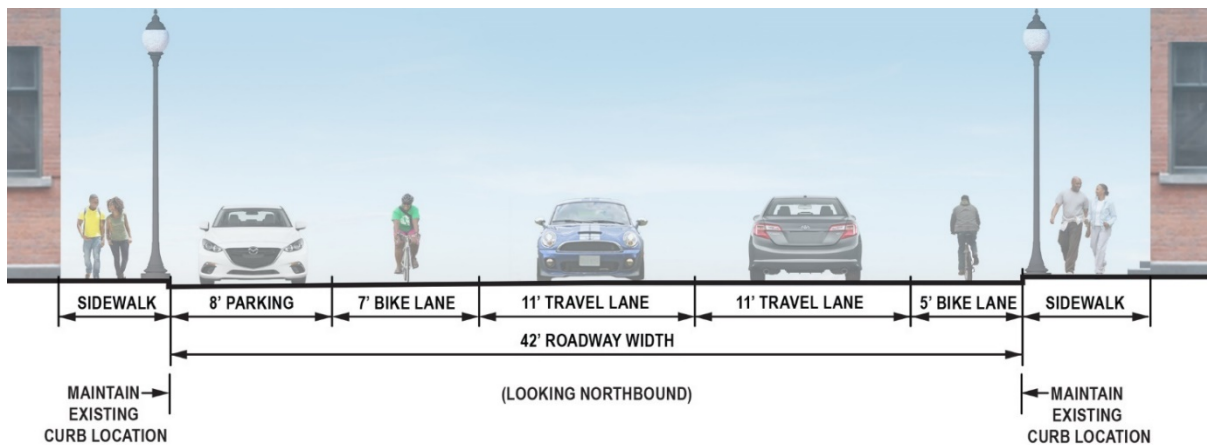


Figure 9 – Alternative 2 Cross Section

Alternative 3 is similar to Alternative 1 except that the cross section would consist of a 12-foot wide travel lane with an adjoining three (3)-foot wide buffer zone and a 12-foot wide two-way bicycle lane in the southbound/eastbound direction and a 15-foot wide travel lane in the northbound/westbound direction. Parking would be removed on both sides of Haddon Avenue.

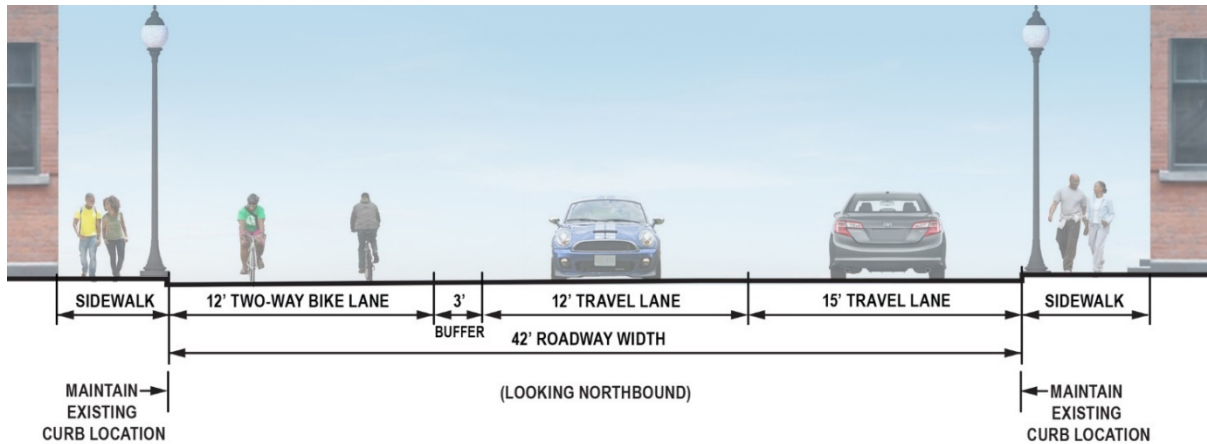


Figure 10 – Alternative 3 Cross Section

B. Traffic Analysis

Alternatives 1, 2 and 3 would have similar operations to the No-Build Condition, since no capacity changes are proposed for any of the alternatives.

The following table summarizes the build overall intersection Level of Service (LOS) and delay in seconds for Alternatives 1, 2 and 3 for the AM and PM peak hours. For each of the alternatives, GPI performed a Synchro analysis of the seven (7) signalized intersections in the corridor as well as the Haddon Avenue and Wildwood Avenue unsignalized intersection for the future year 2045. More detailed tables of LOS and delay by movement can be found in Appendix E.

Table 10 – Summary of Intersection Level of Service (LOS), 2045 Build Conditions

Intersection ⁴ Haddon Ave and	No-Build		Alternative 1		Alternative 2		Alternative 3	
	LOS (Delay)		LOS (Delay)		LOS (Delay)		LOS (Delay)	
	AM	PM	AM	PM	AM	PM	AM	PM
1 - Gwen Faison / Lansdowne Ave (S)	A (7.4)	B (11.2)	A (7.8)	A (7.6)	A (7.9)	A (7.7)	A (7.6)	A (7.5)
2 - Atlantic Ave (S)	A (8.2)	A (8.6)	A (7.1)	A (6.6)	A (7.5)	A (6.8)	A (6.9)	A (6.6)
3 - Kaighn Ave (CR 607) (S)	B (15.7)	B (17.3)	B (12.3)	B (13.6)	B (12.6)	B (14.0)	B (12.0)	B (13.5)
4 - Wildwood Ave (U)	A (0.7)	A (0.8)	A (0.7)	A (0.8)	A (0.7)	A (0.8)	A (0.7)	A (0.8)
5 - Chestnut St / Park Blvd (S)	B (16.3)	B (15.3)	B (13.1)	B (10.7)	B (13.5)	B (11.0)	B (13.4)	B (10.7)
6 - Walnut Street (S)	A (2.4)	A (3.3)	A (1.7)	A (2.5)	A (1.7)	A (2.5)	A (1.5)	A (2.4)
7A - Pine St (S)	B (13.9)	B (14.8)	B (13.2)	B (12.5)	B (13.1)	B (12.5)	B (13.2)	B (12.4)
7B - Mt Ephraim Ave/Line St (U)	A (0.1)	A (0.0)	A (0.1)	A (0.0)	A (0.1)	A (0.0)	A (0.1)	A (0.0)

⁴ S=signalized, U=unsignalized. *Signalized in future no-build and build conditions. ** Unsignalized in future no-build and build conditions. Volumes rerouted.

Intersection ⁴ Haddon Ave and	No-Build		Alternative 1		Alternative 2		Alternative 3	
	LOS (Delay)		LOS (Delay)		LOS (Delay)		LOS (Delay)	
	AM	PM	AM	PM	AM	PM	AM	PM
8 - Newton Ave (S)	D (51.0)	C (32.2)	B (18.7)	C (20.1)	B (18.9)	C (20.1)	B (19.0)	C (20.5)

Each of the three alternatives provides a slight improvement in overall delay at each intersection with the exception of Newton Avenue where the delay is significantly reduced in each of the alternatives from the no-build condition. The delay and LOS do not differ significantly between each of the alternatives as the number of approach lanes is the same for each alternative with the only significant change being the lane widths. Therefore, based exclusively on traffic conditions all three alternatives provide similar results in operational improvement.

C. Pavement Recommendation

The condition of the existing concrete pavement of Haddon Avenue in Camden is poor based on visual observation and beyond ordinary pavement preservation methods such as concrete joint repair, partial depth and full depth concrete repair, diamond grinding and flexible pavement overlay, to extend/improve the existing pavement service life and ride quality.

Rubblization of the existing concrete pavement with a Hot Mix Asphalt (HMA) overlay is not recommended for this project for the following two reasons. First, the process of breaking/rubblizing the existing concrete pavement will cause excessive vibrations, which will likely damage the existing underground utilities and possibly the adjacent building foundations. Second, rubblization will require a minimum HMA overlay of 6 inches, which will adversely affect the grades of the adjacent curbs, sidewalks, drainage and buildings.

Considering the project's proposed conversion of the existing CSO system into proposed separate sanitary sewer and stormwater systems (and any other utility relocations that may be required in conjunction with this work), extensive saw cutting/removal of the existing pavement sections is required to construct the noted systems. Therefore, potential pavement rehabilitation methods of construction are not recommended, as the existing distressed concrete pavement will be further fragmented into smaller pieces, and a substantial effort would be required to reconstruct the sections.

We recommend that a full depth pavement section be constructed after construction of the proposed sanitary sewer and stormwater drainage systems and any other underground utility improvements have been completed. During Preliminary Engineering, pavement alternatives analysis and a pavement recommendation should be developed, which could include, but is not limited to, the options discussed below.

Full depth pavement options consist of a full depth concrete pavement section, full depth HMA pavement section or full depth composite section (HMA surface over concrete base). Any of the proposed full depth pavement sections would provide a continuous smooth uniform quality product.

Full depth concrete sections have a superior life expectancy of up to 40 years or more. However, they have a higher up-front cost when compared to a full depth HMA pavement section. Concrete pavement sections are preferable for roadways with high truck traffic volumes as they can withstand rutting. However, concrete pavement sections typically produce higher noise levels. Tining of the

concrete surface during construction along with diamond grinding assist in noise reduction and provide a smooth ride quality. Routine maintenance of concrete pavement sections requires joint and crack sealing to prevent water infiltration of the pavement section, thereby causing damage through freeze-thaw during the fall-winter-spring season changes. Concrete pavement sections have an additional benefit over full depth HMA sections as they have a thinner depth and require less excavation to construct due to the material strength of concrete compared to HMA. However, given the high initial cost and the potential noise impact on the numerous sensitive noise receptors in the project area, full depth concrete replacement was not advanced as part of the PPA.

Historically, full depth HMA pavements have a life expectancy of 20 years or more with a cheaper cost to construct when compared to full depth concrete pavement sections. However, recent mechanistic-empirical design methods create a perpetual HMA pavement section lasting greater than 50 years. This design approach implements a rut resistant surface/intermediate course with a binder rich fatigue resistant base course. Preservation of the perpetual pavement concept functions by observation of pavement distress in the surface course. Once the surface course presents a predetermined level of distress, the pavement must be milled and resurfaced prior to fatigue distress being developed in the HMA base course.

A composite pavement section would function in a similar fashion to the perpetual HMA pavement section, in so far as the concrete base course carries the vehicle loading, while the HMA surface course provides friction, smoothness, lower noise levels, well-draining finish. When the surface distress becomes present, the HMA surface course is milled off and resurfaced with a fresh HMA surface course to renew the ride quality of the roadway. Unlike a perpetual HMA pavement section, composite pavement sections are susceptible to reflective and thermal cracking related to the jointed concrete base course. For this reason, a composite pavement section was not advanced as part of the PPA.

A review of the Camden County Development Regulations, Updated February 2017, identifies numerous construction details to be implemented on county roadways. The County's Regulation includes details for HMA Pavement and Concrete Repair Construction Details. For concrete pavement the County uses NJDOT's standard detail. **Due to the condition of the existing pavement, the anticipated utility relocations and modifications and the numerous noise sensitive receptors in the project area, GPI recommends construction of a full depth HMA section** to be constructed for this project in accordance with Camden County Development Regulations. The proposed pavement section will consist of a 6-inch thick Dense Graded Aggregate Base Course, 6-inch thick HMA, 19M64, Base Course, and a 2-inch thick HMA, 12.5M64, Surface Course. These dimensions may be increased during design, if additional information is attained, that requires increasing the structural capacity of the proposed HMA pavement section.

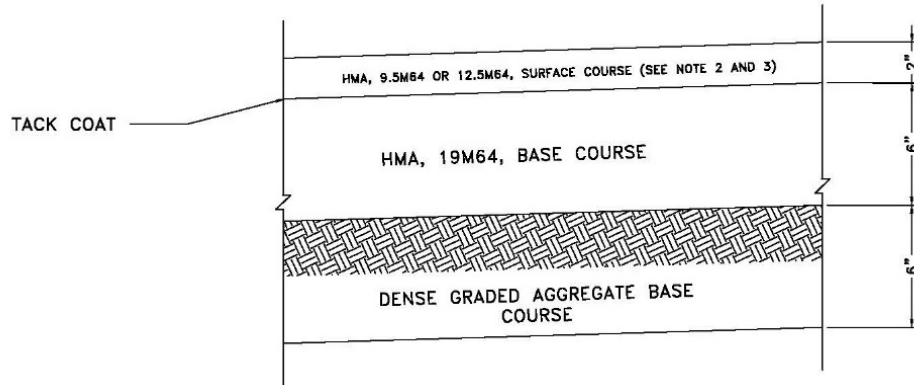


Figure 11 – Camden County HMA Pavement Standard Detail

D. Hydrology & Hydraulics Analysis

An analysis of hydrology and hydraulics was not performed during the CD phase as there are no streams or rivers to be studied within this project's limits. Drainage design (refer to Section III.D.) and Stormwater Management (refer to Section V.J.) will be addressed during PE/Final Design (FD).

E. Right of Way Impacts and Review

For Alternative 1, it is anticipated that five (5) parcels will be impacted, resulting in partial property acquisition or permanent sidewalk easements. These are small parcels at various intersections to address existing property lines that extend into the existing roadway, a proposed ADA ramp and landing area, and two proposed channelization islands at the intersection of Kaighn Avenue which will provide refuge islands for pedestrians crossing Haddon Avenue and Kaighn Avenue.

Table 11 – Alternatives 1 and 2 Right of Way Impacts

Lot	Block	Comment
362	29	To accommodate proposed ADA curb ramp and landing area
378	48	Existing ROW extends into roadway
1314	53	To accommodate larger radius for channelization island
1294	1	To accommodate larger radius for channelization island
1334	8	Existing ROW extends into roadway

For Alternative 2, it is anticipated that five (5) parcels will be impacted, resulting in the same partial property acquisitions or permanent sidewalk easements as Alternative 1.

For Alternative 3, partial property acquisitions or permanent sidewalk easements would be required, the extent would be equal to or greater than Alternatives 1 and 2.

The impacted parcels for Alternatives 1 and 2 are shown on their respective plans in Appendix K.

F. Utility Impacts

For each of the alternatives, overhead utility poles may require relocation in order to accommodate ADA compliant curb ramps and pushbuttons. In addition, proposed traffic signal improvements could

require relocation of overhead utility wires due to electrical proximity requirements and visual obstruction issues and create conflicts with underground facilities.

Camden County is working with CCMUA and the City of Camden regarding the cost benefit ratios for separation of combined sewer system within the City of Camden, including Haddon Ave. The impacts of separation of the combined sewer system and repair/replacement of the existing combined sewer system along the project limits will be further evaluated during the Preliminary Engineering Phase. The implementation of these new facilities may impact adjacent underground facilities and may affect the pavement design.

It is recommended that subsurface utility engineering be conducted during PE to determine the exact location and depth of underground utilities.

G. ITS Facilities

No intelligent transportation systems (ITS) equipment exists within the study area, but signal operation should be coordinated and optimized with actuation and interconnection either fiberoptic hardwire, broadband or via GPS clocks. Specific traffic signal equipment will be identified during PE.

H. Complete Streets Policy

A “Complete Street” is defined as a means to provide safe access for all road users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options. Both Camden County and the City of Camden have Complete Streets Policies which set forth goals and objectives to accommodate the access and mobility of motorists, pedestrians, bicyclists, and public transit users of all ages and abilities during the planning, design, construction, maintenance and operation of new and retrofit transportation facilities.

Camden County’s Complete Streets Checklist was utilized to assess Haddon Avenue’s current Complete Streets compatibility and consider where improvements could be made in accordance with both the Camden County and City of Camden Complete Streets Policies. The completed CD portion of the Complete Streets Checklist can be found in Appendix S.

Sidewalk currently exists on both sides of Haddon Avenue within the project limits. Parking also currently exists on both sides of the roadway. There are no dedicated bicycle lanes on Haddon Avenue, however, the Parkside Trail does run parallel to the Cooper River and Haddon Avenue between Pine Street and Kaighns Avenue near its intersection with Euclid Avenue.

Transit stops and curb ramps are provided at most intersections. Pedestrian signals and crosswalks exist but are outdated and in disrepair.

Alternative 1 provides a one-foot wider sidewalk on each side of Haddon Avenue. It also provides for other pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. Alternative 1 does not provide dedicated bicycle lanes or bicycle markings on the travel lanes. Bicycle markings could be provided if supported by the community.

Alternative 2 maintains the existing sidewalk widths, but similar to Alternative 1, provides for pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. Alternative 2 provides a five (5)-foot wide bicycle lane along the northbound/westbound direction and a seven (7)-foot wide bicycle lane along the southbound/eastbound side of Haddon Avenue.

Alternative 3 also maintains the existing sidewalk width and provides for pedestrian accommodations such as ADA compliant curb ramps and pushbuttons, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, and public transit access. It also provides a two-way, 12-foot wide two-way bicycle lane in the southbound/eastbound direction with an adjoining three (3)-foot wide buffer zone separating the travel lanes and the bicycle lane.

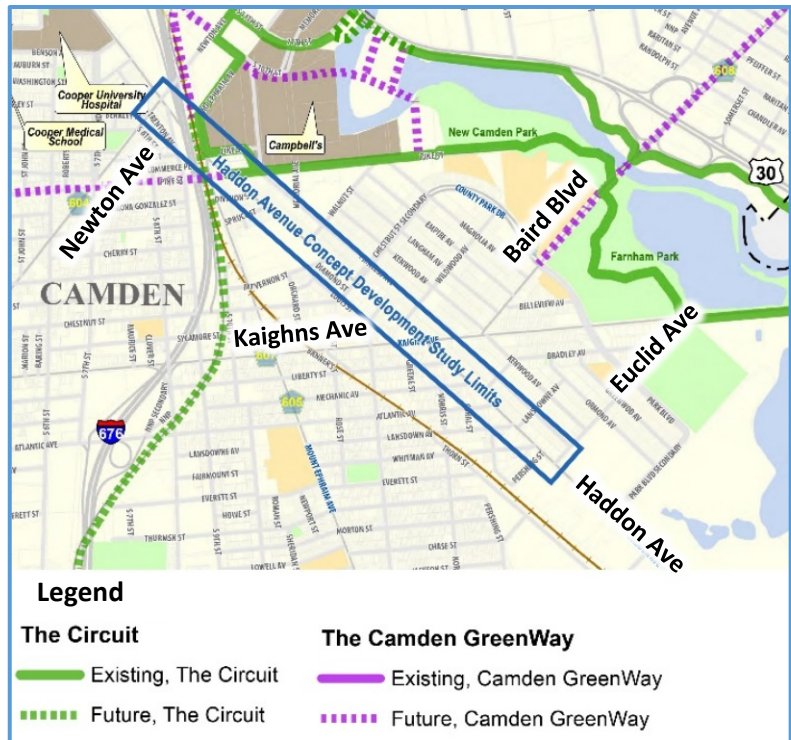


Figure 12 – Existing and Future Planned Trails

I. Access Impacts and Review

No permanent access impacts are anticipated beyond what is required to meet ADA requirements. Access to existing businesses and residences will be maintained at all times during construction.

J. Constructability and Staging Plans and Detour Plan

The following staging and detour strategies were developed in the preparation of this report. Staging and detour strategies are not expected to differ significantly between conceptual alternatives.

The existing 42-foot wide pavement cross section along Haddon Avenue is not wide enough to facilitate two-stage construction of the proposed pavement while maintaining two lanes of traffic. In addition, replacement of the existing CSO will require a sufficiently wide working area to remove the existing facilities and construct the new separated systems and connections. For these reasons, construction alternatives should consider full and partial detours by block or alternating one-way traffic. It is anticipated that construction of the proposed improvements will progress block by block in order to disrupt only a relatively short section of the roadway at a time. Temporary removal of parking within the construction areas and temporary pavement within areas of proposed curb extensions may be required in order to effectively maximize the available working area of each work zone depending on the desired construction staging alternative.

Detour Strategy 1 – Full Detour: A full detour of each roadway segment under construction will facilitate demolition and construction of the entire roadway within the work zone. This option will cause the greatest disruption to traffic along Haddon Avenue and the adjacent roadways but will allow for the shortest construction duration.

Detour Strategy 2 – Partial Detour: For each segment under construction, one direction of Haddon Avenue will be detoured at a time while traffic in the opposite direction will be shifted to the outside via an 11-foot wide lane. This will allow for two-stage demolition and construction of the roadway.

Detour Strategy 3 – Alternating Traffic: For each segment under construction, a single two-way lane could be provided adjacent to the work area while temporary traffic signals and tapers allow two-way alternating traffic to progress through the work zone. A thorough traffic analysis is required to determine the feasibility (including delay, queuing, etc.) and appropriate signal timing of the alternating traffic setup for each location it is proposed.

These staging and detour strategies will be further evaluated as utility relocation and other requirements are further refined in PE.

K. Controlling Substandard Design Elements and Reasonable Assurance

The Preliminary Preferred Alternative (PPA) will require reasonable assurance of approval for design exceptions for four (4) Controlling Substandard Design Elements (CSDEs):

- Stopping Sight Distance (SSD) at Non-Signalized Intersections
- Cross-Slope
- Shoulder Width
- Vertical Clearance under Structures

A memorandum was prepared requesting reasonable assurance of a design exception approval indicating the CSDE and justification for a design exception. Camden County provided a memorandum on March 27, 2020, indicating reasonable assurance of approval of the CSDEs. A copy of the memorandum can be found in Appendix N.

L. Construction Cost Estimate

The construction cost estimate for each alternative, which includes geometrics and roadway, construction, lump sum items, contingencies and construction engineering, is summarized below. The alternatives assume full depth HMA as the pavement type. A copy of the construction cost estimate can be found in Appendix O.

• Alternative No. 1	\$20,384,000
• Alternative No. 2	\$23,215,000
• Alternative No. 3	\$23,203,000

M. Alternatives Matrix

A comparison matrix of all the alternatives was developed for this project. A copy of the matrix can be found in Appendix M.

N. Risk Analysis Summary

A formal risk assessment was not performed during Concept Development. However, the following risks could affect the construction cost of the PPA:

- Soil remediation related to historic fill or contaminated material
- Viability of the separation of the CSO within the project limits
- Modifications to the existing Pavement Recommendation based on soils testing and further input from the County
- Utility Impacts

While not fatal flaws to the advancement of the study to PE, it is recommended that these risk items be carefully vetted early in PE as they can significantly impact the cost and project delivery.

O. Discussions with Subject Matter Experts

A meeting was held with NJDOT Subject Matter Experts on July 23, 2019 to present the project and receive any input on the alternatives. A copy of the meeting minutes can be found in Appendix Q. Among the suggestions by NJDOT Subject Matter Experts was to consider narrowing travel lanes to slow traffic through the area and to investigating NJ Transit's intention regarding the use of longer buses in the future. These items were investigated and addressed. Narrowing of travel lanes is limited to a minimum of 11-foot wide by NJT bus requirements. Regarding NJT's plans for future buses on Haddon Avenue, it was determined that 45-foot long buses may potentially be used in the future; however, it was also determined that bus routes traverse straight along Haddon Avenue through the project limits, so there would be no significant impact on any alternative.

VII. SELECTION OF PRELIMINARY PREFERRED ALTERNATIVE (PPA)

Camden County, Cooper's Ferry Partnership and GPI presented the alternatives to the project stakeholders on February 27, 2019 at the Camden County Historical Society, 1900 Park Boulevard, Camden, NJ. A summary of the meeting, including a list of attendees, can be found in Appendix I. An on-line survey was made available for feedback on the alternatives as well as paper surveys.

Following the stakeholders meeting, Camden County, Cooper's Ferry Partnership and GPI conducted a Public Information Center (PIC) on April 2, 2019. Significant effort was made to inform community residents and businesses of the PIC. Cooper's Ferry Partnership reached out through email to stakeholders. Parkside Business and Community in Partnership (PBCIP) attached flyers to the regular community newsletter. GPI also mailed notices in English and Spanish to all property owners adjacent to Haddon Avenue from Euclid Avenue to Newton Avenue. The flyers, emails and mailings all provided links to the same on-line survey that was provided to stakeholders. Copies of the flyers can be found in Appendix I.

At the PIC, a number of hardcopy surveys were made available to attendees for their completion at the PIC or to take with them. Based on comments at the PIC, the survey was modified to provide specific questions related to support of specific street amenities such as benches, trash receptacles and bicycle racks. As of June 18, 2019, 123 responses to the survey were received, most through the on-line survey application. 100 persons responded to the question asking if the responder had a preferred alternative.

Fifty-six percent (56%) of those surveyed preferred Alternative 1, 24% preferred Alternative 2, and 10% preferred Alternative 3. Ten percent (10%) indicated none of the above.

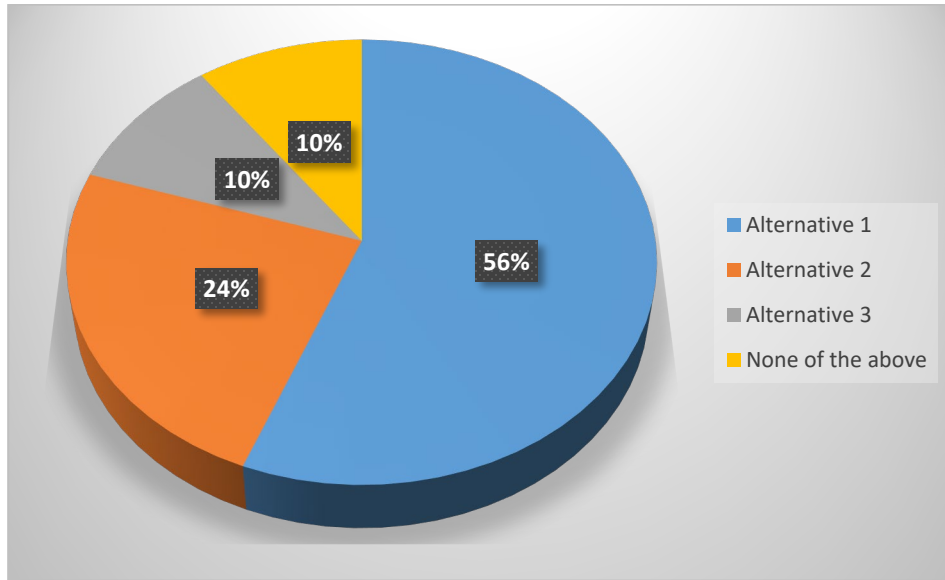


Figure 13 – Total Online Survey Results

Another in-person survey of alternatives selection was conducted at the PIC. Attendees were provided with stickers to attach to their preferred alternative. 35 of the 43 attendees participated in this exercise. Of the 43 meeting attendees, 26 (60%) of the attendees selected Alternative 1. Nine (9) attendees (21%) selected Alternative 2. None of the participants selected Alternative 3. 8 attendees (19%) did not cast a vote.

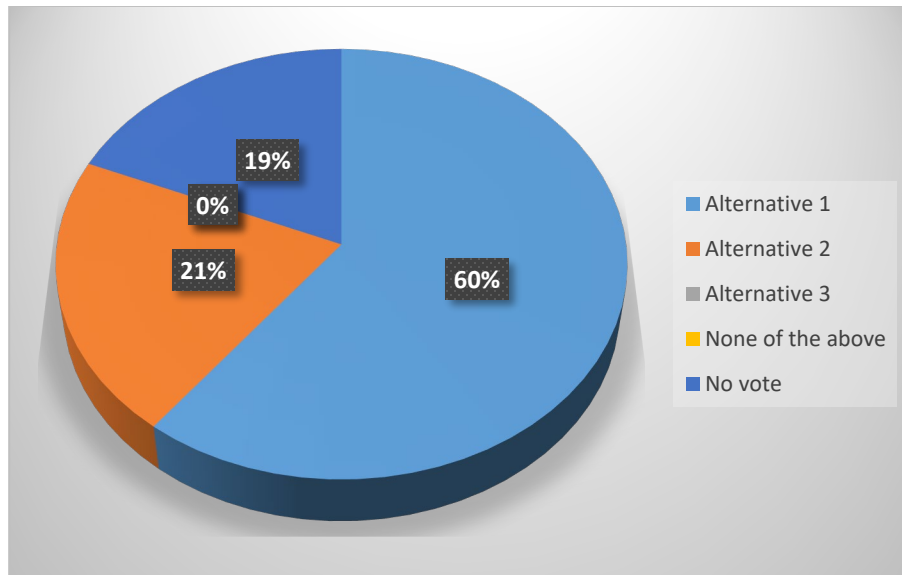


Figure 14 – Total PIC Votes

In addition to the selection of a preferred alternative, other information related to community desires were identified through the survey. Approximately 80% of respondents indicated that they move around the study area by driving. Parking is extremely important or very important to 58% of the respondents

and elimination of parking on one or both sides is not supported by well over 60% of the respondents. 85% of the respondents indicated that the existing number of bus stop locations are adequate. Street trees and green infrastructure are extremely important or very important to nearly 60% of the respondents although some residents also expressed concern regarding maintenance of the trees and green infrastructure. Decorative street lighting is supported by nearly 90% of the respondents. Over 90% of the respondents support the installation of trash receptacles. Over 70% of the respondents support the installation of bicycle racks. Over 70% support the installation of benches; however, there were a number of comments regarding the location and types of benches. Some expressed that benches could encourage loitering. A copy of the summaries of the survey results are included in the Appendix I.

VIII. DESCRIPTION OF PPA

Based on input received from Camden County officials, Camden City officials, Cooper's Ferry Partnership, the City of Camden Stakeholder Groups including the Parkside Business Community in Partnership, the Haddon Avenue Business Association, and the public, the selected Preliminary Preferred Alternative (PPA) is Alternative No. 1.

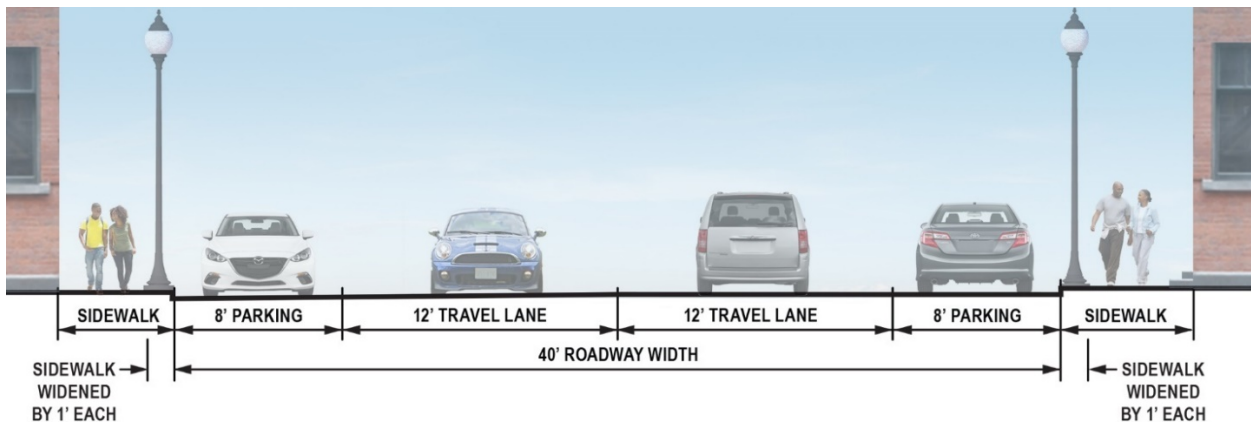


Figure 15 – PPA Cross Section

The following summarizes the proposed features and impacts of the PPA, a copy of which can be found in Appendix P.

A. Geometrics

The PPA proposes to maintain the existing alignment of Haddon Avenue. The cross section consists of a 12-foot wide lane with adjoining 8-foot wide parking in each direction of Haddon Avenue. (As previously mentioned, it should be noted that it was suggested at the July 23rd, 2019 NJDOT Subject Matter Expert meeting that additional widening of the sidewalk should be considered using a proposed cross section of either a 10-foot wide or 11-foot wide travel lane with adjacent 8-foot wide parking in each direction. Sidewalks on each side of the road could then be widened up to two (2) or three (3) feet depending on the selected lane width. It was agreed that this alternative would be further investigated in PE.) Curb extensions will be implemented at signalized intersections, where feasible, and they will be designed to accommodate local fire department trucks and NJ Transit buses.

B. Pedestrian and Bicycle Compatibility

Sidewalks on each side of the roadway will be widened up to one (1) foot. Curb ramps and pedestrian pushbuttons will be brought into compliance with the ADA. Vehicular and pedestrian signals, signing, and pavement markings, including crosswalks, will be upgraded to meet current MUTCD requirements.

Due to the limited width of the roadway and the desire to maintain parking on both sides of Haddon Avenue, Camden County will consider the implementation of shared lane markings through the project limits to increase motorists awareness of bicyclists along Haddon Avenue. The project will also consider signing to encourage bicyclists who are not traveling to a destination within the immediate vicinity, to utilize the Parkside Trail, which runs parallel to the Cooper River and Haddon Avenue between Pine Street and Kaighn Avenue near its intersection with Euclid Avenue, serves as an alternate bicycle route.

C. Pavement

The PPA proposes a full depth HMA section be constructed for this project in accordance with Camden County Development Regulations. The proposed pavement section will consist of a 6-inch thick Dense Graded Aggregate Base Course, 6-inch thick HMA, 19M64, Base Course, and a 2-inch thick HMA, 12.5M64, Surface Course. These dimensions may be increased during design, if additional information is attained, that requires increasing the structural capacity of the proposed HMA pavement section.

D. Streetscape Elements

The PPA provides opportunities for green infrastructure, street trees, street furniture and decorative street lighting. Camden County prefers the use of single, pole mounted luminaire decorative lighting as currently installed at the Haddon Avenue Gateway Project and at the intersection of Haddon Avenue and Kaighns Avenue.

It is also noted that the existing mural at the intersection of Haddon Avenue and Mt. Ephraim Avenue is in need of refurbishment. It was created by artist Kimberly Camp and three other artists as part of a Camden City mural program in the mid 1980s. This mural is approximately 420 feet long and 20 feet high. It is estimated to cost approximately \$75,000 to restore this mural. The community may be able to assist with the painting. Restoration of this mural would be further discussed with the advancement of the Haddon Avenue project.

E. Transit Considerations

Haddon Avenue is a major NJ Transit bus route and several NJ Transit bus stops are located within the project limits, both northbound and southbound. Community outreach efforts indicate that the residents of the area are generally satisfied with the number and location of the existing bus stops.

NJ Transit expressed their desire to provide bus boarding and alighting from or to a raised sidewalk rather than street level. In all conceptual alternatives, boarding or alighting from or to raised sidewalks is accommodated.

NJ Transit also noted the idea of a “bus bulb.” A bus bulb is an elongated curb extension at a bus stop location. Buses would not have to pull into bus turn-outs, therefore speeding the boarding/ alighting process. This can also potentially reduce parking impacts associated with accommodating a bus

turnout. The downside is that bus bulbs will cause buses to block the travel lane when boarding/alighting. GPI has analyzed future traffic conditions considering bus bulbs and the analysis indicates that bus bulbs could be accommodated without significant impacts on traffic flow. The results of this analysis are provided in Appendix E.

NJ Transit also expressed that if a bus stop pullout is required at a curb-extension intersection, the bus stop zone should be 110 feet long.

F. Drainage / Environmental

Camden County is working with CCMUA and the City of Camden regarding the cost benefit ratios for separation of combined sewer system within the City of Camden, including Haddon Ave. The separation of combined sewer system and repair/replacement of the existing combined sewer system along the project limits should be included in the Preliminary Engineering phase. It is anticipated that the stormwater system will be separated from the sanitary system beginning at the most upstream pipe section of the existing combined system within the project limits. The stormwater system will run parallel and in the same direction of flow as the sanitary system and will eventually recombine with the existing combined system just before it leaves the project limits utilizing a section of bituminous lined RCP pipe and a drop inlet. For cost estimation purposes, with direction from Camden County, we are assuming replacement of all the existing combined pipe system with an equitably sized circular RCP pipe to be used as the sanitary sewer system. Sewer laterals were also to be replaced to the limits of the owner's sanitary sewer cleanout.

Field survey of the existing system was hampered by excessive debris in the existing inlet structures and pipes, and the fact that a majority of the manholes had been either paved over or welded shut. Based on the information provided by the City of Camden, there are several different sections of the City's CSO that enter and exit the project limits that were included in the design for the separation of the system. These sections include:

- Flowing south along Haddon Avenue (from beyond the project limits) and from Newton (beyond the project limits); and exiting the project limits on Line Street.
- Flowing north from a manhole south of Spruce Street and collecting flow from Pine Street; and exiting the project limits on Line Street.
- Flowing south from a manhole south of Spruce Street and collecting flow from Walnut Street; and exiting the project limits on Park Blvd.
- Flowing south from a point north of Walnut Street; and exiting the project limits on Park Blvd.
- Flowing south from Mt. Vernon Street (from beyond the project limits); and exiting the project limits on Park Blvd.
- Flowing north from a manhole north of Dr. Charles Brimm Blvd.; and exiting the project limits on Park Blvd.
- Flowing in from Dr. Charles Brimm Blvd. (from beyond the project limits); and flowing south and exiting the project limits on Liberty Street.
- Flowing north from a manhole south of Euclid Avenue, and collecting flow from Euclid Avenue and Crestmont Avenue; and exiting the project limits on Liberty Street.

The CCMUA 36" force-main, which enters the project limits at Newton Avenue and exits the project limits on South 9th Street (with no connection to the City's system), will not be modified as part of this project.

The feasibility of a proposed stormwater drainage system assumes that the new sewer pipe will be sufficiently deep to allow the new, parallel storm drainage system to be constructed above the CSO and the appurtenant sanitary sewer laterals, while still allowing the new sewer pipe to maintain positive flow to the tie-in points with the existing CSO system at the project limits. In addition, the feasibility of a proposed stormwater drainage system assumes that there will be sufficient cover between the bottom of the storm drain trunk line and appurtenant storm lateral crossings and the bottom of the roadway pavement box. Formal calculations were not performed for the location of the proposed inlet structures and pipe sizes for the proposed stormwater system. Locations and sizes were determined using standard design practices utilizing the available information. Additional survey mapping and analysis will need to be obtained in PE to confirm that the proposed stormwater system is physically possible and complies with the standards presented in the Camden County Development Regulations. Also, during the PE phase, coordination with the City and CCMUA is expected in order to identify potential hydraulics issues with their CSO systems resulting from the proposed separation of the CSO system along with mitigation strategies. It must also be noted that the County recently indicated that the CCMUA, in conjunction with the City of Camden, will be advancing a design to address some of the issues with the CSO within the project limits that have also been included as part of the current design for this project. Camden County's intention is for the CD Study's design for the separation of the CSO to proceed "as is" until further information is obtained from the CCMUA. This issue will need to be re-visited during PE.

In addition to separating the existing CSO system, the project also proposes the implementation of Green Infrastructure (GI) practices in the form of rain gardens within the Haddon Avenue right-of-way, provided a firm commitment to maintenance is made by a responsible entity. Since the PPA exceeds one-acre of permanent disturbance due to proposed roadway reconstruction, ADA compliant curb ramps, sidewalk and curbing, the project must comply with the NJDEP SWM Rules. Under the current 2016 NJDEP SWM Rules, water quantity does not need to be addressed since the project is within a tidally influenced area and groundwater recharge does need to be addressed since the project is located within a PA-1 Metropolitan Planning Area. The project is under the ¼ acre threshold; therefore, water quality design is not required. No BMPs are required under the current rules; however, a proposed rule change to the 2016 SWM Rules was published on December 1, 2018 which states that all "major development" must comply with the Rules by applying GI as the primary mitigation BMP. This proposal will most likely be adopted on or before November 30, 2019 and the new Rules will become fully effective one year after adoption. Depending on project schedule, the project may need to comply with the newly adopted NJDEP SWM Rules. If applicable, SWM will need to be addressed through the use of the new NJDEP complaint GI.

Even though the PPA will not exceed the ¼ acre threshold for net new impervious surfacing, under the proposed NJDEP SWM Rules, since the proposed work is taking place within existing paved areas, the pavement areas draining to the new, larger stormwater pipes would count towards and exceed the quarter acre threshold. GPI contacted Gabe Mahon, Chief of the NJDEP Bureau of Non-Point Pollution Control, Division of Water Quality, on March 22, 2019 to confirm this interpretation. Mr. Mahon agreed with this interpretation but emphasized the need to demonstrate that the existing

level of water quality is maintained. Since rain gardens are proposed, there will be a reduction in runoff from travelled pavements and a reduction in net impervious surfacing which would improve the water quality when compared to that of existing conditions. A telephone conversation log that documents this conclusion is provided in Appendix Q. During the PE phase, soils testing and groundwater mounding analysis may need to be performed in order to determine if the proposed GI locations are suitable as all are in close proximity to existing buildings with basements. During PE, it will be necessary to assess each rain garden's feasibility to drain to the proposed stormwater system.

In terms of environmental permitting, the PPA does encroach upon a tidal NJDEP Flood Hazard Area (FHA) of the Delaware River. Proposed regulated activities include full depth pavement reconstruction and construction of curbing, rain gardens, sidewalk, and ADA compliant ramps. Since the project exceeds the one-acre threshold for permanent disturbance and is considered a "major development," the project is not eligible to use any FHA Permits-by-Rule. Therefore, the project will need an FHA Individual Permit.

G. Utility Impacts

The PPA may require overhead utility poles to be relocated in order to accommodate ADA compliant curb ramps at intersections. In addition, proposed traffic signal improvements could require relocation of overhead utility wires due to electrical proximity and visual obstruction issues.

The PPA assumes that the CSO system will be replaced with separate sanitary and storm sewer systems connected to existing systems at the project limits. The County originally anticipated that a new storm sewer would be built, and the existing system would be lined or replaced "in place" and serve as the sanitary system only. However, disruption of sanitary sewer service will need to be minimized, likely requiring the proposed sanitary sewer to be constructed offline of the existing system to maintain continuous service to the affected customers. The location of these new facilities may impact adjacent underground facilities.

The depth of the existing water lines may affect the pavement design. It was noted from similar projects nearby that the water lines were 10" from the top of the pavement.

It is recommended that wire elevations be obtained during PE to determine any electrical proximity or visual obstruction issues with proposed traffic signal improvements. It also is recommended that subsurface utility engineering be conducted during PE to determine the exact location and depth of the existing underground utilities. Once this information is obtained, utility impacts and relocations will need to be discussed with the respective utility companies in conjunction with discussions concerning any utility improvements that utility companies may wish to perform in conjunction with the project (prior to the installation of the new sidewalks, curbs, and roadway pavement).

It must be noted that, as per clarification provided by the County, all utility relocations that are required for this project (aside from the sewer work for the City of Camden) would be performed by the respective utility companies at their own cost.

H. Right of Way and Access Impacts

Five (5) parcels are anticipated to be impacted, resulting in partial acquisitions or permanent sidewalk easements. These are small parcels at various intersections to accommodate right-turn movements

along with proposed traffic signal equipment, curb ramps or sidewalks. The impacted parcels are shown on PPA plan which is located in Appendix P.

I. Construction Staging

Construction staging will be important in this project due to the numerous residents and business along and surrounding Haddon Avenue. Construction staging alternatives should consider full and partial detours by block or alternating one-way traffic. Access will need to be maintained to residences and businesses throughout construction and consideration of parking impacts during construction will also be important. Temporary sidewalks will need to be established, reducing the travel way in those areas. Should the project progress to PE and FD, construction staging options will need to be explored in more detail. Factors such as utility relocation will have a significant impact on construction staging. Construction staging, however, is not a fatal flaw to the advancement from Concept Development.

J. Cost Estimates

The total construction cost estimate of the PPA, including construction staging and traffic control, is approximately \$20.4 million based on AASHTOWare Cost Estimation System, as amended. Should the CSO efforts be performed separately, this cost would decrease by approximately \$4 million. A copy of the construction cost estimate can be found in Appendix O.

IX. PRELIMINARY ENGINEERING NEXT STEPS/TASKS

A. Schedule

The following are the anticipated start dates and estimated funding needs for the subsequent stages of this project. Start dates are subject funding availability.

Project Delivery Phase	Anticipated Start Date (Fiscal Year)	Estimate
Concept Development	<i>Complete Summer 2020</i>	\$239,000
Preliminary Engineering	Fall 2020 (State FY2021)	\$750,000
Final Design	Fall 2021 (State FY2022)	\$1,000,000
Construction	Spring 2023 (State FY2023)	\$20,383,000

B. Preliminary Engineering Scope Statement

The Scope Statement outlines all tasks needed to conduct PE and FD. The PE Scope Statement can be found in Appendix R.

X. CONCEPT DEVELOPMENT RECOMMENDATION

It is recommended that this project advance to Local Preliminary Engineering.

A. Interagency Review Committee (IRC) Coordination

On May 20, 2020 the project was presented to the IRC, where it was recommended to advance the PPA to the Local Preliminary Engineering Phase. On June 10, 2020, the IRC issued a letter acknowledging that project should advance to the Local Preliminary Engineering, but noted several elements should be addressed, such as bicycle compatibility and community facilities, in the next phase. Documentation of the IRC approval can be found in Appendix V.

APPENDIX A

PURPOSE AND NEED STATEMENT

Purpose and Need Statement

The Purpose and Need Statement sets the stage for consideration of the alternatives and is a fundamental requirement in the development of a project that will require NEPA classification, assessment, and documentation such as a Categorical Exclusion Document, Environmental Impact Statement or Environmental Assessment.

PURPOSE

The purpose of this project is to reconstruct Haddon Avenue from Euclid Avenue to Newton Avenue, making Haddon Avenue safer for pedestrians, cyclists, and motorists; improving traffic flow through the area; bringing the infrastructure to a state of good repair; and establishing a foundation for redevelopment of Haddon Avenue from Euclid Avenue to Newton Avenue.

NEED

Safety: In 2018, the Camden County Police Department (CCPD) provided vehicular crash reports for Haddon Avenue for the three-year period from January 2015 through December 2017. Collision diagrams and a crash analysis were prepared. The results are summarized below.

TOTAL CRASHES	ACTUAL CRASH RATE	2017 STATEWIDE CRASH RATE	OVERREPRESENTATIONS		
			CRASH TYPE	SEVERITY	SURFACE/LIGHT CONDITIONS
81	6.32	4.17	Parked vehicle, left/U-turn, Fixed Object, Pedestrian/ Bicyclist, At intersection	Injury (predominately minor)	Dry/Day and Night

No fatal crashes occurred during the three-year period. The statewide crash rate shown is for State roadways with similar cross sections (two lanes, undivided with no shoulders). CCPD also provided pedestrian crash reports for Haddon Avenue for the five-year period from January 2013 through December 2017. Seventeen (17) pedestrian or bicyclist crashes occurred over this period. The majority of these crashes resulted in injuries, however, no fatalities occurred. The predominant crash types are parked vehicle crashes, fixed object crashes, same-direction rear-end crashes, and right-angle crashes.

Geometric Deficiencies: The following existing Controlling Substandard Design Elements (CSDE) were identified within the study limits during Concept Development:

- Stopping sight distance at the non-signalized intersections along Haddon Avenue at Whitman Avenue, Bradley Avenue, Liberty Street, Sycamore Street, Spruce Street, Division Street, and Mt. Ephraim Avenue.
- Vertical clearance under the structures carrying I-676 (Structure No. 0430-151) and the PATCO rail tracks over Haddon Avenue. The shoulder width under the PATCO rail tracks is also substandard due to the existing piers within the roadway.

Haddon Avenue Reconstruction, Euclid Avenue to Newton Avenue – Local Concept Development

Infrastructure: Pavement conditions are poor throughout the study limits. Sidewalks are in poor condition. Traffic signal equipment is outdated and not compliant with the Manual on Uniform Traffic Control Devices (MUTCD). Pedestrian curb ramps are not compliant with the Americans with Disability Act (ADA). Lighting of pedestrian facilities are lacking.

Traffic Flow: While there is currently little traffic congestion through most of the project limits today, the Haddon Avenue business and residential district is envisioned to be redeveloped. This could generate increased vehicular and pedestrian traffic through the area. Additionally, the City of Camden and Camden County would like to make Haddon Avenue a desired alternate route into downtown Camden. Improvements will need to account for increased vehicular and pedestrian movement.

GOALS AND OBJECTIVES

It is the goal of this project to reconstruct Haddon Avenue, bringing the pavement, sidewalk, curb ramps, signals and signing to a state of good repair and in compliance with ADA and MUTCD standards. It is also the goal of this project to provide reasonable pedestrian and bicycle accommodations in accordance with Camden County's Complete Streets Policy and in line with the City's vision for the redevelopment of Haddon Avenue. Streetscape elements and green infrastructure will also be considered in the development of a preferred alternative. In order to make pavement and sidewalk improvements, it is anticipated that stormwater and sanitary sewer improvements will need to be made. Given that the sewer infrastructure in the project limits is a combined sanitary/storm sewer, this project will provide for the separation of the sanitary and storm sewer.

APPENDIX B

LIST OF EXISTING DOCUMENTATION COLLECTED

The following plans and reports used during Concept Development can be found on the CD provided with this report.

Data	Source	Date ¹
Camden Urban Land Institute Report	Camden County	Jun 2004
Community Based Green Infrastructure for the City of Camden	Rutgers University	Nov 2011
Parkside Neighborhood Revitalization Plan 2017	Camden County	Apr 2017
Camden County 2017 Highway Master Plan Update	Camden County	May 2017
Pavement Design Alternatives Report for Erial Clementon Road (CR 703) from Erial-New Brooklyn Road (CR 706) to Backwood Clementon Road (CR 534)	Camden County	Feb 2015
Camden County Highway Plan	DVRPC	Mar 2015
City of Camden Access Study	DVRPC	Mar 2018
Camden Waterfront Neighborhood Development Initiative Transportation Improvement Report	Cooper's Ferry	Jun 2017
Haddon Avenue (CR 561) Roadway Improvements - Phase I from Euclid Avenue to Vesper Boulevard Plans	Camden County	Jul 2014
CR561 Haddon Avenue Gateway Project, Intersection of Haddon Avenue, Mt. Ephraim Avenue, Pine Street and Line Street Plans	Camden County	Apr 2015
Haddon Avenue (CR 561) Transit Village Roadway Improvements Phase II from Vesper Boulevard to Old White Horse Pike (CR 606A) Plans	Camden County	Jul 2015
Construction Plans for the Mill and Overlay of Berlin Road Between White Horse Road (CR 673) and Linden Avenue (CR 700)	Camden County	Feb 2017
Station Avenue & Atlantic Avenue Pedestrian Improvements	Camden County	May 2018
Progress Report #1-4 for Concrete Slab Replacement, Federal Street (CR 537) Roadway Improvements, From 19th Street to Marlton Pike (CR 601)	Camden County	Dec 2018
Haddon Avenue Sewer Inspection Report	Camden County	Nov 2017
Haddon Avenue Sewer and Water Maps	Camden City	Various
Systems Characterization Report, Camden County Municipal Utilities Authority (CCMUA), City of Camden, City of Gloucester	Camden County	Jan 2019(r)
CCMUA CSO (Combined Sewer Overflow) LTCP Asset Map and Sewersheds in Camden City	Cooper's Ferry	Nov 2016
Camden County Development Regulations	Camden County	Feb 2017(r)
City of Camden Tax Maps	Camden City	Various

¹ (r) indicates revision date.

Data	Source	Date ¹
City of Camden Signal Timing Directives	Camden City	Various
Camden County Standard Hot Mix Asphalt Pavement Detail	Camden County	Mar 2014
Circuit Trails Plan, The Camden Greenway, Camden, NJ	Cooper's Ferry	Jan 2016
Camden City Fire Department Truck Specifications	Camden County	Jan 2019
SEPTA Bus Stop Design Guidelines – Curb Extension Details	SEPTA	Not Dated
PSE&G Lighting Service Agreement and Cost Summary for Lanning Square Gateway	Camden County	Apr 2017
Walter Rand Transportation Center Rider Guide, Bus Routes Map	NJ Transit	May 2019

APPENDIX C

DESIGN COMMUNICATION REPORT

Design Communications Report Approval

Concept Development

PROJECT NAME: Haddon Avenue Concept Development Study,
Euclid Avenue to Newton Avenue, City of Camden

CONSULTING FIRM: Greenman-Pedersen, Inc.

DESIGNER PROJECT MANAGER: Bernard Boerchers, PE

CAMDEN COUNTY PROJECT MANAGER: Kevin Becica, PE, Camden County Engineer

Design Communications Report (DCR) Entries 1-10.

Camden County's Project Manager has approved the DCR identified above. (approved by DCR Entry No.(s)) subject to the certification below of the Designer.

This approval by the Camden County Project Manager is not a certification by Camden County that the above project has been designed in accordance with all applicable State and Federal design standards and requirements or that comments and decisions have been incorporated or satisfactorily resolved. Camden County is fully relying in this regard upon the certification below by the Designer.

Furthermore, the Camden County Project Manager, by signing below on behalf of Camden County, has not waived the Designer's obligations.



Designer's Project Manager / Date



3/27/20

Camden County's Project Manager / Date

Project Review Certification

To the best of the Designer's knowledge, information and belief and based upon the performance of the Designer's duties as set forth in the Camden County and Designer Agreement, the Designer represents that the above project has been designed in accordance with all applicable State and Federal design standards and requirements. Comments and decisions made during the Interactive Communications with the Camden County on design elements and features of the project to this point have been incorporated or satisfactorily resolved, and that the approved DCR entry (or entries) identified above will be incorporated into the Contract Documents accordingly.



Designer's Project Manager / Date



Designer's Principal / Date

Design Communications Report

PROJECT NAME: Haddon Avenue Concept Development Study,
Euclid Avenue to Newton Avenue, City of Camden

DESIGNER: Greenman-Pedersen, Inc.

DESIGNER PROJECT MANAGER: Bernard Boerchers, PE

CAMDEN COUNTY PROJECT MANAGER: Kevin Becica, PE, Camden County Engineer

Design Communications Report Entry Form

Project Name: Haddon Avenue Concept Development Study, Euclid Avenue to Newton Avenue

Design Activity No. Task 3C Field Inventory	Approved September 28, 2018	DCR Entry No. 1 <hr/> Survey / Mapping
Kevin Becica, Camden County PM Bernard Boerchers, GPI PM		
Manhole Invert elevations not collected		
During the survey task it was discovered that most manholes covers were welded shut. It was determined that the City will need to open these manholes and possibly clean them prior to the Preliminary Engineering (PE) Phase so that an accurate survey of inverts can be collected during PE to support sanitary/storm sewer design. GPI's subconsultant, BANC3, contacted the City of Camden for inlet cleaning and access on September 28, 2018 (email from Chayko to the City Engineer), but the City of Camden did not respond.		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved January 8, 2019	DCR Entry No. 2 <hr/> Electrical
Who (NJDOT Project Manager/ SME /Stakeholder /Designer)		
Proposed Decorative Luminaires		
Camden County provided direction that a single post decorative light poles should be proposed, similar to what is installed in the vicinity of Cooper Hospital. This will be noted as the project moves to Preliminary and Final Design.		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved January 10, 2019	DCR Entry No. 3 <hr/> Geometrics
Kevin Becica, Camden County PM Bernard Boerchers, GPI PM		
Lane Widths		
At the January 10, 2019 Alternatives Review Meeting, Ms. Becica noted that NJT requires a minimum lane width of 11 feet for their buses. All alternatives developed provided for a minimum travel lane width of 11 feet.		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved January 10, 2019	DCR Entry No. 4 <hr/> Structures
Kevin Becica, Camden County Engineer Bernie Boerchers, GPI PM		
DRPA/PATCO and I-676 substandard clearance (vertical and horizontal)		
Early in the CD study it was recognized that the vertical clearance for the DRPA/PATCO and the I-676 Bridges over Haddon Avenue are substandard. It was agreed that the vertical clearance issues would not be addressed as part of this project.		

Design Communications Report Entry Form

Project Name: Haddon Avenue Concept Development Study, Euclid Avenue to Newton Avenue

Early in the CD study it was agreed that any improvement concepts would be made within the existing horizontal underclearances of both bridges. Subsequently, the Camden Gateway project made improvements to the cross-section geometry of Haddon Avenue under the bridge and direction was provided to tie any improvements of Haddon Avenue south of the bridges into this geometry.

GPI raised a question regarding the protection around the center pier under the DRPA/PATCO bridge. Currently a guiderail protects the pier. At the January 10, 2019 Alternatives Review Meeting Camden County provided direction that the CD report should recommend that the guiderail be replaced or that the pier be encased in concrete.

Design Activity No.	Approved January 10, 2019	DCR Entry No. 5
		Right of Way
Kevin Becica, Camden County Engineer		
Bernie Boerchers, GPI PM		
Sidewalks and Cross-section relative to adjacent properties		
It is recognized that properties may encroach on the public ROW along Haddon Avenue, such as steps and porches. Direction was provided that any sidewalk replacement should not be closer than 1-foot from the building foundations and stoops. January 10, 2019 Alternatives Review Meeting.		

Design Activity No. Task 5 Select PPA	Approved April 2, 2019	DCR Entry No. 6
		Preliminary Preferred Alternative
Kevin Becica, Camden County Engineer		
Bernie Boerchers, GPI PM		
Support for Alternative 1		
A stakeholders meeting was held on February 7, 2019 followed by a Public Information Center on April 2, 2019. The majority of attendees voted for an alternative supported Alternative 1. An on-line and paper survey also resulted in a majority of support for Alternative 1. See documentation supporting the CD report.		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved April 10, 2019	DCR Entry No. 7
		Geometrics
Kevin Becica, Camden County PM		
Bernard Boerchers, GPI PM		
Consideration of NJT Bus Bump Outs		
During the stakeholder outreach process, NJT expressed a desire for Camden County to explore the use of bus-bulbs that would allow boarding and alighting of NJT buses at curb height while not turning out of the travel lane. This can improve transit efficiency. GPI assessed the potential traffic impact and the use of bus-bulbs appears feasible from a		

Design Communications Report Entry Form

Project Name: Haddon Avenue Concept Development Study, Euclid Avenue to Newton Avenue

traffic analysis perspective. Geometrics will be further explored during the Preliminary Engineering phase. See email from K. Cullen to D. Kuhn on April 10, 2019 and email correspondence between D. Kuhn and M. Slotman of NJT on April 8, 2019. improvements only at the Kaighns Avenue intersection to accommodate the 45' bus as this is a major intersection (See DCR Entry #9). Kevin Becica agreed to this approach.

Design Activity No. Task 4A Develop Engineering Alternatives	Approved June 10, 2019	DCR Entry No. 8
		Drainage/Environmental
Kevin Becica, Camden County Engineer Bernie Boerchers, GPI PM		
<u>Green Stormwater Infrastructure Elements</u>		
The Concept Development Study offered potential Green Stormwater Infrastructure (GSI) elements for consideration in the Haddon Avenue improvements. While generally supported by project stakeholders, there is a question as to who would maintain these elements. On the June 10, 2019 project conference call, it was determined that no GSI elements will be included in the CD plans and that a GSI maintenance commitments determination would be worked out during Preliminary Engineering/Final Design.		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved August 22, 2019	DCR Entry No. 9
		Geometrics
Kevin Becica, Camden County PM Bernard Boerchers, GPI PM		
<u>Consideration of NJT 45' bus accommodation</u>		
<p>At the July 23, 2019 NJDOT SME meeting, NJDOT asked what size buses was NJT intending to use in the future along Haddon Avenue and could the intersections accommodate them. Subsequently, NJT was contacted and Beth Waltrip provided an email to Kathy Cullen, Cooper's Ferry Partnership, indicating that future bus stops should plan for a 45' bus. Articulated buses are not envisioned for this area. Kathy Cullen also provided Dave Kuhn, by email, an NJT Bus Route Map that shows bus routes along Haddon Avenue. It indicates no bus routes turning onto or from Haddon through the project limits. GPI performed an assessment of Alternative 1 with the 45' bus turning template. The result of the assessment is that some stop bars may have to be moved back and some additional ROW may be required.</p>		
<p>At August 22, 2019 conference call, GPI proposed the following. Because no existing bus routes make turns within the limits of the project other than at Pine Street, where improvements have already been made, GPI proposed incorporating channelization improvements only at the Kaighns Avenue intersection to accommodate the 45' bus as this is a major intersection. Kevin Becica agreed to this approach.</p>		

Design Activity No. Task 4A Develop	Approved August 22, 2019	DCR Entry No. 10
		Pavement

Design Communications Report Entry Form

Project Name: Haddon Avenue Concept Development Study, Euclid Avenue to Newton Avenue

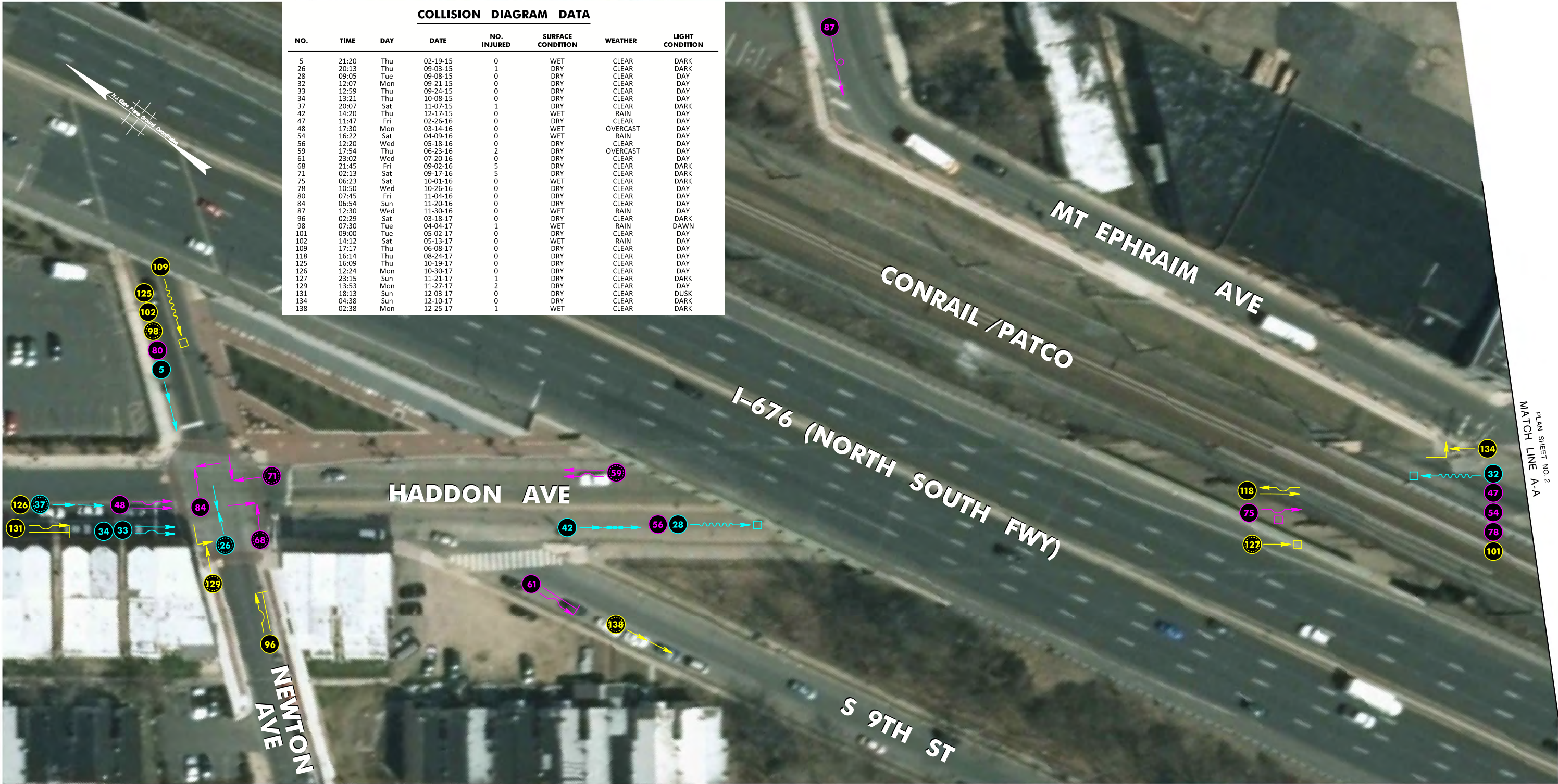
Engineering Alternatives		
Kevin Becica, Camden County PM Bernard Boerchers, GPI PM		
Pavement Design		
<p>At the January 10, 2019 Alternatives Review Meeting, pavement design was discussed. Mr. Boerchers indicated that an overlay between Newton Avenue and Euclid Avenue is not feasible given the condition of the existing pavement. Ms. Becica indicated that a full-depth replacement needs to account for the removal of historic fill and the impacts and costs must be accounted for in the CD report.</p> <p>On August 22, 2019 call, GPI and Camden County discussed pavement options. Full-depth replacement was proposed because it was expected that the existing sewer/storm sewer was going to be replaced. Camden County informed GPI that CCMUA now intends to line the existing brick sewer and Camden County will install a new separate storm sewer. A full-depth replacement may not be required. Direction was provided to provide in the scope of services for PE/FD that the designer should explore pavement options beyond the full-depth solution that will include rubblization, a reduced thickness overlay utilizing concrete gutters with steep slopes to hold existing curb ramp heights, as well as the exploration of High-Performance Thin Overlays. GPI to explore feasibility of these with Ocean County and NJDOT prior to modifying the PE/FD Scope of Services.</p>		

Design Activity No. Task 4A Develop Engineering Alternatives	Approved August 22, 2019	DCR Entry No. 11
		Utilities
Kevin Becica, Camden County Engineer Bernie Boerchers, GPI PM		
Separation of combined sanitary/storm sewer		
<p>At the January 10, 2019 Alternatives Review Meeting, Camden County indicated that the Camden County Municipal Utility Authority (CCMUA) intends to line the brick sewer and use it for sanitary and install a new storm sewer line.</p> <p>During a GPI/Camden County/CFP conference call on June 10, 2019, it was confirmed that lining the existing CSO and reusing it would not be pursued. New sanitary and storm sewer would be installed. Proposed storm sewer pipes were to sized using estimated capacity requirements. Existing sanitary sewer pipes were to be replaced (same location) and sized to match existing pipes.</p> <p>On August 22, 2019 Conference Call direction was provided by Camden County to assume that CCMUA will be lining the existing brick sewer and using for sanitary and the County will be installing new storm sewer within the limits of the project. Camden County will cover the cost of the new storm sewer and CCMUA will cover the cost of lining the existing brick-lined sewer. GPI will not be required to revise the conceptual design, but will estimate the costs of replacing the existing brick sewers and the installation of new storm sewer separately. The CD report will reflect a full replacement of the existing combined system.</p>		

APPENDIX D

COLLISION DIAGRAMS

FILE: K:\Camden\2018\74 Haddon Ave (CR 561) Concept Des Study\CrashWayTraffic\Crash Data\Strees\Ver\Crash Sheet 1.dwg TIME: 8/25/2018 AM DATE: 10/20/18 GREENMAN-PEDERSEN, INC.



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
5	21:20	Thu	02-19-15	0	WET	CLEAR	DARK
26	20:13	Thu	09-03-15	1	DRY	CLEAR	DARK
28	09:05	Tue	09-08-15	0	DRY	CLEAR	DAY
32	12:07	Mon	09-21-15	0	DRY	CLEAR	DAY
33	12:59	Thu	09-24-15	0	DRY	CLEAR	DAY
34	13:21	Thu	10-08-15	0	DRY	CLEAR	DAY
37	20:07	Sat	11-07-15	1	DRY	CLEAR	DARK
42	14:20	Thu	12-17-15	0	WET	RAIN	DAY
47	11:47	Fri	02-26-16	0	DRY	CLEAR	DAY
48	17:30	Mon	03-14-16	0	WET	OVERCAST	DAY
54	16:22	Sat	04-09-16	0	WET	RAIN	DAY
56	12:20	Wed	05-18-16	0	DRY	CLEAR	DAY
59	17:54	Thu	06-23-16	2	DRY	OVERCAST	DAY
61	23:02	Wed	07-20-16	0	DRY	CLEAR	DAY
68	21:45	Fri	09-02-16	5	DRY	CLEAR	DARK
71	02:13	Sat	09-17-16	5	DRY	CLEAR	DARK
75	06:23	Sat	10-01-16	0	WET	CLEAR	DARK
78	10:50	Wed	10-26-16	0	DRY	CLEAR	DAY
80	07:45	Fri	11-04-16	0	DRY	CLEAR	DAY
84	06:54	Sun	11-20-16	0	DRY	CLEAR	DAY
87	12:30	Wed	11-30-16	0	WET	RAIN	DAY
96	02:29	Sat	03-18-17	0	DRY	CLEAR	DARK
98	07:30	Tue	04-04-17	1	WET	RAIN	DAWN
101	09:00	Tue	05-02-17	0	DRY	CLEAR	DAY
102	14:12	Sat	05-13-17	0	WET	RAIN	DAY
109	17:17	Thu	06-08-17	0	DRY	CLEAR	DAY
118	16:14	Thu	08-24-17	0	DRY	CLEAR	DAY
125	16:09	Thu	10-19-17	0	DRY	CLEAR	DAY
126	12:24	Mon	10-30-17	0	DRY	CLEAR	DAY
127	23:15	Sun	11-21-17	1	DRY	CLEAR	DARK
129	13:53	Mon	11-27-17	2	DRY	CLEAR	DAY
131	18:13	Sun	12-03-17	0	DRY	CLEAR	DUSK
134	04:38	Sun	12-10-17	0	DRY	CLEAR	DARK
138	02:38	Mon	12-25-17	1	WET	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	25
INJURIES	9
FATALITIES	0
TOTAL NO. OF CRASHES	34

SYMBOLS			
	MOVING VEHICLE		PEDESTRIAN
	BACKING VEHICLE		BICYCLIST
	PARKED VEHICLE		PROPERTY DAMAGE ONLY CRASH
	INJURY IN CRASH		FATAL CRASH
	FIXED OBJECT		ANIMAL
	NON-FIXED OBJECT		POT HOLE

TYPES OF CRASHES	
	REAR END
	HEAD ON
	SIDE SWIPE
	OUT OF CONTROL
	OVERTURNED
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Concept Des Study\CrashData\Traffic\Crash Data\Streets\Ver\Crash Sheet 2.dwg TIME: 8:25:00 AM DATE: 12/20/18 GREENMAN-PEDERSEN, INC.



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	11:45	Tue	01-06-15	1	WET	SNOW	DAY
6	00:13	Sun	03-08-15	1	DRY	CLEAR	DARK
17	14:48	Fri	06-12-15	0	DRY	CLEAR	DAY
18	10:16	Wed	06-17-15	0	DRY	CLEAR	DAY
21	05:30	Sun	07-26-15	1	DRY	CLEAR	DUSK
29	11:21	Tue	09-08-15	1	DRY	CLEAR	DAY
43	14:28	Thu	01-07-16	1	DRY	CLEAR	DAY
50	17:46	Mon	03-21-16	2	DRY	CLEAR	DAY
65	17:05	Fri	08-26-16	0	DRY	CLEAR	DAY
67	13:07	Fri	09-02-16	0	DRY	CLEAR	DAY
70	23:55	Fri	09-16-16	0	DRY	CLEAR	DARK
79	08:44	Wed	11-02-16	1	DRY	CLEAR	DAY
83	00:24	Thu	11-17-16	0	DRY	CLEAR	DARK
85	23:22	Fri	11-25-16	0	DRY	CLEAR	DARK
88	18:32	Mon	12-19-16	1	DRY	CLEAR	DARK
94	12:42	Sat	01-21-17	1	DRY	CLEAR	DARK
95	08:06	Fri	01-27-17	0	DRY	CLEAR	DAY
107	11:37	Mon	05-29-17	0	DRY	CLEAR	DARK
108	14:06	Fri	06-02-17	1	DRY	CLEAR	DAY
130	03:15	Sat	12-02-17	2	DRY	CLEAR	DARK
135	12:00	Sun	12-10-17	0	DRY	CLEAR	DAY
137	10:49	Sat	12-23-17	0	WET	RAIN	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY

INJURIES

FATALITIES

TOTAL NO. OF CRASHES

11

11

0

22

SYMBOLS

MOVING VEHICLE

BACKING VEHICLE

PARKED VEHICLE

PEDESTRIAN

BICYCLIST

PROPERTY DAMAGE ONLY CRASH

INJURY IN CRASH

FIXED OBJECT

NON-FIXED OBJECT

FATAL CRASH

ANIMAL

POTHOLE

TYPES OF CRASHES

REAR END

HEAD ON

SIDE SWIPE

OUT OF CONTROL

OVERTURNED

LEFT TURN

RIGHT ANGLE

STRUCK PARKED VEHICLE

COLORS

2015 CRASHES

2016 CRASHES

2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)

between Newton Avenue and Euclid Avenue

Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

GPI

Greenman-Pedersen, Inc.

Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Connect Der Study\CrashWay\Traffic\Crash Data\Streets\Ver\Crash Sheet 3.aht
TIME: 8:27:33 AM
DATE: 12/20/18
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 2
MATCH LINE B-B

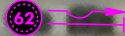
COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
62	07:15	Sat	08-06-16	1	DRY	CLEAR	DAY

HADDON AVE

WALNUT ST

MT VERNON ST



PLAN SHEET NO. 4
MATCH LINE C-C

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	0
INJURIES	1
FATALITIES	0
TOTAL NO. OF CRASHES	1

SYMBOLS			
	MOVING VEHICLE		BICYCLIST
	BACKING VEHICLE		PROPERTY DAMAGE ONLY CRASH
	PARKED VEHICLE		FATAL CRASH
	INJURY IN CRASH		ANIMAL
	FIXED OBJECT		POT HOLE
	NON-FIXED OBJECT		

TYPES OF CRASHES			
	REAR END		LEFT TURN
	HEAD ON		RIGHT ANGLE
	SIDE SWIPE		STRUCK PARKED VEHICLE
	OUT OF CONTROL		
	OVERTURNED		

COLORS
2015 CRASHES
2016 CRASHES
2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2016\74 Haddon Ave (CR 561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ver\Crash Sheet Left
TIME: 8:28:33 AM
DATE: 12/20/19
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 3
MATCH LINE C-C



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
8	12:13	Sat	03-14-15	0	WET	RAIN	DAY
13	20:25	Sat	04-04-15	2	DRY	CLEAR	DARK
30	09:07	Fri	09-11-15	0	DRY	CLEAR	DAY
36	09:52	Sat	10-17-15	0	DRY	CLEAR	DAY
39	15:34	Wed	12-02-15	1	WET	RAIN	DAY
41	11:00	Tue	12-15-15	0	DRY	CLEAR	DAY
63	23:27	Tue	08-23-16	1	DRY	CLEAR	DARK
72	11:04	Sun	09-18-16	2	DRY	OVERCAST	DAY
73	20:10	Sun	09-25-16	0	DRY	CLEAR	DARK
89	00:00	Sat	12-24-16	2	WET	RAIN	DAY
97	08:30	Tue	03-21-17	1	DRY	RAIN	DAY
104	18:25	Tue	05-16-17	2	DRY	CLEAR	DAY
106	01:47	Mon	05-22-17	1	DRY	CLEAR	DARK
113	13:45	Sun	07-30-17	0	DRY	CLEAR	DAY
114	04:58	Fri	08-04-17	1	DRY	CLEAR	DARK
116	10:31	Tue	08-15-17	0	WET	RAIN	DAY
117	17:00	Wed	08-16-17	0	DRY	CLEAR	DAY
124	18:16	Wed	10-18-17	0	DRY	CLEAR	DAY
132	17:44	Tue	12-05-17	0	WET	RAIN	DARK

PLAN SHEET NO. 5
MATCH LINE D-D

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY

INJURIES

FATALITIES

TOTAL NO. OF CRASHES

10

9

0

19

SYMBOLS

MOVING VEHICLE

BACKING VEHICLE

PARKED VEHICLE

PEDESTRIAN

BICYCLIST

PROPERTY DAMAGE ONLY CRASH

INJURY IN CRASH

FIXED OBJECT

NON-FIXED OBJECT

FATAL CRASH

ANIMAL

POTHOLE

TYPES OF CRASHES

REAR END

HEAD ON

SIDE SWIPE

OUT OF CONTROL

OVERTURNED

LEFT TURN

RIGHT ANGLE

STRUCK PARKED VEHICLE

COLORS

2015 CRASHES

2016 CRASHES

2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)

between Newton Avenue and Euclid Avenue

Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

GPI

Greenman-Pedersen, Inc.

Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2016\74 Haddon Ave (CR561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ver\Crash Sheet 5.aht
TIME: 8:25:43 AM
DATE: 12/20/19
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 4
MATCH LINE D-D






MATCH LINE E-E
PLAN SHEET NO. 6

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	15
INJURIES	7
FATALITIES	0
TOTAL NO. OF CRASHES	22

SYMBOLS	
	MOVING VEHICLE
	BACKING VEHICLE
	PARKED VEHICLE
	PEDESTRIAN
	BICYCLIST
	PROPERTY DAMAGE ONLY CRASH
	INJURY IN CRASH
	FATAL CRASH
	FIXED OBJECT
	ANIMAL
	POTHOLE
	NON-FIXED OBJECT

TYPES OF CRASHES	
	REAR END
	HEAD ON
	SIDE SWIPE
	OUT OF CONTROL
	OVERTURNED
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018074_Haddon Ave (CR561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ver\Crash Sheet 5a.tif
DATE: 12/20/18
TIME: 9:00:27 AM
PLAN SHEET NO. 5
MATCH LINE E-E



COLLISION DIAGRAM DATA								
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION	
3	17:29	Mon	02-19-15	2	WET	CLEAR	DARK	
4	13:33	Fri	02-13-15	2	DRY	CLEAR	DAY	
16	16:53	Wed	05-06-15	0	DRY	CLEAR	DAY	
20	13:25	Sat	06-27-15	1	WET	RAIN	DAY	
27	09:58	Sun	09-06-15	1	DRY	CLEAR	DAY	
35	00:30	Thu	10-15-15	1	DRY	CLEAR	DARK	
49	17:17	Tue	03-15-16	0	DRY	CLEAR	DAY	
58	20:03	Sun	06-19-16	1	DRY	CLEAR	DAY	
60	15:06	Thu	06-30-16	0	DRY	CLEAR	DAY	
82	16:01	Thu	11-10-16	0	DRY	CLEAR	DAY	
91	20:46	Sun	01-01-17	0	DRY	CLEAR	DARK	
99	10:37	Sat	04-15-17	0	DRY	CLEAR	DAY	
100	11:59	Tue	04-18-17	0	DRY	CLEAR	DAY	

LEGEND

NUMBER OF CRASHES WITH		SYMBOLS		TYPES OF CRASHES		COLORS	
PROPERTY DAMAGE ONLY	7	MOVING VEHICLE		REAR END	LEFT TURN	2015 CRASHES	
INJURIES	6	BACKING VEHICLE		HEAD ON	RIGHT ANGLE	2016 CRASHES	
FATALITIES	0	PARKED VEHICLE		SIDE SWIPE		2017 CRASHES	
TOTAL NO. OF CRASHES	13	PEDESTRIAN	BICYCLIST	OUT OF CONTROL	STRUCK PARKED VEHICLE		
		PROPERTY DAMAGE ONLY CRASH		OVERTURNED			
		INJURY IN CRASH	FATAL CRASH				
		FIXED OBJECT	ANIMAL				
		NON-FIXED OBJECT	POTHOLE				

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2016\74 Haddon Ave (CR561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ver\Crash Sheet 7.aht
TIME: 9:01:50 AM
DATE: 12/20/19
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 6
MATCH LINE F-F



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
12	16:55	Wed	04-01-15	0	DRY	CLEAR	DAY
14	22:48	Sun	04-12-15	0	DRY	CLEAR	DARK
53	08:05	Sat	04-02-16	1	WET	RAIN	DAY
77	03:06	Sat	10-23-16	0	DRY	CLEAR	DAY
92	10:43	Mon	01-02-17	0	WET	RAIN	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	4
INJURIES	1
FATALITIES	0
TOTAL NO. OF CRASHES	5

SYMBOLS

	MOVING VEHICLE		PEDESTRIAN		BICYCLIST
	BACKING VEHICLE		PROPERTY DAMAGE ONLY CRASH		FATAL CRASH
	PARKED VEHICLE		INJURY IN CRASH		ANIMAL
	FIXED OBJECT		NON-FIXED OBJECT		POTHOLE

TYPES OF CRASHES

	REAR END		LEFT TURN
	HEAD ON		RIGHT ANGLE
	SIDE SWIPE		STRUCK PARKED VEHICLE
	OUT OF CONTROL		
	OVERTURNED		

COLORS

- 2015 CRASHES
- 2016 CRASHES
- 2017 CRASHES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2015-2017 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE



PLAN SHEET NO. 2
MATCH LINE A-A

LEGEND

FILE: K:\Camden\2018074_Haddon Ave (CR 561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ped\Crash Sheet 1.dwg TIME: 8/4/2018 8:45:27 AM DATE: 10/20/18 GREENMAN-PEDERSEN, INC.

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	0
INJURIES	0
FATALITIES	0
TOTAL NO. OF CRASHES	0

SYMBOLS	
	MOVING VEHICLE
	BACKING VEHICLE
	PARKED VEHICLE
	PEDESTRIAN
	BICYCLIST
	PROPERTY DAMAGE ONLY CRASH
	INJURY IN CRASH
	FATAL CRASH
	FIXED OBJECT
	ANIMAL
	POTHOLE
	NON-FIXED OBJECT

TYPES OF CRASHES	
	REAR END
	HEAD ON
	SIDE SWIPE
	OUT OF CONTROL
	OVERTURNED
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS
PEDESTRIAN CRASH

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMSGPIGreenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Concept Dev Study\Crashway\Traffic\Crash Data\Streets\Ped\Crash Sheet 2.a11
TIME: 8:48:27 AM
DATE: 12/20/19
GREENMAN-PEDERSEN, INC.



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
11	19:15	Fri	08-21-15	1	DRY	CLEAR	DAY
19	17:30	Mon	10-17-16	1	DRY	CLEAR	DAY
21	13:20	Tue	06-27-17	1	DRY	CLEAR	DAY
23	12:58	Tue	08-15-17	1	WET	RAIN	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY

INJURIES

FATALITIES

TOTAL NO. OF CRASHES

0

4

0

4

SYMBOLS

MOVING VEHICLE

BACKING VEHICLE

PARKED VEHICLE

PEDESTRIAN

BICYCLIST

PROPERTY DAMAGE ONLY CRASH

INJURY IN CRASH

FIXED OBJECT

NON-FIXED OBJECT

FATAL CRASH

ANIMAL

POT HOLE

TYPES OF CRASHES

REAR END

HEAD ON

SIDE SWIPE

OUT OF CONTROL

OVERTURNED

LEFT TURN

RIGHT ANGLE

STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)

between Newton Avenue and Euclid Avenue

Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI

Greenman-Pedersen, Inc.

Engineering and Construction Services

NOT TO SCALE

PLAN SHEET NO. 3
MATCH LINE B-B

2 / 7

FILE: K:\Camden\2018\74_Haddon Ave (CR561) Concept Des Study\CrashWay\Traffic\Crash Data\Streets\Ped\Crash Sheet 3.sh
TIME: 8:49:25 AM
DATE: 12/12/18
GREENMAN-PEDERSEN, INC.

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
15	11:01	Sat	12-12-15	1	DRY	CLEAR	DAY



LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	0
INJURIES	1
FATALITIES	0
TOTAL NO. OF CRASHES	1

SYMBOLS	
	MOVING VEHICLE
	BACKING VEHICLE
	PARKED VEHICLE
	PEDESTRIAN
	BICYCLIST
	PROPERTY DAMAGE ONLY CRASH
	INJURY IN CRASH
	FATAL CRASH
	FIXED OBJECT
	ANIMAL
	POTHOLE
	NON-FIXED OBJECT

TYPES OF CRASHES	
	REAR END
	HEAD ON
	SIDE SWIPE
	OUT OF CONTROL
	OVERTURNED
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS
PEDESTRIAN CRASH

3 / 7

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR 561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Plan Sheet 4.sht
DATE: 12/20/18
TIME: 9:01:52 AM
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 3
MATCH LINE C-C



PLAN SHEET NO. 5
MATCH LINE D-D

LEGEND

NUMBER OF CRASHES WITH		SYMBOLS		TYPES OF CRASHES		COLORS	
PROPERTY DAMAGE ONLY	0	MOVING VEHICLE		REAR END	LEFT TURN	PEDESTRIAN CRASH	CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS
INJURIES	5	BACKING VEHICLE		HEAD ON	RIGHT ANGLE		
FATALITIES	0	PARKED VEHICLE		SIDE SWIPE	OUT OF CONTROL		
TOTAL NO. OF CRASHES	5	PEDESTRIAN	BICYCLIST	OVERTURNED	STRUCK PARKED VEHICLE		
		PROPERTY DAMAGE ONLY CRASH					
		INJURY IN CRASH	FATAL CRASH				NOT TO SCALE
		FIXED OBJECT	ANIMAL				
		NON-FIXED OBJECT	POTHOLE				

4 / 7

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Concept Des Study\Crashway\Traffic\Crash Data\Streets\Plan\Crash Sheet 5.shx
DATE: 12/20/18
TIME: 8:51:50 AM
GREENMAN-PEDERSEN, INC.

PLAN SHEET NO. 4
MATCH LINE D-D



MATCH LINE E-E
PLAN SHEET NO. 6

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	2
INJURIES	6
FATALITIES	0
TOTAL NO. OF CRASHES	8

SYMBOLS	
	MOVING VEHICLE
	BACKING VEHICLE
	PARKED VEHICLE
	PEDESTRIAN
	BICYCLIST
	PROPERTY DAMAGE ONLY CRASH
	INJURY IN CRASH
	FATAL CRASH
	FIXED OBJECT
	ANIMAL
	POT HOLE
	NON-FIXED OBJECT

TYPES OF CRASHES	
	REAR END
	HEAD ON
	SIDE SWIPE
	OUT OF CONTROL
	OVERTURNED
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS
PEDESTRIAN CRASH

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Concept Des Study\CrashWayTraffic\Crash Data\Streets\Ped\Crash Sheet E-8.dwg
TIME: 8/25/2018 8:05:25 AM
DATE: 10/1/2018

PLAN SHEET NO. 5
MATCH LINE E-E



COLLISION DIAGRAM DATA								
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION	
4	18:27	Fri	03-21-14	1	DRY	CLEAR	DARK	
6	23:00	Sun	03-23-14	1	DRY	CLEAR	DARK	
8	17:12	Sat	08-30-14	0	DRY	CLEAR	DARK	
9	15:30	Fri	03-27-15	1	DRY	CLEAR	DAY	
25	17:28	Thu	12-21-17	1	DRY	CLEAR	DARK	

PLAN SHEET NO. 7
MATCH LINE F-F

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY

INJURIES

FATALITIES

TOTAL NO. OF CRASHES

1

4

0

5

SYMBOLS

MOVING VEHICLE

BACKING VEHICLE

PARKED VEHICLE

PEDESTRIAN

BICYCLIST

PROPERTY DAMAGE ONLY CRASH

INJURY IN CRASH

FIXED OBJECT

NON-FIXED OBJECT

FATAL CRASH

ANIMAL

POTHOLE

TYPES OF CRASHES

REAR END

HEAD ON

SIDE SWIPE

OUT OF CONTROL

OVERTURNED

LEFT TURN

RIGHT ANGLE

STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)

between Newton Avenue and Euclid Avenue

Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI

Greenman-Pedersen, Inc.

Engineering and Construction Services

NOT TO SCALE

FILE: K:\Camden\2018\74 Haddon Ave (CR561) Concept Dev Study\CrashWayTraffic\Crash Data\Streets\Ped\Crash Sheet 7.aht
TIME: 8/25/2018 8:25:25 AM
DATE: 10/2/2018

PLAN SHEET NO. 6
MATCH LINE F-F



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
10	19:30	Sat	08-08-15	1	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH		SYMBOLS		TYPES OF CRASHES		COLORS
PROPERTY DAMAGE ONLY	0	MOVING VEHICLE	BACKING VEHICLE	REAR END	LEFT TURN	
INJURIES	1	PARKED VEHICLE	PEDESTRIAN	HEAD ON	RIGHT ANGLE	PEDESTRIAN CRASH
FATALITIES	0	PROPERTY DAMAGE ONLY CRASH	BICYCLIST	SIDE SWIPE		
TOTAL NO. OF CRASHES	1	INJURY IN CRASH	FATAL CRASH	OUT OF CONTROL	STRUCK PARKED VEHICLE	
		FIXED OBJECT	ANIMAL	OVERTURNED		
		NON-FIXED OBJECT	POTHOLE			

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

Haddon Ave (CR 561)
between Newton Avenue and Euclid Avenue
Camden Township, Camden County

2013-2017 PEDESTRIAN COLLISION DIAGRAMS

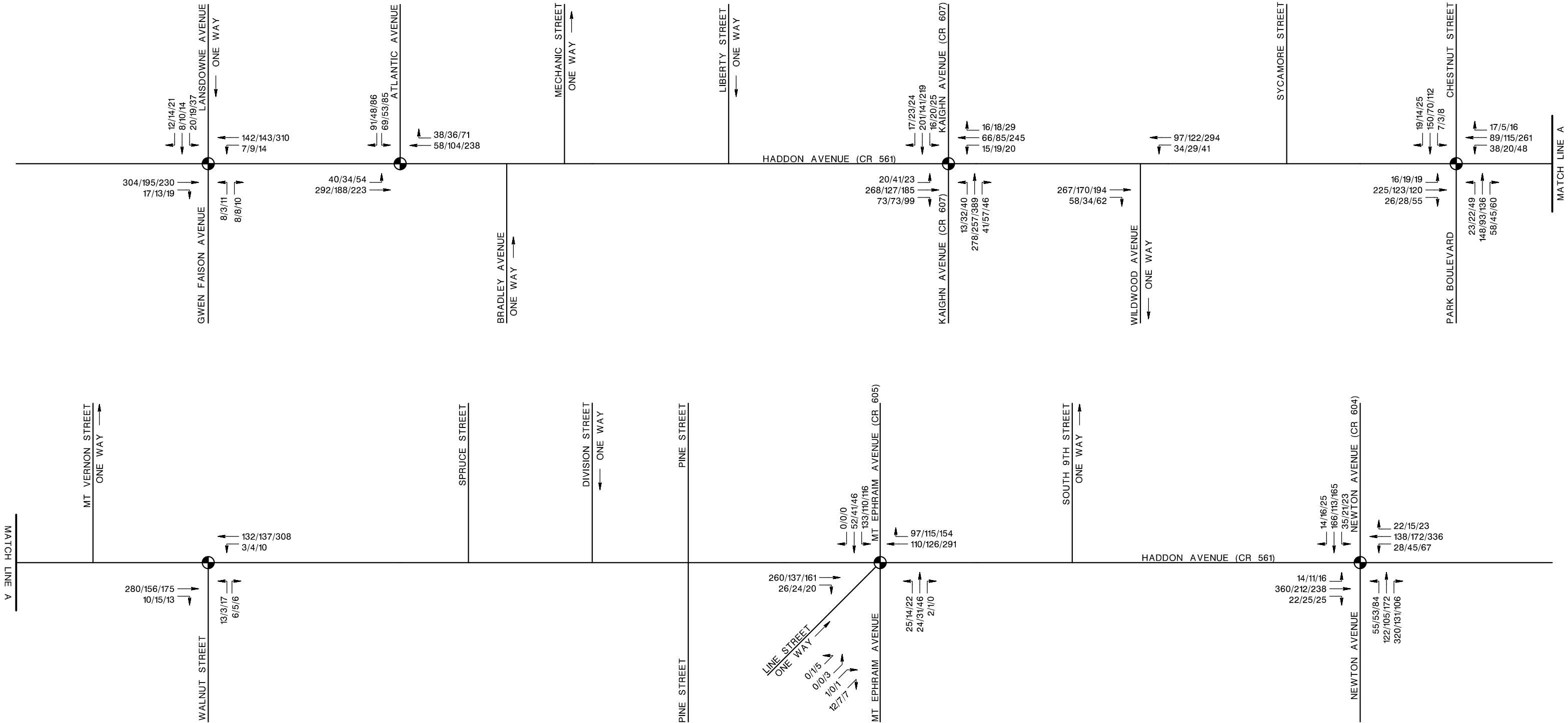
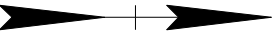
Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

APPENDIX E

TRAFFIC DATA AND FLOW DIAGRAM

PEAK HOURS:
AM: 7:30 - 8:30
MID: 11:30 - 12:30
PM: 4:00 - 5:00



NOTES:
Manual Turning Movement Counts performed on Wednesday, October 10, 2018 by Techniquet Corporation.

Legend
Signalized Intersection
AM/MIDDAY/PM PEAK HOURS (MANUAL)

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

EXISTING VOLUMES (BALANCED)
AM/MIDDAY/PM PEAK HOUR
HADDON AVENUE (CR 561)
EUCLID AVENUE TO NEWTON AVENUE (CR 604)
FLOW DIAGRAM
CAMDEN CITY
CAMDEN COUNTY

N.T.S. OCTOBER 2018

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT - CONCEPT DEVELOPMENT STUDY

DVRPC Population and Employment Forecasts									
County	Municipality	Population				Employment			
		2015	2025	2035	2045	2015	2025	2035	2045
Camden	--	510,923	517,073	522,886	526,997	263,582	266,753	269,750	271,869
Camden	Camden City	76,119	76,904	77,643	78,169	41,786	43,370	44,850	45,992

DVRPC Forecasts Annual Percent Growth									
County	Municipality	Population				Employment			
		2015-2025	2025-2035	2035-2045	2015-2045	2015-2025	2025-2035	2035-2045	2015-2045
Camden	--	0.12%	0.11%	0.08%	0.10%	0.12%	0.11%	0.08%	0.10%
Camden	Camden City	0.10%	0.10%	0.07%	0.09%	0.37%	0.34%	0.25%	0.32%

DVRPC Forecasts Annual Percent Growth					
County	Municipality	Average			
		2015 - 2025	2025 - 2035	2035 - 2045	2015 - 2045
Camden	--	0.12%	0.11%	0.08%	0.10%
Camden	Camden City	0.24%	0.22%	0.16%	0.20%
Average		0.18%	0.16%	0.12%	0.15%

We will use the DVRPC Travel Demand Model growth rate (highlighted orange in the Travel Demand Model tab) since it is a more conservative growth rate.

Synchro Growth Rate		
2018-2045	1.04	No-Build/Build



GPI Job No. 2018674

Made By: JMD

Checked By: JS

Date: 11/9/2018

Date: 11/12/2018

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT - CONCEPT DEVELOPMENT STUDY

DVRPC Provided Travel Demand Model Forecasts		
Roadway	Functional Class	Average Annual Percent Growth 2015 - 2045
Haddon Ave -- from Newton Ave to Mt. Ephraim Ave	Other Principal Arterial	0.38%
Haddon Ave -- from Mt. Ephraim Ave to Euclid Ave	Minor Arterial	0.20%
Newton Ave at Haddon Ave	Minor Arterial	0.20%
S. 9th St at Haddon Ave	Major Collector	0.58%
Mt. Ephraim Ave at Haddon Ave	Other Principal Arterial	0.38%
Pine St at Haddon Ave	Major Collector	0.58%
Chestnut St at Haddon Ave	Major Collector	0.58%
Dr. Charles Brimm Blvd	Minor Arterial	0.20%
Euclid Ave at Haddon Ave	Major Collector	0.58%
Vesper Blvd at Haddon Ave	Major Collector	0.58%
Average	-	0.43%

We will use the DVRPC Travel Demand Model growth rate (highlighted orange) since it is a more conservative growth rate than the DVRPC Population and Employment growth

Synchro Growth Rate		
2018-2045	1.12	No-Build/Build

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
AM

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Gwen Faison Avenue EB L	C	25.2	0.10	29	C	25.0	0.09	30	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26
Gwen Faison Avenue EB TR	C	25.4	0.10	28	C	25.2	0.11	31	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27
Lansdowne Avenue WB LTR	C	25.5	0.08	24	C	25.4	0.09	27	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24
Haddon Avenue (CR 561) NB TR	A	5.2	0.22	144	A	5.3	0.24	161	A	7.0	0.28	168	A	7.1	0.28	170	A	7.2	0.29	172	A	7.2	0.29	172	A	6.8	0.26	163
Haddon Avenue (CR 561) SB LT	A	4.9	0.10	64	A	4.9	0.12	75	A	2.8	0.13	30	A	2.8	0.13	30	A	2.9	0.14	29	A	2.9	0.14	29	A	2.9	0.13	29
Intersection LOS	A	7.4	-	-	A	7.4	-	-	A	7.8	-	-	A	7.8	-	-	A	7.9	-	-	A	7.9	-	-	A	7.6	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	14.3	0.44	68	B	14.7	0.45	78	B	14.8	0.49	72	B	14.8	0.49	72	B	15.2	0.49	74	B	15.2	0.49	74	B	14.8	0.49	72
Haddon Avenue (CR 561) NB LT	A	6.2	0.32	96	A	6.5	0.35	109	A	4.8	0.35	17	A	4.8	0.35	17	A	5.0	0.36	17	A	5.0	0.36	17	A	4.5	0.32	17
Haddon Avenue (CR 561) SB TR	A	3.1	0.09	23	A	3.2	0.10	25	A	2.5	0.10	19	A	2.5	0.10	19	A	3.2	0.11	48	A	3.2	0.11	48	A	2.4	0.10	26
Intersection LOS	A	8.0	-	-	A	8.2	-	-	A	7.1	-	-	A	7.1	-	-	A	7.5	-	-	A	7.5	-	-	A	6.9	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Kaighn Avenue (CR 607) EB LTR	B	14.1	0.28	115	B	14.6	0.32	131	B	14.1	0.35	120	B	14.1	0.35	120	B	14.9	0.36	124	B	14.9	0.36	124	B	14.1	0.35	120
Kaighn Avenue (CR 607) WB LTR	B	15.3	0.38	157	B	16.2	0.45	189	B	15.9	0.49	173	B	15.9	0.49	173	B	16.9	0.51	179	B	16.9	0.51	179	B	15.9	0.49	173
Haddon Avenue (CR 561) NB LTR	B	15.9	0.48	181	B	17.0	0.54	208	A	8.7	0.55	51	A	8.9	0.55	51	A	8.2	0.55	51	A	8.2	0.55	51	A	8.0	0.50	51
Haddon Avenue (CR 561) SB LTR	B	10.9	0.15	50	B	11.1	0.15	55	A	8.8	0.16	31	A	8.9	0.16	31	A	8.5	0.16	27	A	8.5	0.16	27	A	7.9	0.16	27
Intersection LOS	B	14.8	-	-	B	15.7	-	-	B	12.3	-	-	B	12.3	-	-	B	12.6	-	-	B	12.6	-	-	B	12.0	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.22	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0
Haddon Avenue (CR 561) SB LT	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3
Intersection LOS	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Chestnut Street EB LTR	C	26.2	0.48	113	C	26.5	0.50	126	C	21.0	0.46	103	C	21.0	0.46	103	C	21.0	0.46	103	C	21.0	0.46	103	C	20.9	0.46	102
Park Boulevard WB LT	C	30.8	0.58	118	C	31.1	0.59	131	C	24.6	0.54	108	C	24.6	0.54	108	C	24.6	0.54	108	C	24.6	0.54	108	C	24.5	0.54	107
Park Boulevard WB R	A	9.6	0.19	28	A	10.0	0.19	32	A	6.0	0.17	23	A	6.0	0.17	23	A	6.2	0.18	24	A	6.2	0.18	24	A	5.8	0.17	23
Haddon Avenue (CR 561) NB LTR	A	6.6	0.22	90	A	7.0	0.26	108	A	5.0	0.31	86	A	5.0	0.31	84	A	5.4	0.32	64	A	5.4	0.32	64	A	5.0	0.29	103
Haddon Avenue (CR 561) SB LTR	A	6.0	0.14	53	A	6.2	0.16	59	A	7.7	0.19	80	A	7.8	0.19	81	A	9.0	0.20	94	A	9.1	0.20	94	A	9.6	0.19	96
Intersection LOS	B	16.5	-	-	B	16.3	-	-	B	13.1	-	-	B	13.1	-	-	B	13.5	-	-	B	13.5	-	-	B	13.4	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Walnut Street WB LR	C	26.8	0.11	24	C	26.9	0.12	27	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26
Haddon Avenue (CR 561) NB TR	A	1.3	0.18	53	A	1.3	0.20	61	A	0.8	0.20	30	A	0.8	0.20	30	A	0.6	0.21	11	A	0.6	0.21	11	A	0.5	0.18	14
Haddon Avenue (CR 561) SB LT	A	1.2	0.09	26	A	1.2	0.09	29	A	0.5	0.09	10	A	0.5	0.10	10	A	0.8	0.10	5	A	0.8	0.10	5	A	0.5	0.10	7
Intersection LOS	A	2.4	-	-	A	2.4	-	-	A	1.7	-	-	A	1.7	-	-	A	1.7	-	-	A	1.7	-	-	A	1.5	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
AM

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR	Intersection Not Counted; Improvements Not Yet Constructed and Volumes Not Yet Rerouted				C	27.0	0.66	121	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120
Pine Street WB LTR					B	15.8	0.17	39	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38
Haddon Avenue (CR 561) NB LTR					A	7.6	0.25	87	A	3.5	0.23	21	A	3.5	0.24	21	A	3.2	0.25	29	A	3.2	0.25	29	A	3.2	0.22	30
Haddon Avenue (CR 561) SB LTR					A	7.8	0.26	88	A	7.1	0.25	m77	A	7.3	0.25	m79	A	7.1	0.25	m77	A	7.3	0.25	m79	A	7.3	0.25	m79
Intersection LOS					B	13.9	-	-	B	13.2	-	-	B	13.3	-	-	B	13.1	-	-	B	13.2	-	-	B	13.2	-	-

7B - Haddon Avenue (CR 561) & Mt. Ephraim Avenue (CR 605) / Mt. Ephraim Avenue / Line Street (2018 - Signalized, 2045 - Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Mt. Ephraim Avenue (CR 605) EB L	C	21.2	0.33	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue (CR 605) EB LTR	C	20.2	0.30	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB LTR	B	17.9	0.15	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB R	-	-	-	-	B	10.2	0.00	0	B	10.2	0.00	0	B	10.2	0.00	0	B	10.2	0.00	0	B	10.2	0.00	0	B	10.2	0.00	0
Haddon Avenue (CR 561) NB T/TR	A	7.5	0.17	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) NB TR	-	-	-	-	A	0.0	0.24	0	A	0.0	0.24	0	A	0.0	0.24	0	A	0.0	0.24	0	A	0.0	0.24	0	A	0.0	0.24	0
Haddon Avenue (CR 561) SB T/TR	A	7.5	0.12	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) SB T	-	-	-	-	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0
Line Street NWB LR	A	0.2	0.04	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Line Street NWB R	-	-	-	-	B	13.8	0.00	0	B	13.8	0.00	0	B	13.8	0.00	0	B	13.8	0.00	0	B	13.8	0.00	0	B	13.8	0.00	0
Intersection LOS	B	11.4	-	-	A	0.1	-	-	A	0.1	-	-	A	0.1	-	-	A	0.1	-	-	A	0.1	-	-	A	0.1	-	-

8 - Haddon Avenue (CR 561) & Newton Avenue (CR 604) / Newton Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Newton Avenue (CR 604) EB LTR	C	33.7	0.68	#177	D	39.1	0.75	#214	B	16.3	0.46	114	B	16.3	0.46	114	B	16.3	0.46	114	B	16.3	0.46	114	B	16.3	0.46	114
Newton Avenue WB LTR	F	82.5	1.07	#393	F	104.6	1.13	#457	C	23.4	0.84	#261	C	23.4	0.84	#261	C	23.4	0.84	#261	C	23.4	0.84	#261	C	23.4	0.84	#261
Haddon Avenue (CR 561) NB LT/TR	A	7.8	0.26	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Haddon Avenue (CR 561) NB LTR	-	-	-	-	B	10.8	0.48	178	B	16.8	0.63	#230	B	16.8	0.63	#231	B	17.2	0.63	#231	B	17.2	0.63	#231	B	17.7	0.63	#229
Haddon Avenue (CR 561) SB LTR	A	7.4	0.21	67	A	7.7	0.24	74	B	13.1	0.31	102	B	13.2	0.32	103	B	13.1	0.31	102	B	13.2	0.32	103	B	13.2	0.32	103
Intersection LOS	D	40.8	-	-	D	51.0	-	-	B	18.7	-	-	B	18.7	-	-	B	18.9	-	-	B	18.9	-	-	B	19.0	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
MD

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Gwen Faison Avenue EB L	C	26.2	0.09	27	C	26.2	0.10	29	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26
Gwen Faison Avenue EB TR	C	26.6	0.13	32	C	26.7	0.13	34	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30
Lansdowne Avenue WB LTR	C	26.4	0.06	19	C	26.4	0.07	22	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19
Haddon Avenue (CR 561) NB TR	A	5.9	0.15	89	A	6.0	0.17	102	A	6.5	0.18	107	A	6.6	0.19	108	A	6.7	0.19	108	A	6.7	0.19	108	A	6.4	0.17	105
Haddon Avenue (CR 561) SB LT	A	5.9	0.12	69	A	5.9	0.13	76	A	4.1	0.13	51	A	4.0	0.13	51	A	4.4	0.14	53	A	4.4	0.14	53	A	4.1	0.13	51
Intersection LOS	A	8.7	-	-	A	8.6	-	-	A	8.0	-	-	A	8.1	-	-	A	8.2	-	-	A	8.2	-	-	A	8.0	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	14.8	0.31	52	B	14.9	0.32	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58
Haddon Avenue (CR 561) NB LT	A	4.4	0.19	56	A	4.5	0.21	63	A	3.6	0.21	16	A	3.6	0.21	16	A	3.4	0.22	16	A	3.4	0.22	16	A	3.2	0.19	16
Haddon Avenue (CR 561) SB TR	A	3.3	0.12	30	A	3.4	0.13	34	A	2.1	0.13	10	A	2.1	0.13	10	A	2.3	0.13	8	A	2.3	0.14	8	A	2.1	0.13	10
Intersection LOS	A	6.4	-	-	A	6.4	-	-	A	5.9	-	-	A	5.9	-	-	A	5.8	-	-	A	5.8	-	-	A	5.7	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Kaighn Avenue (CR 607) EB LTR	B	13.8	0.25	94	B	14.0	0.26	104	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90
Kaighn Avenue (CR 607) WB LTR	B	16.3	0.45	181	B	17.0	0.49	202	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173
Haddon Avenue (CR 561) NB LTR	B	12.8	0.34	113	B	13.5	0.38	127	A	8.2	0.42	39	A	8.3	0.42	39	A	8.5	0.44	44	A	8.5	0.44	44	A	7.9	0.39	41
Haddon Avenue (CR 561) SB LTR	B	11.9	0.18	61	B	11.9	0.19	68	A	8.7	0.21	41	A	8.8	0.21	42	B	10.9	0.22	48	B	10.9	0.22	48	B	10.2	0.21	44
Intersection LOS	B	14.2	-	-	B	14.7	-	-	B	11.5	-	-	B	11.6	-	-	B	11.9	-	-	B	11.9	-	-	B	11.6	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.13	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0
Haddon Avenue (CR 561) SB LT	A	1.6	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2
Intersection LOS	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Chestnut Street EB LTR	C	23.3	0.29	65	C	22.9	0.30	69	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58
Park Boulevard WB LT	C	30.7	0.45	90	C	30.8	0.48	98	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83
Park Boulevard WB R	A	8.9	0.17	25	A	8.5	0.18	25	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22
Haddon Avenue (CR 561) NB LTR	A	4.4	0.14	50	A	4.7	0.15	57	A	4.4	0.17	40	A	4.4	0.17	40	A	4.4	0.18	41	A	4.4	0.18	41	A	4.5	0.16	36
Haddon Avenue (CR 561) SB LTR	A	4.7	0.12	45	A	5.0	0.12	51	A	6.5	0.14	17	A	6.4	0.14	16	A	4.7	0.15	36	A	4.8	0.15	37	A	4.5	0.14	31
Intersection LOS	B	12.9	-	-	B	13.3	-	-	B	11.7	-	-	B	11.6	-	-	B	11.2	-	-	B	11.2	-	-	B	11.2	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Walnut Street WB LR	C	28.9	0.06	17	C	28.9	0.06	18	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15
Haddon Avenue (CR 561) NB TR	A	1.0	0.11	30	A	1.0	0.12	33	A	0.7	0.12	20	A	0.7	0.12	20	A	1.0	0.12	23	A	1.0	0.12	23	A	0.9	0.11	20
Haddon Avenue (CR 561) SB LT	A	1.0	0.09	26	A	1.0	0.10	29	A	0.6	0.10	14	A	0.7	0.10	15	A	0.5	0.10	9	A	0.5	0.10	9	A	0.3	0.10	6
Intersection LOS	A	1.7	-	-	A	1.7	-	-	A	1.3	-	-	A	1.3	-	-	A	1.4	-	-	A	1.4	-	-	A	1.2	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
MD

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR	Intersection Not Counted; Improvements Not Yet Constructed and Volumes Not Yet Rerouted				C	28.6	0.63	108	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106
Pine Street WB LTR					B	17.6	0.17	40	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39
Haddon Avenue (CR 561) NB LTR					A	6.5	0.21	73	A	4.2	0.20	23	A	4.3	0.21	24	A	4.2	0.22	31	A	4.2	0.22	31	A	4.0	0.19	33
Haddon Avenue (CR 561) SB LTR					A	7.1	0.29	95	A	6.5	0.27	98	A	6.6	0.27	101	A	4.4	0.27	51	A	4.4	0.27	51	A	4.4	0.27	51
Intersection LOS					B	13.0	-	-	B	12.7	-	-	B	12.8	-	-	B	11.9	-	-	B	11.9	-	-	B	11.8	-	-

7B - Haddon Avenue (CR 561) & Mt. Ephraim Avenue (CR 605) / Mt. Ephraim Avenue / Line Street (2018 - Signalized, 2045 - Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Mt. Ephraim Avenue (CR 605) EB L	C	20.5	0.28	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue (CR 605) EB LTR	B	19.9	0.26	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB LTR	B	18.0	0.13	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB R	-	-	-	-	B	10.1	0.00	0	B	10.1	0.00	0	B	10.1	0.00	0	B	10.1	0.00	0	B	10.1	0.00	0	B	10.1	0.00	0
Haddon Avenue (CR 561) NB T/TR	A	7.3	0.09	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) NB TR	-	-	-	-	A	0.0	0.21	0	A	0.0	0.21	0	A	0.0	0.21	0	A	0.0	0.21	0	A	0.0	0.21	0	A	0.0	0.21	0
Haddon Avenue (CR 561) SB T/TR	A	7.3	0.15	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) SB T	-	-	-	-	A	0.0	0.17	0	A	0.0	0.17	0	A	0.0	0.17	0	A	0.0	0.17	0	A	0.0	0.17	0	A	0.0	0.17	0
Line Street NWB LR	A	0.1	0.02	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Line Street NWB R	-	-	-	-	B	14.4	0.02	2	B	14.4	0.02	2	B	14.4	0.02	2	B	14.4	0.02	2	B	14.4	0.02	2	B	14.4	0.02	2
Intersection LOS	B	11.3	-	-	A	0.2	-	-	A	0.2	-	-	A	0.2	-	-	A	0.2	-	-	A	0.2	-	-	A	0.2	-	-

8 - Haddon Avenue (CR 561) & Newton Avenue (CR 604) / Newton Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Newton Avenue (CR 604) EB LTR	C	23.9	0.43	104	C	24.1	0.44	115	B	17.5	0.38	81	B	17.5	0.38	81	B	17.5	0.38	81	B	17.5	0.38	81	B	17.5	0.38	81
Newton Avenue WB LTR	C	32.4	0.77	180	C	34.0	0.79	#232	C	21.2	0.69	139	C	21.2	0.69	139	C	21.2	0.69	139	C	21.2	0.69	139	C	21.2	0.69	139
Haddon Avenue (CR 561) NB LT/TR	A	6.2	0.16	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) NB LTR	-	-	-	-	A	8.0	0.30	100	A	9.0	0.33	87	A	9.0	0.33	87	B	12.1	0.33	81	B	12.1	0.33	81	B	12.1	0.33	139
Haddon Avenue (CR 561) SB LTR	A	7.9	0.27	85	A	8.1	0.28	95	B	10.7	0.32	121	B	10.9	0.33	122	B	10.7	0.32	121	B	10.9	0.33	122	B	10.9	0.33	122
Intersection LOS	B	17.8	-	-	B	18.9	-	-	B	14.7	-	-	B	14.7	-	-	B	15.5	-	-	B	15.5	-	-	B	15.5	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
PM

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Gwen Faison Avenue EB L	C	29.3	0.19	43	C	29.3	0.19	47	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41
Gwen Faison Avenue EB TR	C	29.5	0.19	42	C	29.6	0.20	45	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40
Lansdowne Avenue WB LTR	C	29.3	0.12	30	C	29.4	0.13	32	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27
Haddon Avenue (CR 561) NB TR	A	7.8	0.21	114	A	7.9	0.22	128	A	6.7	0.22	127	A	6.7	0.22	128	A	6.8	0.23	130	A	6.8	0.23	130	A	6.5	0.20	125
Haddon Avenue (CR 561) SB LT	A	8.1	0.24	144	A	8.5	0.28	171	A	3.0	0.28	82	A	3.0	0.28	82	A	3.1	0.29	82	A	3.1	0.29	84	A	3.0	0.28	82
Intersection LOS	B	11.1	-	-	B	11.2	-	-	A	7.6	-	-	A	7.6	-	-	A	7.7	-	-	A	7.7	-	-	A	7.5	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	17.2	0.47	82	B	17.5	0.48	93	B	17.1	0.51	85	B	17.1	0.51	85	B	17.3	0.51	86	B	17.3	0.51	86	B	17.1	0.51	85
Haddon Avenue (CR 561) NB LT	A	6.1	0.30	86	A	6.3	0.32	98	A	4.7	0.33	16	A	4.7	0.33	16	A	4.8	0.34	16	A	4.8	0.34	16	A	4.4	0.30	16
Haddon Avenue (CR 561) SB TR	A	5.3	0.29	86	A	5.6	0.32	99	A	2.5	0.32	21	A	2.6	0.33	21	A	2.8	0.34	24	A	2.8	0.34	24	A	2.7	0.33	19
Intersection LOS	A	8.3	-	-	A	8.6	-	-	A	6.6	-	-	A	6.6	-	-	A	6.8	-	-	A	6.8	-	-	A	6.6	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Kaighn Avenue (CR 607) EB LTR	B	15.0	0.35	138	B	15.4	0.38	152	B	11.6	0.35	121	B	11.6	0.35	121	B	12.4	0.37	126	B	12.4	0.37	126	B	11.6	0.35	121
Kaighn Avenue (CR 607) WB LTR	B	18.5	0.58	246	C	20.8	0.67	299	B	15.5	0.62	238	B	15.5	0.62	238	B	16.8	0.64	247	B	16.8	0.64	247	B	15.5	0.62	238
Haddon Avenue (CR 561) NB LTR	B	14.5	0.45	146	B	14.9	0.47	166	B	13.1	0.56	75	B	13.2	0.57	75	B	12.4	0.56	69	B	12.4	0.56	69	B	11.8	0.52	74
Haddon Avenue (CR 561) SB LTR	B	15.6	0.43	150	B	15.9	0.45	168	B	13.0	0.54	86	B	13.1	0.54	87	B	12.5	0.53	84	B	12.6	0.53	84	B	13.5	0.54	84
Intersection LOS	B	16.2	-	-	B	17.3	-	-	B	13.6	-	-	B	13.7	-	-	B	14.0	-	-	B	14.0	-	-	B	13.5	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.16	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0
Haddon Avenue (CR 561) SB LT	A	1.3	0.03	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3
Intersection LOS	A	0.7	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Chestnut Street EB LTR	C	22.5	0.38	92	C	22.6	0.39	102	B	17.5	0.36	82	B	17.5	0.36	82	B	17.9	0.36	84	B	17.9	0.36	84	B	17.5	0.36	82
Park Boulevard WB LT	C	33.0	0.64	130	C	33.6	0.66	146	C	25.4	0.58	117	C	25.4	0.58	117	C	26.1	0.59	121	C	26.1	0.59	121	C	25.4	0.58	117
Park Boulevard WB R	B	10.1	0.19	30	B	10.4	0.19	35	A	6.7	0.17	25	A	6.7	0.17	25	A	7.1	0.18	27	A	7.1	0.18	27	A	6.7	0.17	25
Haddon Avenue (CR 561) NB LTR	A	5.8	0.20	62	A	5.9	0.20	69	A	5.7	0.25	m56	A	5.7	0.25	m56	A	5.8	0.25	m68	A	5.8	0.25	m68	A	5.4	0.23	m70
Haddon Avenue (CR 561) SB LTR	A	7.9	0.32	125	A	8.2	0.34	139	A	3.1	0.41	30	A	3.0	0.41	30	A	3.2	0.42	29	A	3.1	0.42	29	A	3.1	0.41	29
Intersection LOS	B	15.1	-	-	B	15.3	-	-	B	10.7	-	-	B	10.7	-	-	B	11.0	-	-	B	11.0	-	-	B	10.7	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Walnut Street WB LR	C	27.5	0.14	28	C	27.4	0.14	31	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29
Haddon Avenue (CR 561) NB TR	A	1.9	0.13	35	A	2.0	0.14	39	A	1.7	0.14	35	A	1.7	0.14	35	A	1.8	0.15	36	A	1.8	0.15	36	A	2.0	0.13	42
Haddon Avenue (CR 561) SB LT	A	2.2	0.21	63	A	2.3	0.23	70	A	1.4	0.24	28	A	1.5	0.24	29	A	1.2	0.24	10	A	1.3	0.25	11	A	1.1	0.24	5
Intersection LOS	A	3.2	-	-	A	3.3	-	-	A	2.5	-	-	A	2.6	-	-	A	2.5	-	-	A	2.5	-	-	A	2.4	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604)
Concept Development Study
Level of Service (LOS) Comparison
PM

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR	Intersection Not Counted; Improvements Not Yet Constructed and Volumes Not Yet Rerouted				C	32.5	0.65	130	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120
Pine Street WB LTR					C	22.2	0.29	66	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61
Haddon Avenue (CR 561) NB LTR					A	6.3	0.14	58	A	8.3	0.14	57	A	8.3	0.15	56	A	8.5	0.15	56	A	8.5	0.15	56	A	8.2	0.13	50
Haddon Avenue (CR 561) SB LTR					A	9.8	0.53	236	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82
Intersection LOS					B	14.8	-	-	B	12.5	-	-	B	12.5	-	-	B	12.5	-	-	B	12.5	-	-	B	12.4	-	-

7B - Haddon Avenue (CR 561) & Mt. Ephraim Avenue (CR 605) / Mt. Ephraim Avenue / Line Street (2018 - Signalized, 2045 - Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Mt. Ephraim Avenue (CR 605) EB L	C	20.8	0.30	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue (CR 605) EB LTR	C	20.0	0.28	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB LTR	B	18.5	0.18	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mt. Ephraim Avenue WB R	-	-	-	-	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0
Haddon Avenue (CR 561) NB T/TR	A	7.3	0.10	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) NB TR	-	-	-	-	A	0.0	0.13	0	A	0.0	0.13	0	A	0.0	0.13	0	A	0.0	0.13	0	A	0.0	0.13	0	A	0.0	0.13	0
Haddon Avenue (CR 561) SB T/TR	A	7.9	0.27	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haddon Avenue (CR 561) SB T	-	-	-	-	A	0.0	0.32	0	A	0.0	0.32	0	A	0.0	0.32	0	A	0.0	0.32	0	A	0.0	0.32	0	A	0.0	0.32	0
Line Street NWB LR	A	0.2	0.05	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Line Street NWB R	-	-	-	-	C	15.7	0.00	0	C	15.6	0.00	0	C	15.6	0.00	0	C	15.6	0.00	0	C	15.6	0.00	0	C	15.6	0.00	0
Intersection LOS	B	10.7	-	-	A	0.0	-	-	A	0.0	-	-	A	0.0	-	-	A	0.0	-	-	A	0.0	-	-	A	0.0	-	-

8 - Haddon Avenue (CR 561) & Newton Avenue (CR 604) / Newton Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Newton Avenue (CR 604) EB LTR	C	24.9	0.49	143	C	26.7	0.56	162	B	15.8	0.43	107	B	15.8	0.43	107	B	15.8	0.43	107	B	15.8	0.43	107	B	15.8	0.43	107
Newton Avenue WB LTR	D	52.2	0.92	#318	E	77.4	1.03	#365	C	24.9	0.77	196	C	24.9	0.77	196	C	24.9	0.77	196	C	24.9	0.77	196	C	24.9	0.77	196
Haddon Avenue (CR 561) NB LT/TR	A	6.9	0.18	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Haddon Avenue (CR 561) NB LTR	-	-	-	-	A	9.0	0.35	115	B	16.5	0.44	178	B	16.5	0.44	179	B	16.4	0.44	178	B	16.4	0.44	178	B	16.5	0.44	178
Haddon Avenue (CR 561) SB LTR	B	10.9	0.49	177	B	11.7	0.54	202	C	20.7	0.67	#317	C	21.8	0.70	#325	C	20.7	0.67	#317	C	21.8	0.70	#325	C	21.8	0.70	#325
Intersection LOS	C	23.8	-	-	C	32.2	-	-	C	20.1	-	-	C	20.5	-	-	C	20.1	-	-	C	20.5	-	-	C	20.5	-	-

NOTES:

1. '#' - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
2. 'm' - Volume for the 95th percentile queue is metered by an upstream signal.
3. 'dl' - Defacto Left Lane.
4. 'dr' - Defacto Right Lane.

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-01

Site Code : 2018-063-01

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					Gwen Faison Avenue Westbound					Haddon Avenue Northbound					Lansdowne Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	43	0	4	48	0	0	3	4	7	0	40	3	3	46	3	1	4	7	15	116
07:15 AM	2	36	0	0	38	0	0	3	5	8	0	71	3	1	75	4	2	6	5	17	138
07:30 AM	2	44	4	2	52	4	0	2	6	12	0	82	4	10	96	5	0	1	16	22	182
07:45 AM	4	46	0	1	51	1	0	1	15	17	0	80	5	11	96	5	1	6	9	21	185
Total	9	169	4	7	189	5	0	9	30	44	0	273	15	25	313	17	4	17	37	75	621
08:00 AM	1	52	0	3	56	1	0	1	7	9	0	57	4	6	67	8	5	1	10	24	156
08:15 AM	2	47	0	4	53	2	0	4	14	20	0	85	4	3	92	2	2	4	11	19	184
08:30 AM	6	56	0	5	67	1	0	1	7	9	0	53	1	7	61	4	5	8	16	33	170
08:45 AM	2	48	0	0	50	1	0	3	3	7	0	41	6	5	52	6	4	4	4	18	127
Total	11	203	0	12	226	5	0	9	31	45	0	236	15	21	272	20	16	17	41	94	637
09:00 AM	2	48	0	3	53	3	0	2	5	10	0	50	2	0	52	5	2	2	1	10	125
09:15 AM	1	46	0	0	47	0	0	1	5	6	0	47	5	1	53	1	3	4	5	13	119
Total	3	94	0	3	100	3	0	3	10	16	0	97	7	1	105	6	5	6	6	23	244
10:30 AM	1	41	0	5	47	3	0	1	0	4	0	46	3	4	53	0	2	3	3	8	112
10:45 AM	2	40	0	1	43	0	0	3	1	4	0	40	1	3	44	4	1	2	4	11	102
Total	3	81	0	6	90	3	0	4	1	8	0	86	4	7	97	4	3	5	7	19	214
11:00 AM	2	40	0	2	44	1	0	1	3	5	0	43	0	0	43	4	4	3	4	15	107
11:15 AM	2	31	0	0	33	0	0	2	1	3	0	33	1	2	36	1	0	4	2	7	79
11:30 AM	4	48	0	1	53	1	0	1	0	2	0	43	2	1	46	6	2	2	4	14	115
11:45 AM	1	34	0	2	37	1	0	3	5	9	0	42	4	2	48	3	1	4	9	17	111
Total	9	153	0	5	167	3	0	7	9	19	0	161	7	5	173	14	7	13	19	53	412
12:00 PM	1	34	0	6	41	1	0	1	3	5	0	47	4	1	52	4	1	3	4	12	110
12:15 PM	4	49	0	4	57	0	0	3	5	8	0	48	2	0	50	5	5	4	5	19	134
Total	5	83	0	10	98	1	0	4	8	13	0	95	6	1	102	9	6	7	9	31	244
03:30 PM	3	55	0	12	70	1	0	1	8	10	0	65	0	5	70	7	3	3	6	19	169
03:45 PM	7	66	2	4	79	2	0	5	4	11	0	68	8	12	88	7	2	5	5	19	197
Total	10	121	2	16	149	3	0	6	12	21	0	133	8	17	158	14	5	8	11	38	366

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-01

Site Code : 2018-063-01

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					Gwen Faison Avenue Westbound					Haddon Avenue Northbound					Lansdowne Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	5	79	1	4	89	4	0	1	9	14	0	72	4	8	84	10	4	7	5	26	213
04:15 PM	4	82	1	3	90	2	0	4	2	8	0	52	5	2	59	8	3	5	10	26	183
04:30 PM	3	83	1	6	93	2	0	2	0	4	0	50	3	3	56	6	2	4	7	19	172
04:45 PM	3	89	0	8	100	3	0	3	8	14	0	41	6	11	58	13	5	5	9	32	204
Total	15	333	3	21	372	11	0	10	19	40	0	215	18	24	257	37	14	21	31	103	772
05:00 PM	4	76	2	8	90	6	0	3	9	18	0	59	9	15	83	6	1	11	12	30	221
05:15 PM	7	88	1	6	102	3	1	3	6	13	0	42	7	7	56	8	6	9	17	40	211
Grand Total	76	1401	12	94	1583	43	1	58	135	237	0	1397	96	123	1616	135	67	114	190	506	3942
Apprch %	4.8	88.5	0.8	5.9		18.1	0.4	24.5	57		0	86.4	5.9	7.6		26.7	13.2	22.5	37.5		
Total %	1.9	35.5	0.3	2.4	40.2	1.1	0	1.5	3.4	6	0	35.4	2.4	3.1	41	3.4	1.7	2.9	4.8	12.8	
Cars	74	1315	12	0	1401	43	1	57	0	101	0	1326	93	0	1419	123	65	109	0	297	3218
% Cars	97.4	93.9	100	0	88.5	100	100	98.3	0	42.6	0	94.9	96.9	0	87.8	91.1	97	95.6	0	58.7	81.6
Light Trucks	2	83	0	0	85	0	0	1	0	1	0	69	3	0	72	12	2	5	0	19	177
% Light Trucks	2.6	5.9	0	0	5.4	0	0	1.7	0	0.4	0	4.9	3.1	0	4.5	8.9	3	4.4	0	3.8	4.5
Heavy Trucks	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
% Heavy Trucks	0	0.2	0	0	0.2	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0.1
Pedestrians	0	0	0	94	94	0	0	0	135	135	0	0	0	123	123	0	0	0	190	190	542
% Pedestrians	0	0	0	100	5.9	0	0	0	100	57	0	0	0	100	7.6	0	0	0	100	37.5	13.7

	Haddon Avenue Southbound					Gwen Faison Avenue Westbound					Haddon Avenue Northbound					Lansdowne Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	44	4	2	52	4	0	2	6	12	0	82	4	10	96	5	0	1	16	22	182
07:45 AM	4	46	0	1	51	1	0	1	15	17	0	80	5	11	96	5	1	6	9	21	185
08:00 AM	1	52	0	3	56	1	0	1	7	9	0	57	4	6	67	8	5	1	10	24	156
08:15 AM	2	47	0	4	53	2	0	4	14	20	0	85	4	3	92	2	2	4	11	19	184
Total Volume	9	189	4	10	212	8	0	8	42	58	0	304	17	30	351	20	8	12	46	86	707
% App. Total	4.2	89.2	1.9	4.7		13.8	0	13.8	72.4		0	86.6	4.8	8.5		23.3	9.3	14	53.5		
PHF	.563	.909	.250	.625	.946	.500	.000	.500	.700	.725	.000	.894	.850	.682	.914	.625	.400	.500	.719	.896	.955

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-01

Site Code : 2018-063-01

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound					Gwen Faison Avenue Westbound					Haddon Avenue Northbound					Lansdowne Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	4	48	0	1	53	1	0	1	0	2	0	43	2	1	46	6	2	2	4	14	115
11:45 AM	1	34	0	2	37	1	0	3	5	9	0	42	4	2	48	3	1	4	9	17	111
12:00 PM	1	34	0	6	41	1	0	1	3	5	0	47	4	1	52	4	1	3	4	12	110
12:15 PM	4	49	0	4	57	0	0	3	5	8	0	48	2	0	50	5	5	4	5	19	134
Total Volume	10	165	0	13	188	3	0	8	13	24	0	180	12	4	196	18	9	13	22	62	470
% App. Total	5.3	87.8	0	6.9		12.5	0	33.3	54.2		0	91.8	6.1	2		29	14.5	21	35.5		
PHF	.625	.842	.000	.542	.825	.750	.000	.667	.650	.667	.000	.938	.750	.500	.942	.750	.450	.813	.611	.816	.877
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	83	1	6	93	2	0	2	0	4	0	50	3	3	56	6	2	4	7	19	172
04:45 PM	3	89	0	8	100	3	0	3	8	14	0	41	6	11	58	13	5	5	9	32	204
05:00 PM	4	76	2	8	90	6	0	3	9	18	0	59	9	15	83	6	1	11	12	30	221
05:15 PM	7	88	1	6	102	3	1	3	6	13	0	42	7	7	56	8	6	9	17	40	211
Total Volume	17	336	4	28	385	14	1	11	23	49	0	192	25	36	253	33	14	29	45	121	808
% App. Total	4.4	87.3	1	7.3		28.6	2	22.4	46.9		0	75.9	9.9	14.2		27.3	11.6	24	37.2		
PHF	.607	.944	.500	.875	.944	.583	.250	.917	.639	.681	.000	.814	.694	.600	.762	.635	.583	.659	.662	.756	.914

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-02

Site Code : 2018-063-02

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound				Haddon Avenue Northbound				Atlantic Avenue Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
07:00 AM	33	8	0	41	12	40	4	56	3	16	2	21	118
07:15 AM	23	9	0	32	12	65	1	78	11	18	0	29	139
07:30 AM	26	13	1	40	15	77	0	92	12	25	7	44	176
07:45 AM	26	22	0	48	13	72	0	85	13	17	2	32	165
Total	108	52	1	161	52	254	5	311	39	76	11	126	598
08:00 AM	28	14	0	42	2	64	0	66	25	26	2	53	161
08:15 AM	26	21	0	47	9	75	1	85	19	23	4	46	178
08:30 AM	44	19	0	63	6	58	1	65	19	18	4	41	169
08:45 AM	26	7	0	33	12	40	0	52	11	22	3	36	121
Total	124	61	0	185	29	237	2	268	74	89	13	176	629
09:00 AM	35	10	0	45	5	52	0	57	11	16	1	28	130
09:15 AM	31	6	0	37	8	40	0	48	8	16	3	27	112
Total	66	16	0	82	13	92	0	105	19	32	4	55	242
10:30 AM	30	6	0	36	6	46	1	53	6	14	0	20	109
10:45 AM	29	9	0	38	12	37	0	49	8	15	3	26	113
Total	59	15	0	74	18	83	1	102	14	29	3	46	222
11:00 AM	27	10	0	37	3	43	1	47	7	13	2	22	106
11:15 AM	27	12	0	39	6	30	0	36	12	12	1	25	100
11:30 AM	37	12	0	49	10	40	0	50	6	14	1	21	120
11:45 AM	25	14	0	39	5	41	2	48	13	9	2	24	111
Total	116	48	0	164	24	154	3	181	38	48	6	92	437
12:00 PM	27	10	0	37	11	40	0	51	14	9	0	23	111
12:15 PM	43	10	0	53	5	51	1	57	16	12	4	32	142
Total	70	20	0	90	16	91	1	108	30	21	4	55	253
03:30 PM	44	16	0	60	18	54	4	76	20	10	3	33	169
03:45 PM	59	17	1	77	19	63	1	83	18	18	3	39	199
Total	103	33	1	137	37	117	5	159	38	28	6	72	368

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-02

Site Code : 2018-063-02

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound				Haddon Avenue Northbound				Atlantic Avenue Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
04:00 PM	57	25	0	82	16	58	0	74	21	26	3	50	206
04:15 PM	67	13	4	84	18	49	0	67	24	18	8	50	201
04:30 PM	73	21	0	94	8	48	0	56	15	17	3	35	185
04:45 PM	76	22	0	98	7	49	2	58	18	18	1	37	193
Total	273	81	4	358	49	204	2	255	78	79	15	172	785
05:00 PM	65	16	0	81	10	56	4	70	18	19	8	45	196
05:15 PM	76	19	0	95	14	39	0	53	17	22	10	49	197
Grand Total	1060	361	6	1427	262	1327	23	1612	365	443	80	888	3927
Apprch %	74.3	25.3	0.4		16.3	82.3	1.4		41.1	49.9	9		
Total %	27	9.2	0.2	36.3	6.7	33.8	0.6	41	9.3	11.3	2	22.6	
Cars	991	350	0	1341	251	1258	0	1509	355	424	0	779	3629
% Cars	93.5	97	0	94	95.8	94.8	0	93.6	97.3	95.7	0	87.7	92.4
Light Trucks	66	11	0	77	11	67	0	78	10	19	0	29	184
% Light Trucks	6.2	3	0	5.4	4.2	5	0	4.8	2.7	4.3	0	3.3	4.7
Heavy Trucks	3	0	0	3	0	2	0	2	0	0	0	0	5
% Heavy Trucks	0.3	0	0	0.2	0	0.2	0	0.1	0	0	0	0	0.1
Pedestrians	0	0	6	6	0	0	23	23	0	0	80	80	109
% Pedestrians	0	0	100	0.4	0	0	100	1.4	0	0	100	9	2.8

	Haddon Avenue Southbound				Haddon Avenue Northbound				Atlantic Avenue Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	26	13	1	40	15	77	0	92	12	25	7	44	176
07:45 AM	26	22	0	48	13	72	0	85	13	17	2	32	165
08:00 AM	28	14	0	42	2	64	0	66	25	26	2	53	161
08:15 AM	26	21	0	47	9	75	1	85	19	23	4	46	178
Total Volume	106	70	1	177	39	288	1	328	69	91	15	175	680
% App. Total	59.9	39.5	0.6		11.9	87.8	0.3		39.4	52	8.6		
PHF	.946	.795	.250	.922	.650	.935	.250	.891	.690	.875	.536	.825	.955

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-02

Site Code : 2018-063-02

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound				Haddon Avenue Northbound				Atlantic Avenue Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	37	12	0	49	10	40	0	50	6	14	1	21	120
11:45 AM	25	14	0	39	5	41	2	48	13	9	2	24	111
12:00 PM	27	10	0	37	11	40	0	51	14	9	0	23	111
12:15 PM	43	10	0	53	5	51	1	57	16	12	4	32	142
Total Volume	132	46	0	178	31	172	3	206	49	44	7	100	484
% App. Total	74.2	25.8	0		15	83.5	1.5		49	44	7		
PHF	.767	.821	.000	.840	.705	.843	.375	.904	.766	.786	.438	.781	.852
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:45 PM													
03:45 PM	59	17	1	77	19	63	1	83	18	18	3	39	199
04:00 PM	57	25	0	82	16	58	0	74	21	26	3	50	206
04:15 PM	67	13	4	84	18	49	0	67	24	18	8	50	201
04:30 PM	73	21	0	94	8	48	0	56	15	17	3	35	185
Total Volume	256	76	5	337	61	218	1	280	78	79	17	174	791
% App. Total	76	22.6	1.5		21.8	77.9	0.4		44.8	45.4	9.8		
PHF	.877	.760	.313	.896	.803	.865	.250	.843	.813	.760	.531	.870	.960

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-03

Site Code : 2018-063-03

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					CR 607 Kaighan Avenue Westbound					Haddon Avenue Northbound					CR 607 Kaighan Avenue Eastbound					Int. Total
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	23	0	1	28	5	63	6	4	78	4	34	16	4	58	1	35	2	1	39	203
07:15 AM	9	14	1	4	28	4	65	5	6	80	4	61	12	1	78	4	47	0	6	57	243
07:30 AM	5	18	3	0	26	3	71	8	5	87	5	70	19	3	97	2	54	3	1	60	270
07:45 AM	5	26	6	4	41	5	69	12	6	92	5	75	24	8	112	8	52	3	3	66	311
Total	23	81	10	9	123	17	268	31	21	337	18	240	71	16	345	15	188	8	11	222	1027
08:00 AM	5	17	4	4	30	3	71	11	4	89	6	64	18	11	99	2	54	6	0	62	280
08:15 AM	3	19	6	0	28	2	67	10	11	90	5	75	16	7	103	4	41	5	1	51	272
08:30 AM	2	27	5	3	37	9	78	8	7	102	6	59	31	3	99	8	49	3	0	60	298
08:45 AM	8	24	4	3	39	5	71	9	4	89	6	46	20	6	78	3	43	3	2	51	257
Total	18	87	19	10	134	19	287	38	26	370	23	244	85	27	379	17	187	17	3	224	1107
09:00 AM	9	28	3	8	48	5	64	10	5	84	7	48	17	1	73	6	38	4	2	50	255
09:15 AM	5	21	2	3	31	7	72	15	4	98	8	34	12	2	56	5	27	2	2	36	221
Total	14	49	5	11	79	12	136	25	9	182	15	82	29	3	129	11	65	6	4	86	476
10:30 AM	6	25	6	2	39	5	52	5	7	69	6	32	11	6	55	3	31	1	3	38	201
10:45 AM	3	18	3	3	27	5	55	13	4	77	9	35	18	4	66	4	43	3	5	55	225
Total	9	43	9	5	66	10	107	18	11	146	15	67	29	10	121	7	74	4	8	93	426
11:00 AM	2	19	5	1	27	5	59	11	5	80	3	43	14	3	63	7	40	3	4	54	224
11:15 AM	5	22	2	4	33	6	67	9	4	86	5	25	22	2	54	5	43	3	5	56	229
11:30 AM	4	27	5	0	36	4	54	11	9	78	8	29	17	13	67	3	29	4	5	41	222
11:45 AM	8	24	7	0	39	6	52	14	4	76	15	38	22	8	83	2	29	6	6	43	241
Total	19	92	19	5	135	21	232	45	22	320	31	135	75	26	267	17	141	16	20	194	916
12:00 PM	5	18	4	0	27	8	68	12	10	98	11	40	21	8	80	7	38	7	1	53	258
12:15 PM	6	32	5	0	43	11	61	15	5	92	13	37	23	16	89	6	33	4	6	49	273
Total	11	50	9	0	70	19	129	27	15	190	24	77	44	24	169	13	71	11	7	102	531
03:30 PM	11	32	3	2	48	9	64	16	6	95	9	50	30	2	91	7	52	2	1	62	296
03:45 PM	4	44	3	0	51	9	83	14	9	115	11	56	27	4	98	8	62	10	6	86	350
Total	15	76	6	2	99	18	147	30	15	210	20	106	57	6	189	15	114	12	7	148	646

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-03

Site Code : 2018-063-03

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					CR 607 Kaighan Avenue Westbound					Haddon Avenue Northbound					CR 607 Kaighan Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	9	48	1	3	61	15	80	9	6	110	8	60	35	3	106	4	52	8	6	70	347
04:15 PM	3	57	6	6	72	6	92	8	7	113	10	60	17	2	89	10	45	4	5	64	338
04:30 PM	3	58	10	6	77	7	88	15	3	113	3	46	33	0	82	4	68	3	3	78	350
04:45 PM	4	66	10	12	92	9	95	10	6	120	6	47	29	4	86	7	54	9	5	75	373
Total	19	229	27	27	302	37	355	42	22	456	27	213	114	9	363	25	219	24	19	287	1408
05:00 PM	5	58	12	1	76	11	94	12	6	123	10	51	38	3	102	3	57	6	8	74	375
05:15 PM	11	46	1	4	62	15	79	12	8	114	6	46	30	6	88	4	51	7	11	73	337
Grand Total	144	811	117	74	1146	179	1834	280	155	2448	189	1261	572	130	2152	127	1167	111	98	1503	7249
Apprch %	12.6	70.8	10.2	6.5		7.3	74.9	11.4	6.3		8.8	58.6	26.6	6		8.4	77.6	7.4	6.5		
Total %	2	11.2	1.6	1	15.8	2.5	25.3	3.9	2.1	33.8	2.6	17.4	7.9	1.8	29.7	1.8	16.1	1.5	1.4	20.7	
Cars	131	750	113	0	994	166	1722	263	0	2151	179	1198	547	0	1924	118	1101	104	0	1323	6392
% Cars	91	92.5	96.6	0	86.7	92.7	93.9	93.9	0	87.9	94.7	95	95.6	0	89.4	92.9	94.3	93.7	0	88	88.2
Light Trucks	12	58	4	0	74	12	109	14	0	135	9	61	24	0	94	9	65	7	0	81	384
% Light Trucks	8.3	7.2	3.4	0	6.5	6.7	5.9	5	0	5.5	4.8	4.8	4.2	0	4.4	7.1	5.6	6.3	0	5.4	5.3
Heavy Trucks	1	3	0	0	4	1	3	3	0	7	1	2	1	0	4	0	1	0	0	1	16
% Heavy Trucks	0.7	0.4	0	0	0.3	0.6	0.2	1.1	0	0.3	0.5	0.2	0.2	0	0.2	0	0.1	0	0	0.1	0.2
Pedestrians	0	0	0	74	74	0	0	0	155	155	0	0	0	130	130	0	0	0	98	98	457
% Pedestrians	0	0	0	100	6.5	0	0	0	100	6.3	0	0	0	100	6	0	0	0	100	6.5	6.3

	Haddon Avenue Southbound					CR 607 Kaighan Avenue Westbound					Haddon Avenue Northbound					CR 607 Kaighan Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	5	26	6	4	41	5	69	12	6	92	5	75	24	8	112	8	52	3	3	66	311
08:00 AM	5	17	4	4	30	3	71	11	4	89	6	64	18	11	99	2	54	6	0	62	280
08:15 AM	3	19	6	0	28	2	67	10	11	90	5	75	16	7	103	4	41	5	1	51	272
08:30 AM	2	27	5	3	37	9	78	8	7	102	6	59	31	3	99	8	49	3	0	60	298
Total Volume	15	89	21	11	136	19	285	41	28	373	22	273	89	29	413	22	196	17	4	239	1161
% App. Total	11	65.4	15.4	8.1		5.1	76.4	11	7.5		5.3	66.1	21.5	7		9.2	82	7.1	1.7		
PHF	.750	.824	.875	.688	.829	.528	.913	.854	.636	.914	.917	.910	.718	.659	.922	.688	.907	.708	.333	.905	.933

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-03

Site Code : 2018-063-03

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound					CR 607 Kaighan Avenue Westbound					Haddon Avenue Northbound					CR 607 Kaighan Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	4	27	5	0	36	4	54	11	9	78	8	29	17	13	67	3	29	4	5	41	222
11:45 AM	8	24	7	0	39	6	52	14	4	76	15	38	22	8	83	2	29	6	6	43	241
12:00 PM	5	18	4	0	27	8	68	12	10	98	11	40	21	8	80	7	38	7	1	53	258
12:15 PM	6	32	5	0	43	11	61	15	5	92	13	37	23	16	89	6	33	4	6	49	273
Total Volume	23	101	21	0	145	29	235	52	28	344	47	144	83	45	319	18	129	21	18	186	994
% App. Total	15.9	69.7	14.5	0		8.4	68.3	15.1	8.1		14.7	45.1	26	14.1		9.7	69.4	11.3	9.7		
PHF	.719	.789	.750	.000	.843	.659	.864	.867	.700	.878	.783	.900	.902	.703	.896	.643	.849	.750	.750	.877	.910
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	3	57	6	6	72	6	92	8	7	113	10	60	17	2	89	10	45	4	5	64	338
04:30 PM	3	58	10	6	77	7	88	15	3	113	3	46	33	0	82	4	68	3	3	78	350
04:45 PM	4	66	10	12	92	9	95	10	6	120	6	47	29	4	86	7	54	9	5	75	373
05:00 PM	5	58	12	1	76	11	94	12	6	123	10	51	38	3	102	3	57	6	8	74	375
Total Volume	15	239	38	25	317	33	369	45	22	469	29	204	117	9	359	24	224	22	21	291	1436
% App. Total	4.7	75.4	12	7.9		7	78.7	9.6	4.7		8.1	56.8	32.6	2.5		8.2	77	7.6	7.2		
PHF	.750	.905	.792	.521	.861	.750	.971	.750	.786	.953	.725	.850	.770	.563	.880	.600	.824	.611	.656	.933	.957

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-04

Site Code : 2018-063-04

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound				Wildwood Avenue Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	21	0	24	0	0	1	1	43	3	0	46	71
07:15 AM	6	26	1	33	0	0	3	3	59	8	1	68	104
07:30 AM	9	28	0	37	0	0	0	0	71	8	1	80	117
07:45 AM	11	33	6	50	0	0	6	6	84	14	0	98	154
Total	29	108	7	144	0	0	10	10	257	33	2	292	446
08:00 AM	10	27	3	40	0	0	8	8	58	19	0	77	125
08:15 AM	9	25	1	35	0	0	4	4	70	20	0	90	129
08:30 AM	7	35	0	42	0	0	2	2	53	24	0	77	121
08:45 AM	15	42	0	57	0	0	6	6	48	12	3	63	126
Total	41	129	4	174	0	0	20	20	229	75	3	307	501
09:00 AM	5	33	3	41	0	0	3	3	55	10	0	65	109
09:15 AM	4	30	0	34	0	0	4	4	48	6	0	54	92
Total	9	63	3	75	0	0	7	7	103	16	0	119	201
10:30 AM	6	37	2	45	0	0	5	5	34	5	0	39	89
10:45 AM	5	20	5	30	0	0	5	5	44	8	0	52	87
Total	11	57	7	75	0	0	10	10	78	13	0	91	176
11:00 AM	3	25	0	28	0	0	5	5	45	13	1	59	92
11:15 AM	8	29	7	44	0	0	5	5	28	12	2	42	91
11:30 AM	5	34	3	42	0	0	4	4	37	6	2	45	91
11:45 AM	11	37	9	57	0	0	12	12	47	7	0	54	123
Total	27	125	19	171	0	0	26	26	157	38	5	200	397
12:00 PM	7	27	1	35	0	0	12	12	52	8	2	62	109
12:15 PM	11	43	2	56	0	0	6	6	44	15	2	61	123
Total	18	70	3	91	0	0	18	18	96	23	4	123	232
03:30 PM	14	52	11	77	0	0	13	13	53	22	2	77	167
03:45 PM	13	53	16	82	0	0	4	4	62	15	4	81	167
Total	27	105	27	159	0	0	17	17	115	37	6	158	334

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-04

Site Code : 2018-063-04

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound				Wildwood Avenue Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	10	65	7	82	0	0	4	4	54	18	0	72	158
04:15 PM	8	67	10	85	0	0	4	4	51	23	3	77	166
04:30 PM	9	71	7	87	0	0	3	3	61	5	1	67	157
04:45 PM	12	74	13	99	0	0	4	4	48	22	0	70	173
Total	39	277	37	353	0	0	15	15	214	68	4	286	654
05:00 PM	13	65	12	90	0	0	6	6	43	20	0	63	159
05:15 PM	11	55	12	78	0	0	13	13	48	15	1	64	155
Grand Total	225	1054	131	1410	0	0	142	142	1340	338	25	1703	3255
Apprch %	16	74.8	9.3		0	0	100		78.7	19.8	1.5		
Total %	6.9	32.4	4	43.3	0	0	4.4	4.4	41.2	10.4	0.8	52.3	
Cars	211	975	0	1186	0	0	0	0	1272	316	0	1588	2774
% Cars	93.8	92.5	0	84.1	0	0	0	0	94.9	93.5	0	93.2	85.2
Light Trucks	14	73	0	87	0	0	0	0	61	22	0	83	170
% Light Trucks	6.2	6.9	0	6.2	0	0	0	0	4.6	6.5	0	4.9	5.2
Heavy Trucks	0	6	0	6	0	0	0	0	7	0	0	7	13
% Heavy Trucks	0	0.6	0	0.4	0	0	0	0	0.5	0	0	0.4	0.4
Pedestrians	0	0	131	131	0	0	142	142	0	0	25	25	298
% Pedestrians	0	0	100	9.3	0	0	100	100	0	0	100	1.5	9.2

	Haddon Avenue Southbound				Wildwood Avenue Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	11	33	6	50	0	0	6	6	84	14	0	98	154
08:00 AM	10	27	3	40	0	0	8	8	58	19	0	77	125
08:15 AM	9	25	1	35	0	0	4	4	70	20	0	90	129
08:30 AM	7	35	0	42	0	0	2	2	53	24	0	77	121
Total Volume	37	120	10	167	0	0	20	20	265	77	0	342	529
% App. Total	22.2	71.9	6		0	0	100		77.5	22.5	0		
PHF	.841	.857	.417	.835	.000	.000	.625	.625	.789	.802	.000	.872	.859

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-04

Site Code : 2018-063-04

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound				Wildwood Avenue Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	5	34	3	42	0	0	4	4	37	6	2	45	91
11:45 AM	11	37	9	57	0	0	12	12	47	7	0	54	123
12:00 PM	7	27	1	35	0	0	12	12	52	8	2	62	109
12:15 PM	11	43	2	56	0	0	6	6	44	15	2	61	123
Total Volume	34	141	15	190	0	0	34	34	180	36	6	222	446
% App. Total	17.9	74.2	7.9		0	0	100		81.1	16.2	2.7		
PHF	.773	.820	.417	.833	.000	.000	.708	.708	.865	.600	.750	.895	.907

Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:30 PM

03:30 PM	14	52	11	77	0	0	13	13	53	22	2	77	167
03:45 PM	13	53	16	82	0	0	4	4	62	15	4	81	167
04:00 PM	10	65	7	82	0	0	4	4	54	18	0	72	158
04:15 PM	8	67	10	85	0	0	4	4	51	23	3	77	166
Total Volume	45	237	44	326	0	0	25	25	220	78	9	307	658
% App. Total	13.8	72.7	13.5		0	0	100		71.7	25.4	2.9		
PHF	.804	.884	.688	.959	.000	.000	.481	.481	.887	.848	.563	.948	.985

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-05

Site Code : 2018-063-05

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					Park Blvd Westbound					Haddon Avenue Northbound					Chestnut Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	17	2	3	26	1	14	9	0	24	7	29	5	2	43	1	11	3	4	19	112
07:15 AM	7	16	3	9	35	5	37	9	5	56	3	51	7	5	66	2	17	4	7	30	187
07:30 AM	13	21	5	14	53	4	26	15	1	46	2	69	3	9	83	4	32	6	9	51	233
07:45 AM	7	31	2	3	43	5	36	15	3	59	5	63	7	10	85	1	42	8	7	58	245
Total	31	85	12	29	157	15	113	48	9	185	17	212	22	26	277	8	102	21	27	158	777
08:00 AM	12	22	7	1	42	6	43	18	5	72	4	49	13	12	78	2	41	2	3	48	240
08:15 AM	8	19	4	4	35	8	43	10	1	62	6	64	5	4	79	0	35	3	7	45	221
08:30 AM	9	36	6	3	54	8	40	11	2	61	3	41	5	9	58	2	38	4	8	52	225
08:45 AM	11	32	1	7	51	15	38	13	4	70	1	40	9	6	56	5	19	7	5	36	213
Total	40	109	18	15	182	37	164	52	12	265	14	194	32	31	271	9	133	16	23	181	899
09:00 AM	4	27	2	4	37	8	27	8	1	44	5	44	5	1	55	3	21	7	1	32	168
09:15 AM	9	20	3	7	39	4	18	13	1	36	2	35	7	2	46	3	15	5	8	31	152
Total	13	47	5	11	76	12	45	21	2	80	7	79	12	3	101	6	36	12	9	63	320
10:30 AM	8	34	3	5	50	1	32	13	4	50	4	26	2	3	35	0	21	6	6	33	168
10:45 AM	10	17	0	1	28	2	27	7	3	39	2	28	8	4	42	2	20	5	3	30	139
Total	18	51	3	6	78	3	59	20	7	89	6	54	10	7	77	2	41	11	9	63	307
11:00 AM	5	22	3	1	31	7	24	8	2	41	5	33	8	2	48	4	21	4	4	33	153
11:15 AM	9	22	3	6	40	7	30	14	3	54	2	20	6	5	33	2	21	4	2	29	156
11:30 AM	8	24	1	1	34	4	28	13	0	45	5	25	7	1	38	2	18	3	17	40	157
11:45 AM	2	36	0	4	42	3	29	9	3	44	3	28	10	4	45	1	23	3	9	36	167
Total	24	104	7	12	147	21	111	44	8	184	15	106	31	12	164	9	83	14	32	138	633
12:00 PM	3	22	2	0	27	6	26	10	1	43	5	36	8	1	50	0	21	2	5	28	148
12:15 PM	7	33	2	4	46	11	19	18	3	51	6	31	2	3	42	0	15	7	9	31	170
Total	10	55	4	4	73	17	45	28	4	94	11	67	10	4	92	0	36	9	14	59	318
03:30 PM	7	45	8	8	68	7	43	15	5	70	7	43	11	8	69	2	35	7	24	68	275
03:45 PM	9	39	1	9	58	8	41	15	1	65	7	44	13	3	67	6	32	4	15	57	247
Total	16	84	9	17	126	15	84	30	6	135	14	87	24	11	136	8	67	11	39	125	522

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-05

Site Code : 2018-063-05

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					Park Blvd Westbound					Haddon Avenue Northbound					Chestnut Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	7	53	5	3	68	19	35	25	1	80	5	35	17	2	59	2	26	7	6	41	248
04:15 PM	14	58	2	6	80	11	28	10	3	52	4	35	8	4	51	5	34	4	14	57	240
04:30 PM	8	55	5	9	77	14	45	14	3	76	7	28	32	5	72	0	26	7	20	53	278
04:45 PM	14	66	2	11	93	10	42	17	5	74	5	35	4	9	53	2	38	10	20	70	290
Total	43	232	14	29	318	54	150	66	12	282	21	133	61	20	235	9	124	28	60	221	1056
05:00 PM	12	54	6	7	79	9	48	13	7	77	8	27	9	8	52	6	37	6	14	63	271
05:15 PM	14	45	3	14	76	17	45	16	2	80	9	27	16	3	55	3	28	8	31	70	281
Grand Total	221	866	81	144	1312	200	864	338	69	1471	122	986	227	125	1460	60	687	136	258	1141	5384
Apprch %	16.8	66	6.2	11		13.6	58.7	23	4.7		8.4	67.5	15.5	8.6		5.3	60.2	11.9	22.6		
Total %	4.1	16.1	1.5	2.7	24.4	3.7	16	6.3	1.3	27.3	2.3	18.3	4.2	2.3	27.1	1.1	12.8	2.5	4.8	21.2	
Cars	212	792	76	0	1080	191	837	323	0	1351	115	933	220	0	1268	54	663	129	0	846	4545
% Cars	95.9	91.5	93.8	0	82.3	95.5	96.9	95.6	0	91.8	94.3	94.6	96.9	0	86.8	90	96.5	94.9	0	74.1	84.4
Light Trucks	9	69	5	0	83	9	26	15	0	50	5	49	7	0	61	6	24	7	0	37	231
% Light Trucks	4.1	8	6.2	0	6.3	4.5	3	4.4	0	3.4	4.1	5	3.1	0	4.2	10	3.5	5.1	0	3.2	4.3
Heavy Trucks	0	5	0	0	5	0	1	0	0	1	2	4	0	0	6	0	0	0	0	0	12
% Heavy Trucks	0	0.6	0	0	0.4	0	0.1	0	0	0.1	1.6	0.4	0	0	0.4	0	0	0	0	0	0.2
Pedestrians	0	0	0	144	144	0	0	0	69	69	0	0	0	125	125	0	0	0	258	258	596
% Pedestrians	0	0	0	100	11	0	0	0	100	4.7	0	0	0	100	8.6	0	0	0	100	22.6	11.1

	Haddon Avenue Southbound					Park Blvd Westbound					Haddon Avenue Northbound					Chestnut Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	13	21	5	14	53	4	26	15	1	46	2	69	3	9	83	4	32	6	9	51	233
07:45 AM	7	31	2	3	43	5	36	15	3	59	5	63	7	10	85	1	42	8	7	58	245
08:00 AM	12	22	7	1	42	6	43	18	5	72	4	49	13	12	78	2	41	2	3	48	240
08:15 AM	8	19	4	4	35	8	43	10	1	62	6	64	5	4	79	0	35	3	7	45	221
Total Volume	40	93	18	22	173	23	148	58	10	239	17	245	28	35	325	7	150	19	26	202	939
% App. Total	23.1	53.8	10.4	12.7		9.6	61.9	24.3	4.2		5.2	75.4	8.6	10.8		3.5	74.3	9.4	12.9		
PHF	.769	.750	.643	.393	.816	.719	.860	.806	.500	.830	.708	.888	.538	.729	.956	.438	.893	.594	.722	.871	.958

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-05

Site Code : 2018-063-05

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound					Park Blvd Westbound					Haddon Avenue Northbound					Chestnut Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	8	24	1	1	34	4	28	13	0	45	5	25	7	1	38	2	18	3	17	40	157
11:45 AM	2	36	0	4	42	3	29	9	3	44	3	28	10	4	45	1	23	3	9	36	167
12:00 PM	3	22	2	0	27	6	26	10	1	43	5	36	8	1	50	0	21	2	5	28	148
12:15 PM	7	33	2	4	46	11	19	18	3	51	6	31	2	3	42	0	15	7	9	31	170
Total Volume	20	115	5	9	149	24	102	50	7	183	19	120	27	9	175	3	77	15	40	135	642
% App. Total	13.4	77.2	3.4	6		13.1	55.7	27.3	3.8		10.9	68.6	15.4	5.1		2.2	57	11.1	29.6		
PHF	.625	.799	.625	.563	.810	.545	.879	.694	.583	.897	.792	.833	.675	.563	.875	.375	.837	.536	.588	.844	.944
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	8	55	5	9	77	14	45	14	3	76	7	28	32	5	72	0	26	7	20	53	278
04:45 PM	14	66	2	11	93	10	42	17	5	74	5	35	4	9	53	2	38	10	20	70	290
05:00 PM	12	54	6	7	79	9	48	13	7	77	8	27	9	8	52	6	37	6	14	63	271
05:15 PM	14	45	3	14	76	17	45	16	2	80	9	27	16	3	55	3	28	8	31	70	281
Total Volume	48	220	16	41	325	50	180	60	17	307	29	117	61	25	232	11	129	31	85	256	1120
% App. Total	14.8	67.7	4.9	12.6		16.3	58.6	19.5	5.5		12.5	50.4	26.3	10.8		4.3	50.4	12.1	33.2		
PHF	.857	.833	.667	.732	.874	.735	.938	.882	.607	.959	.806	.836	.477	.694	.806	.458	.849	.775	.685	.914	.966

Phone: 732-274-9500 Fax: 732-274-9510

Page No : 1

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-06

Site Code : 2018-063-06

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound				Walnut Street Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	2	53	4	59	6	4	2	12	47	5	0	52	123
03:45 PM	0	41	0	41	4	2	2	8	54	4	0	58	107
Total	2	94	4	100	10	6	4	20	101	9	0	110	230
04:00 PM	1	63	0	64	7	4	1	12	51	3	0	54	130
04:15 PM	1	67	0	68	4	0	6	10	42	8	5	55	133
04:30 PM	4	68	0	72	4	2	0	6	37	0	0	37	115
04:45 PM	3	75	0	78	3	1	1	5	46	2	0	48	131
Total	9	273	0	282	18	7	8	33	176	13	5	194	509
05:00 PM	5	70	0	75	8	2	8	18	39	3	0	42	135
05:15 PM	0	58	0	58	3	2	5	10	42	3	0	45	113
Grand Total	33	1085	10	1128	96	37	57	190	1221	81	7	1309	2627
Apprch %	2.9	96.2	0.9		50.5	19.5	30		93.3	6.2	0.5		
Total %	1.3	41.3	0.4	42.9	3.7	1.4	2.2	7.2	46.5	3.1	0.3	49.8	
Cars	29	1006	0	1035	84	35	0	119	1159	73	0	1232	2386
% Cars	87.9	92.7	0	91.8	87.5	94.6	0	62.6	94.9	90.1	0	94.1	90.8
Light Trucks	4	75	0	79	11	1	0	12	59	7	0	66	157
% Light Trucks	12.1	6.9	0	7	11.5	2.7	0	6.3	4.8	8.6	0	5	6
Heavy Trucks	0	4	0	4	1	1	0	2	3	1	0	4	10
% Heavy Trucks	0	0.4	0	0.4	1	2.7	0	1.1	0.2	1.2	0	0.3	0.4
Pedestrians	0	0	10	10	0	0	57	57	0	0	7	7	74
% Pedestrians	0	0	100	0.9	0	0	100	30	0	0	100	0.5	2.8

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-06

Site Code : 2018-063-06

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound				Walnut Street Westbound				Haddon Avenue Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	39	0	39	4	1	3	8	79	4	0	83	130
07:45 AM	3	39	1	43	1	2	2	5	78	5	0	83	131
08:00 AM	0	31	0	31	6	1	2	9	69	0	0	69	109
08:15 AM	0	32	0	32	2	2	0	4	71	2	0	73	109
Total Volume	3	141	1	145	13	6	7	26	297	11	0	308	479
% App. Total	2.1	97.2	0.7		50	23.1	26.9		96.4	3.6	0		
PHF	.250	.904	.250	.843	.542	.750	.583	.722	.940	.550	.000	.928	.914
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	0	31	0	31	0	3	1	4	29	7	0	36	71
11:45 AM	3	40	0	43	1	0	2	3	37	2	0	39	85
12:00 PM	0	23	0	23	1	0	1	2	39	2	0	41	66
12:15 PM	1	42	0	43	1	2	0	3	43	3	0	46	92
Total Volume	4	136	0	140	3	5	4	12	148	14	0	162	314
% App. Total	2.9	97.1	0		25	41.7	33.3		91.4	8.6	0		
PHF	.333	.810	.000	.814	.750	.417	.500	.750	.860	.500	.000	.880	.853
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	1	67	0	68	4	0	6	10	42	8	5	55	133
04:30 PM	4	68	0	72	4	2	0	6	37	0	0	37	115
04:45 PM	3	75	0	78	3	1	1	5	46	2	0	48	131
05:00 PM	5	70	0	75	8	2	8	18	39	3	0	42	135
Total Volume	13	280	0	293	19	5	15	39	164	13	5	182	514
% App. Total	4.4	95.6	0		48.7	12.8	38.5		90.1	7.1	2.7		
PHF	.650	.933	.000	.939	.594	.625	.469	.542	.891	.406	.250	.827	.952

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-07

Site Code : 2018-063-07

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound						Mt. Ephraim Avenue Westbound						Line Street From Southeast						Haddon Avenue Northbound						Mt. Ephraim Avenue Eastbound						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	18	12	0	30	0	4	5	0	2	11	0	0	0	2	0	2	0	38	2	0	3	43	13	3	0	0	0	16	102
07:15 AM	0	0	15	8	0	23	0	6	5	0	2	13	0	0	1	1	1	3	0	49	3	0	0	52	25	13	0	0	1	39	130
07:30 AM	0	0	22	18	0	40	0	5	7	0	4	16	0	0	0	4	2	6	0	64	7	0	2	73	28	11	0	0	1	40	175
07:45 AM	0	0	26	14	0	40	1	8	9	1	2	21	0	0	0	1	0	1	0	85	7	0	0	92	35	14	0	0	1	50	204
Total	0	0	81	52	0	133	1	23	26	1	10	61	0	0	1	8	3	12	0	236	19	0	5	260	101	41	0	0	3	145	611
08:00 AM	0	0	22	23	0	45	0	5	4	0	0	9	0	0	0	2	1	3	0	63	5	0	0	68	36	16	0	0	4	56	181
08:15 AM	0	0	19	23	0	42	0	7	4	1	2	14	0	0	1	5	3	9	0	74	9	0	0	83	33	10	0	0	0	43	191
08:30 AM	0	0	29	22	0	51	0	10	7	0	0	17	0	0	0	5	1	6	1	54	8	0	0	63	26	12	0	0	0	38	175
08:45 AM	0	0	28	20	0	48	0	3	2	0	0	5	0	0	0	1	0	1	0	68	5	0	3	76	34	6	0	0	1	41	171
Total	0	0	98	88	0	186	0	25	17	1	2	45	0	0	1	13	5	19	1	259	27	0	3	290	129	44	0	0	5	178	718
09:00 AM	0	0	29	27	1	57	0	1	4	0	5	10	0	1	0	1	4	6	0	40	2	0	2	44	31	4	0	0	0	35	152
09:15 AM	0	0	23	22	0	45	0	1	8	0	1	10	0	1	0	0	1	2	0	43	2	0	0	45	31	7	0	0	0	38	140
Total	0	0	52	49	1	102	0	2	12	0	6	20	0	2	0	1	5	8	0	83	4	0	2	89	62	11	0	0	0	73	292
10:30 AM	0	0	32	24	0	56	1	3	6	0	1	11	0	0	0	1	7	8	0	34	3	0	1	38	29	13	0	1	3	46	159
10:45 AM	0	0	19	29	0	48	0	3	4	0	2	9	1	1	0	2	5	9	1	25	4	0	0	30	29	7	0	1	0	37	133
Total	0	0	51	53	0	104	1	6	10	0	3	20	1	1	0	3	12	17	1	59	7	0	1	68	58	20	0	2	3	83	292
11:00 AM	0	0	21	32	0	53	0	3	5	0	0	8	0	0	0	1	4	5	1	32	2	0	1	36	31	10	0	1	2	44	146
11:15 AM	0	0	21	28	0	49	0	5	2	0	3	10	0	0	0	0	4	4	0	31	2	0	2	35	33	11	0	1	2	47	145
11:30 AM	0	0	30	25	0	55	3	2	8	1	5	19	0	0	0	3	6	9	0	21	7	0	5	33	27	8	0	0	4	39	155
11:45 AM	0	0	27	28	1	56	0	3	4	0	6	13	0	0	0	1	8	9	0	27	5	0	0	32	25	12	0	0	2	39	149
Total	0	0	99	113	1	213	3	13	19	1	14	50	0	0	0	5	22	27	1	111	16	0	8	136	116	41	0	2	10	169	595
12:00 PM	0	0	18	21	0	39	0	5	13	0	6	24	0	0	0	1	7	8	0	32	3	0	0	35	24	8	0	0	0	32	138
12:15 PM	0	0	36	27	0	63	1	4	6	0	2	13	1	0	0	2	3	6	1	29	4	0	3	37	35	14	0	0	5	54	173
Total	0	0	54	48	0	102	1	9	19	0	8	37	1	0	0	3	10	14	1	61	7	0	3	72	59	22	0	0	5	86	311
03:30 PM	0	0	40	30	0	70	0	1	3	0	3	7	0	1	2	2	3	8	0	57	3	1	0	61	30	12	0	0	0	42	188
03:45 PM	0	0	25	33	0	58	0	7	10	0	2	19	0	1	0	0	3	4	0	49	11	0	1	61	32	16	1	0	1	50	192
Total	0	0	65	63	0	128	0	8	13	0	5	26	0	2	2	2	6	12	0	106	14	1	1	122	62	28	1	0	1	92	380

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-07

Site Code : 2018-063-07

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound						Mt. Ephraim Avenue Westbound						Line Street From Southeast						Haddon Avenue Northbound						Mt. Ephraim Avenue Eastbound						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	61	29	0	90	0	7	10	0	2	19	0	0	0	3	1	4	0	52	5	1	0	58	27	9	0	0	0	36	207
04:15 PM	0	0	53	27	0	80	0	5	11	0	1	17	4	2	0	0	3	9	0	33	5	1	0	39	41	9	0	0	0	50	195
04:30 PM	1	0	53	29	1	84	0	6	12	0	3	21	1	1	1	1	5	9	0	36	5	0	1	42	31	11	0	0	2	44	200
04:45 PM	0	0	70	40	1	111	0	4	13	0	4	21	0	0	0	3	4	7	0	34	4	0	0	38	17	17	0	0	1	35	212
Total	1	0	237	125	2	365	0	22	46	0	10	78	5	3	1	7	13	29	0	155	19	2	1	177	116	46	0	0	3	165	814
05:00 PM	0	0	50	27	0	77	0	6	7	0	4	17	0	0	1	2	4	7	1	30	3	0	0	34	25	19	0	1	0	45	180
05:15 PM	0	0	39	33	0	72	0	5	6	0	4	15	1	0	0	1	5	7	0	34	5	1	1	41	15	16	0	1	0	32	167
Grand Total	1	0	826	651	4	1482	6	119	175	3	66	369	8	8	6	45	85	152	5	1134	121	4	25	1289	743	288	1	6	30	1068	4360
Apprch %	0.1	0	55.7	43.9	0.3		1.6	32.2	47.4	0.8	17.9		5.3	5.3	3.9	29.6	55.9		0.4	88	9.4	0.3	1.9		69.6	27	0.1	0.6	2.8		
Total %	0	0	18.9	14.9	0.1	34	0.1	2.7	4	0.1	1.5	8.5	0.2	0.2	0.1	1	1.9	3.5	0.1	26	2.8	0.1	0.6	29.6	17	6.6	0	0.1	0.7	24.5	
Cars	1	0	765	607	0	1373	6	102	162	3	0	273	8	8	6	38	0	60	4	1070	105	4	0	1183	698	267	1	5	0	971	3860
% Cars	100	0	92.6	93.2	0	92.6	100	85.7	92.6	100	0	74	100	100	100	84.4	0	39.5	80	94.4	86.8	100	0	91.8	93.9	92.7	100	83.3	0	90.9	88.5
Light Trucks	0	0	58	42	0	100	0	16	12	0	0	28	0	0	0	7	0	7	0	60	13	0	0	73	45	20	0	1	0	66	274
% Light Trucks	0	0	7	6.5	0	6.7	0	13.4	6.9	0	0	7.6	0	0	0	15.6	0	4.6	0	5.3	10.7	0	0	5.7	6.1	6.9	0	16.7	0	6.2	6.3
Heavy Trucks	0	0	3	2	0	5	0	1	1	0	0	2	0	0	0	0	0	0	1	4	3	0	0	8	0	1	0	0	0	1	16
% Heavy Trucks	0	0	0.4	0.3	0	0.3	0	0.8	0.6	0	0	0.5	0	0	0	0	0	0	20	0.4	2.5	0	0	0.6	0	0.3	0	0	0	0.1	0.4
Pedestrians	0	0	0	0	4	4	0	0	0	0	66	66	0	0	0	0	85	85	0	0	0	0	25	25	0	0	0	0	30	30	210
% Pedestrians	0	0	0	0	100	0.3	0	0	0	0	100	17.9	0	0	0	0	100	55.9	0	0	0	0	100	1.9	0	0	0	0	100	2.8	4.8

	Haddon Avenue Southbound						Mt. Ephraim Avenue Westbound						Line Street From Southeast						Haddon Avenue Northbound						Mt. Ephraim Avenue Eastbound							
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 07:30 AM																																
07:30 AM	0	0	22	18	0	40	0	5	7	0	4	16	0	0	0	4	2	6	0	64	7	0	2	73	28	11	0	0	1	40	175	
07:45 AM	0	0	26	14	0	40	1	8	9	1	2	21	0	0	0	1	0	1	0	85	7	0	0	92	35	14	0	0	1	50	204	
08:00 AM	0	0	22	23	0	45	0	5	4	0	0	9	0	0	0	2	1	3	0	63	5	0	0	68	36	16	0	0	4	56	181	
08:15 AM	0	0	19	23	0	42	0	7	4	1	2	14	0	0	1	5	3	9	0	74	9	0	0	83	33	10	0	0	0	43	191	
Total Volume	0	0	89	78	0	167	1	25	24	2	8	60	0	0	1	12	6	19	0	286	28	0	2	316	132	51	0	0	6	189	751	
% App. Total	0	0	53.3	46.7	0		1.7	41.7	40	3.3	13.3		0	0	5.3	63.2	31.6		0	90.5	8.9	0	0.6		69.8	27	0	0	3.2			
PHF	.000	.000	.856	.848	.000	.928	.250	.781	.667	.500	.500	.714	.000	.000	.250	.600	.500	.528	.000	.841	.778	.000	.250	.859	.917	.797	.000	.000	.375	.844	.920	

TechniQuest Corporation

4105 US Route 1, Suite #10
Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-07

Site Code : 2018-063-07

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound						Mt. Ephraim Avenue Westbound						Line Street From Southeast						Haddon Avenue Northbound						Mt. Ephraim Avenue Eastbound						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 11:30 AM																															
11:30 AM	0	0	30	25	0	55	3	2	8	1	5	19	0	0	0	3	6	9	0	21	7	0	5	33	27	8	0	0	4	39	155
11:45 AM	0	0	27	28	1	56	0	3	4	0	6	13	0	0	0	1	8	9	0	27	5	0	0	32	25	12	0	0	2	39	149
12:00 PM	0	0	18	21	0	39	0	5	13	0	6	24	0	0	0	1	7	8	0	32	3	0	0	35	24	8	0	0	0	32	138
12:15 PM	0	0	36	27	0	63	1	4	6	0	2	13	1	0	0	2	3	6	1	29	4	0	3	37	35	14	0	0	5	54	173
Total Volume	0	0	111	101	1	213	4	14	31	1	19	69	1	0	0	7	24	32	1	109	19	0	8	137	111	42	0	0	11	164	615
% App. Total	0	0	52.1	47.4	0.5		5.8	20.3	44.9	1.4	27.5		3.1	0	0	21.9	75		0.7	79.6	13.9	0	5.8		67.7	25.6	0	0	6.7		
PHF	.000	.000	.771	.902	.250	.845	.333	.700	.596	.250	.792	.719	.250	.000	.000	.583	.750	.889	.250	.852	.679	.000	.400	.926	.793	.750	.000	.000	.550	.759	.889

Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	0	0	61	29	0	90	0	7	10	0	2	19	0	0	0	3	1	4	0	52	5	1	0	58	27	9	0	0	0	36	207
04:15 PM	0	0	53	27	0	80	0	5	11	0	1	17	4	2	0	0	3	9	0	33	5	1	0	39	41	9	0	0	0	50	195
04:30 PM	1	0	53	29	1	84	0	6	12	0	3	21	1	1	1	1	5	9	0	36	5	0	1	42	31	11	0	0	2	44	200
04:45 PM	0	0	70	40	1	111	0	4	13	0	4	21	0	0	0	3	4	7	0	34	4	0	0	38	17	17	0	0	1	35	212
Total Volume	1	0	237	125	2	365	0	22	46	0	10	78	5	3	1	7	13	29	0	155	19	2	1	177	116	46	0	0	3	165	814
% App. Total	0.3	0	64.9	34.2	0.5		0	28.2	59	0	12.8		17.2	10.3	3.4	24.1	44.8		0	87.6	10.7	1.1	0.6		70.3	27.9	0	0	1.8		
PHF	.250	.000	.846	.781	.500	.822	.000	.786	.885	.000	.625	.929	.313	.375	.250	.583	.650	.806	.000	.745	.950	.500	.250	.763	.707	.676	.000	.000	.375	.825	.960

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-08

Site Code : 2018-063-08

Start Date : 10/10/2018

Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					CR 604 Newton Avenue Westbound					Haddon Avenue Northbound					CR 604 Newton Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	6	23	4	0	33	13	38	66	2	119	1	44	3	0	48	1	33	3	2	39	239
07:15 AM	6	24	2	1	33	6	48	84	2	140	1	56	10	2	69	4	47	5	6	62	304
07:30 AM	10	34	2	0	46	13	30	81	2	126	5	85	4	4	98	7	54	6	8	75	345
07:45 AM	9	34	8	1	52	17	26	116	3	162	5	119	5	3	132	10	46	4	12	72	418
Total	31	115	16	2	164	49	142	347	9	547	12	304	22	9	347	22	180	18	28	248	1306
08:00 AM	6	41	6	0	53	17	36	76	2	131	1	91	12	0	104	12	43	0	4	59	347
08:15 AM	6	43	8	0	57	14	43	80	5	142	4	102	3	2	111	9	38	5	3	55	365
08:30 AM	7	42	8	1	58	15	33	86	1	135	3	64	9	1	77	4	35	3	4	46	316
08:45 AM	8	45	7	1	61	25	39	81	4	149	2	90	10	1	103	5	30	7	6	48	361
Total	27	171	29	2	229	71	151	323	12	557	10	347	34	4	395	30	146	15	17	208	1389
09:00 AM	8	45	4	1	58	20	36	65	4	125	2	55	8	1	66	7	36	5	4	52	301
09:15 AM	6	42	6	3	57	9	24	72	1	106	1	71	4	2	78	5	32	7	10	54	295
Total	14	87	10	4	115	29	60	137	5	231	3	126	12	3	144	12	68	12	14	106	596
10:30 AM	9	46	13	1	69	11	33	30	3	77	5	61	6	1	73	6	32	15	9	62	281
10:45 AM	13	37	6	2	58	11	14	49	7	81	0	49	3	1	53	5	30	8	9	52	244
Total	22	83	19	3	127	22	47	79	10	158	5	110	9	2	126	11	62	23	18	114	525
11:00 AM	8	47	2	1	58	13	24	36	3	76	2	58	6	1	67	9	39	8	8	64	265
11:15 AM	8	47	6	0	61	16	25	31	3	75	1	48	6	0	55	5	25	7	4	41	232
11:30 AM	10	43	5	0	58	8	31	28	6	73	2	43	3	1	49	7	33	9	6	55	235
11:45 AM	14	49	5	3	71	11	25	37	4	77	0	47	3	1	51	7	40	3	12	62	261
Total	40	186	18	4	248	48	105	132	16	301	5	196	18	3	222	28	137	27	30	222	993
12:00 PM	11	41	3	1	56	14	21	34	5	74	2	53	8	0	63	7	36	0	10	53	246
12:15 PM	15	57	3	3	78	25	39	46	1	111	6	51	9	1	67	2	15	6	10	33	289
Total	26	98	6	4	134	39	60	80	6	185	8	104	17	1	130	9	51	6	20	86	535
03:30 PM	18	72	2	0	92	22	44	41	0	107	7	78	6	3	94	6	46	6	9	67	360
03:45 PM	19	66	7	1	93	20	40	35	2	97	5	67	5	2	79	9	54	6	7	76	345
Total	37	138	9	1	185	42	84	76	2	204	12	145	11	5	173	15	100	12	16	143	705

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-08

Site Code : 2018-063-08

Start Date : 10/10/2018

Page No : 2

Groups Printed- Cars - Light Trucks - Heavy Trucks - Pedestrians

	Haddon Avenue Southbound					CR 604 Newton Avenue Westbound					Haddon Avenue Northbound					CR 604 Newton Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	16	105	6	2	129	13	56	29	0	98	1	75	2	1	79	8	46	7	8	69	375
04:15 PM	17	85	7	4	113	24	42	24	2	92	8	55	11	1	75	6	45	7	1	59	339
04:30 PM	23	75	6	2	106	22	51	28	3	104	4	56	6	4	70	3	52	9	11	75	355
04:45 PM	18	106	6	1	131	34	41	36	3	114	2	43	5	5	55	8	39	5	10	62	362
Total	74	371	25	9	479	93	190	117	8	408	15	229	24	11	279	25	182	28	30	265	1431
05:00 PM	25	71	1	2	99	23	47	31	3	104	4	48	7	7	66	4	43	7	10	64	333
05:15 PM	18	66	2	2	88	27	38	21	1	87	1	45	3	2	51	5	25	3	17	50	276
Grand Total	314	1386	135	33	1868	443	924	1343	72	2782	75	1654	157	47	1933	161	994	151	200	1506	8089
Apprch %	16.8	74.2	7.2	1.8		15.9	33.2	48.3	2.6		3.9	85.6	8.1	2.4		10.7	66	10	13.3		
Total %	3.9	17.1	1.7	0.4	23.1	5.5	11.4	16.6	0.9	34.4	0.9	20.4	1.9	0.6	23.9	2	12.3	1.9	2.5	18.6	
Cars	310	1295	126	0	1731	421	899	1315	0	2635	69	1560	144	0	1773	152	963	141	0	1256	7395
% Cars	98.7	93.4	93.3	0	92.7	95	97.3	97.9	0	94.7	92	94.3	91.7	0	91.7	94.4	96.9	93.4	0	83.4	91.4
Light Trucks	4	88	9	0	101	20	22	26	0	68	6	91	12	0	109	9	30	10	0	49	327
% Light Trucks	1.3	6.3	6.7	0	5.4	4.5	2.4	1.9	0	2.4	8	5.5	7.6	0	5.6	5.6	3	6.6	0	3.3	4
Heavy Trucks	0	3	0	0	3	2	3	2	0	7	0	3	1	0	4	0	1	0	0	1	15
% Heavy Trucks	0	0.2	0	0	0.2	0.5	0.3	0.1	0	0.3	0	0.2	0.6	0	0.2	0	0.1	0	0	0.1	0.2
Pedestrians	0	0	0	33	33	0	0	0	72	72	0	0	0	47	47	0	0	0	200	200	352
% Pedestrians	0	0	0	100	1.8	0	0	0	100	2.6	0	0	0	100	2.4	0	0	0	100	13.3	4.4

	Haddon Avenue Southbound					CR 604 Newton Avenue Westbound					Haddon Avenue Northbound					CR 604 Newton Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	10	34	2	0	46	13	30	81	2	126	5	85	4	4	98	7	54	6	8	75	345
07:45 AM	9	34	8	1	52	17	26	116	3	162	5	119	5	3	132	10	46	4	12	72	418
08:00 AM	6	41	6	0	53	17	36	76	2	131	1	91	12	0	104	12	43	0	4	59	347
08:15 AM	6	43	8	0	57	14	43	80	5	142	4	102	3	2	111	9	38	5	3	55	365
Total Volume	31	152	24	1	208	61	135	353	12	561	15	397	24	9	445	38	181	15	27	261	1475
% App. Total	14.9	73.1	11.5	0.5		10.9	24.1	62.9	2.1		3.4	89.2	5.4	2		14.6	69.3	5.7	10.3		
PHF	.775	.884	.750	.250	.912	.897	.785	.761	.600	.866	.750	.834	.500	.563	.843	.792	.838	.625	.563	.870	.882

TechniQuest Corporation

4105 US Route 1, Suite #10

Monmouth Junction, NJ 08852

Phone: 732-274-9500 Fax: 732-274-9510

File Name : 2018-063-08

Site Code : 2018-063-08

Start Date : 10/10/2018

Page No : 3

	Haddon Avenue Southbound					CR 604 Newton Avenue Westbound					Haddon Avenue Northbound					CR 604 Newton Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 12:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	10	43	5	0	58	8	31	28	6	73	2	43	3	1	49	7	33	9	6	55	235
11:45 AM	14	49	5	3	71	11	25	37	4	77	0	47	3	1	51	7	40	3	12	62	261
12:00 PM	11	41	3	1	56	14	21	34	5	74	2	53	8	0	63	7	36	0	10	53	246
12:15 PM	15	57	3	3	78	25	39	46	1	111	6	51	9	1	67	2	15	6	10	33	289
Total Volume	50	190	16	7	263	58	116	145	16	335	10	194	23	3	230	23	124	18	38	203	1031
% App. Total	19	72.2	6.1	2.7		17.3	34.6	43.3	4.8		4.3	84.3	10	1.3		11.3	61.1	8.9	18.7		
PHF	.833	.833	.800	.583	.843	.580	.744	.788	.667	.755	.417	.915	.639	.750	.858	.821	.775	.500	.792	.819	.892
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	16	105	6	2	129	13	56	29	0	98	1	75	2	1	79	8	46	7	8	69	375
04:15 PM	17	85	7	4	113	24	42	24	2	92	8	55	11	1	75	6	45	7	1	59	339
04:30 PM	23	75	6	2	106	22	51	28	3	104	4	56	6	4	70	3	52	9	11	75	355
04:45 PM	18	106	6	1	131	34	41	36	3	114	2	43	5	5	55	8	39	5	10	62	362
Total Volume	74	371	25	9	479	93	190	117	8	408	15	229	24	11	279	25	182	28	30	265	1431
% App. Total	15.4	77.5	5.2	1.9		22.8	46.6	28.7	2		5.4	82.1	8.6	3.9		9.4	68.7	10.6	11.3		
PHF	.804	.875	.893	.563	.914	.684	.848	.813	.667	.895	.469	.763	.545	.550	.883	.781	.875	.778	.682	.883	.954

APPENDIX F

AERIAL PHOTOGRAPHY



MATCH LINE



MATCH LINE

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE
CITY OF CAMDEN
CAMDEN COUNTY

AERIAL PHOTOGRAPHY/PROJECT LOCATION MAP



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

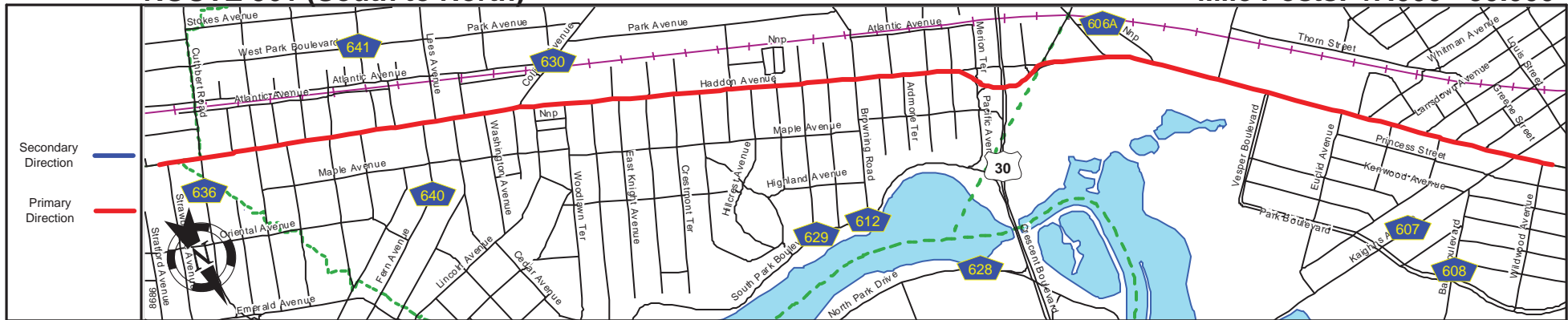
N.T.S.

APPENDIX G

STRAIGHT LINE DIAGRAMS

ROUTE 561 (South to North)

Mile Posts: 47.000 - 50.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route		
US Route		
NJ Route		
County Road		
Interchange Number		
Grade Separated Interchange		
Traffic Signal		
Traffic Monitoring Sites		
Road Underpass		
Road Overpass		

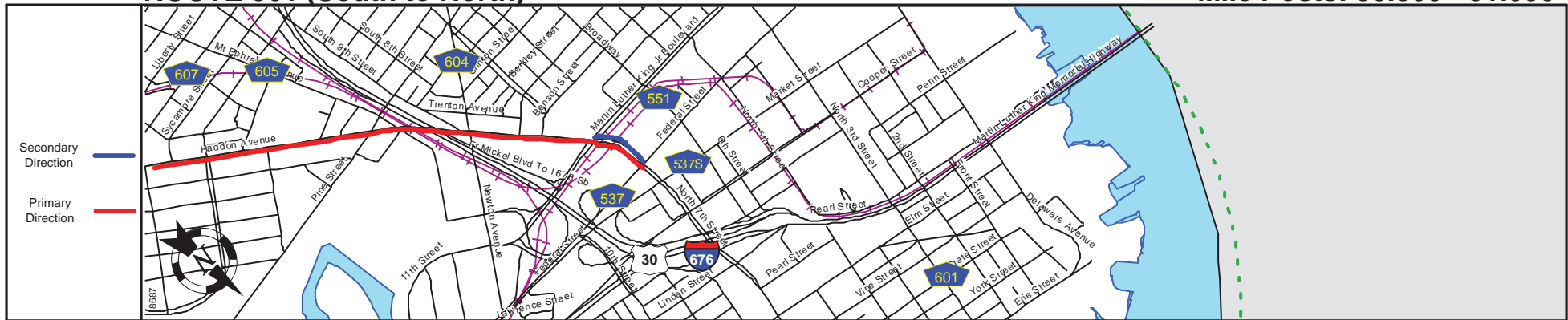
Street Name	North Haddon Avenue		
Jurisdiction	County		
Functional Class	Urban Minor Arterial		
Federal Aid - NHS Sy	STP	IM - Transit Term.	STP
Control Section			
Speed Limit	25		
Number of Lanes	2		
Med. Type	None		
Med. Width	0		
Pavement	48	36	48
Shoulder	0		
Traffic Volume	12,771 (2012)	8,167 (2012)	9,669 (2013)
Traffic Sta. ID	7n5b716	7-5-286	7n5b718
Structure No.		0405152	
Enlarged Views			

SRI = 0000561

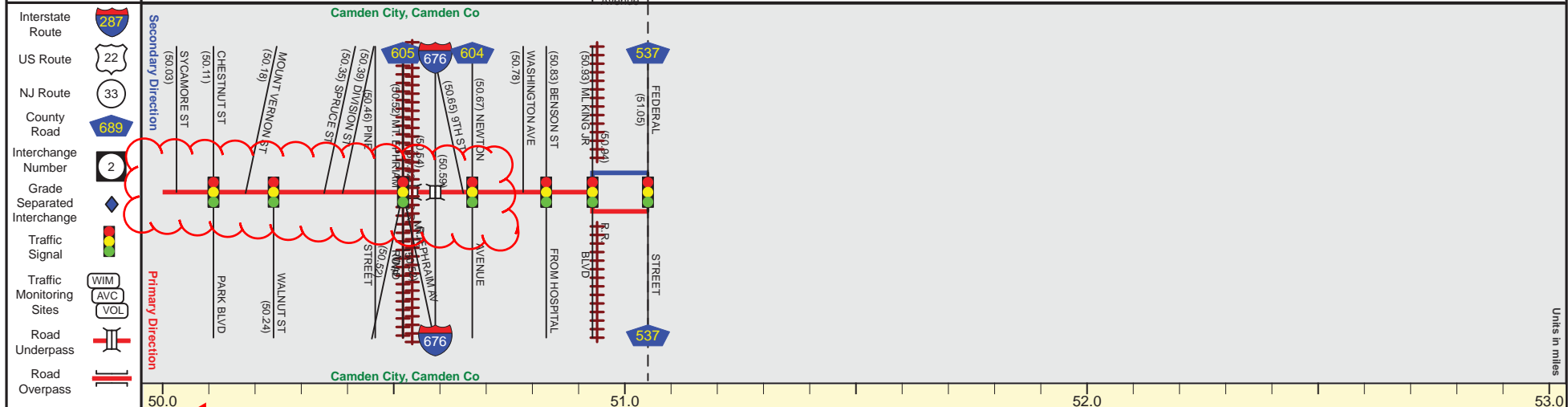
Date last inventoried: June 2012

ROUTE 561 (South to North)

Mile Posts: 50.000 - 51.050



Pavement	36
Shoulder	0
Number of Lanes	2
Speed Limit	25
Street Name	North Haddon Avenue



Street Name	North Haddon Avenue
Jurisdiction	County
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	36
Shoulder	0
Traffic Volume	10,359 (2013)
Traffic Sta. ID	13Q438
Structure No.	N/A N/A
Enlarged Views	See Enlarged View #1

SRI = 0000561

Date last inventoried: June 2012

APPENDIX H

ENVIRONMENTAL SCREENING



**Haddon Avenue (CR 561) Improvement Project
Concept Development**

**Euclid Avenue to Newton Avenue
City of Camden
Camden County, New Jersey**

Environmental Screening Report

Prepared For:



**Greenman-Pedersen, Inc.
100 Corporate Drive, Suite 301
Lebanon, NJ 08833**

Prepared By:



**KMA Consulting Engineers, Inc.
1010 Berlin Road
Cherry Hill, NJ 08034**

October 2018

Revised: October 2019

TABLE OF CONTENTS

1	INTRODUCTION	1
2	CULTURAL RESOURCES.....	1
3	SECTION 4(F) PROPERTIES - PUBLICLY OWNED PARKS AND RECREATIONAL AREAS	2
4	AIR QUALITY/NOISE	2
5	ECOLOGICAL CONSTRAINTS.....	3
5.1	WETLANDS AND VERNAL POOLS	3
5.2	SURFACE WATERS	3
5.2.1	Riparian Zones	4
5.2.2	Sole Source Aquifers.....	4
5.2.3	Tidelands.....	4
5.2.4	Well Head Protection Areas	4
5.2.5	Wild and Scenic Rivers	5
5.3	FLOODPLAINS	5
5.4	STORMWATER MANAGEMENT AND WATER QUALITY	5
5.5	SOIL EROSION AND SEDIMENT CONTROL.....	6
5.6	THREATENED AND ENDANGERED SPECIES.....	6
6	ENVIRONMENTAL JUSTICE AND SOCIOECONOMIC	6
7	HAZARDOUS WASTE	7
8	ZONING AND LAND USE	8
9	ANTICIPATED APPROVALS AND AUTHORIZATIONS.....	8
9.1	FEDERAL PERMITS/APPROVALS/COORDINATION	8
9.2	STATE PERMITS/APPROVALS/COORDINATION.....	9
10	REFERENCES	10

APPENDICES

- Appendix A: Figures
Appendix B: Agency Correspondence

1 Introduction

A Concept Development Study is being performed by Camden County for the Haddon Avenue (CR 561) Improvement Project, which extends from Euclid Avenue to Newton Avenue in the City of Camden, Camden County, New Jersey. The major objectives of the Concept Development Study are to develop a Purpose and Need Statement focused on the needed transportation improvements, identify and evaluate a reasonable number of prudent and feasible alternatives to address the Purpose and Need, and to select a Preliminary Preferred Alternative (PPA).

As part of the Data Collection Task within the Concept Development (CD) Phase, an environmental screening was performed to identify regulated resources within the vicinity of the study area. The study area is defined as a 300 foot buffer around the project limits unless otherwise specified. Environmental parameters related to the project were assessed by performing a review of available information, which included maps and publications by various government agencies and non-government organizations. The database review was augmented by a field view to confirm database information and to document other resources not identified in the database review. Constraints examined included cultural resources, wetlands, surface water resources, floodplains, threatened and endangered species habitat, hazardous materials, community facilities, open space and parkland, and environmental justice. Location maps of the study area are provided in Appendix A as Figures 1 and 2.

The purpose of this report is to provide an inventory of existing environmental conditions that the alternative improvement concepts should take into consideration. The information presented will assist Camden County in evaluating the improvement concepts and the potential environmental implications of each alternative. Although regulated resources were identified within the study area, it is not anticipated that any of the identified resources pose an overwhelming environmental challenge that would preclude the project from advancing through preliminary engineering, the environmental documentation process, final design, regulatory permitting, and construction.

2 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 was created to protect and maintain historic places composed of districts, sites, buildings, structures, or objects significant to American history, architecture, archaeology, engineering, and cultures. Section 106 of the NHPA requires consideration of effects to significant historic properties and archeological resources.

The New Jersey Historic Preservation Office's (NJHPO) Cultural Resource Information System (CRGIS) was examined in an effort to identify recorded and known archaeological and historic architectural resources within the study area. According to information provided by the NJSHPO CRGIS, the following historic properties are located within the study area:

- Cooper Plaza Historic District – Eligible for Listing on the National Register (NR) (SHPO Opinion 10/30/1991);
- Pulaski Park Historic District – Eligible for Listing on the NR (SHPO Opinion 12/11/1989);
- Haddon Avenue Historic District – Identified;
- Parkside Historic District – Eligible for Listing on the NR (SHPO Opinion 6/5/1996) and
- Camden and Atlantic Railroad Historic District – Eligible for Listing on the NR (SHPO Opinion 9/17/2001).

Environmental Screening Report

If the project is federally funded, consultation with the SHPO under Section 106 of the National Historic Preservation Act will be required. Section 106 requires Federal agencies to take into account the effects of their undertakings on historic properties, and, if it is determined that the undertaking will result in adverse effects, afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. Once a PPA is selected, coordination with SHPO will be initiated to determine if formal Section 106 consultation will be required. Archaeological and architectural surveys in compliance with the *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation* will not be completed as part of Concept Development. Please refer to Appendix A – Figure 3A for cultural resources located within the study area.

The NJ Register of Historic Places Act Rules (N.J.A.C. 7:4) require that an application for project authorization be submitted by any state, county, or local government agency whose project, or undertaking, may encroach upon a New Jersey Register listed property. There are no historic properties located within the study area that are a New Jersey Register of Historic Places listed property. As such, authorization from the NJDEP Commissioner via the NJHPO will not be required.

3 Section 4(f) Properties - Publicly Owned Parks and Recreational Areas

Available geospatial data from the NJDEP Green Acres Program Recreation and Open Space Inventory (ROSI) and aerial photography were reviewed to identify public parkland, including recreation facilities, publicly owned open space, Wildlife Refuges or Wildlife Management Areas, school athletic fields, or community parks within the study area. Based on this review, there are no existing Section 4(f) parkland resources within the study area. A pocket park is proposed at Pine Street and Haddon Avenue; however, there will be no involvement with this resource. As such, the project will not result in the use of Section 4(f) parkland resources. There are multiple neighborhood playgrounds, pocket parks, and passive recreational areas located more than 400 feet away from the project study area including 7th and Clinton Street playground, Cooper Plaza Commons playground, and Bradly and Ormand Avenue passive recreational area. In addition, the Camden High School Athletic Field is located approximately 1,200 feet away from the study area. Please refer to Appendix A – Figure 3A for an environmental constraints map depicting the location of identified recreational areas in relation to the study area.

In addition to parkland and recreational resources, Section 4(f) of the USDOT Act also requires that the projects evaluate the use of cultural resources that are of local, state, or national importance. As such, use of the five (5) known cultural resources identified in Section 2.0 above, would require evaluation per Section 4(f).

4 Air Quality/Noise

Sensitive receptors are locations where people reside or where the presence of unwanted sound or increased levels of air pollution could adversely affect the use of the land. For noise, a sensitive receptor is generally an exterior location of a property, which is considered to contain a noise sensitive land use such as picnic areas, recreation areas, playgrounds, active sports areas, residences, guest lodges, schools, churches, libraries and hospitals. For air quality, a sensitive receptor is identified as an exterior location outside the mixing zone of uniform emissions and turbulence, which typically includes residences, bus stops, parks, and other public places to which the general public has access.

Using available aerial photography, the presence or absence of sensitive receptors to air quality and noise was evaluated within the study area. Based on aerial photography interpretation, it was determined that numerous sensitive receptors exist within the study area including multiple bus stops, and residential

Environmental Screening Report

dwelling units. In addition, the following nine sensitive receptors listed in Table 1 below, were also identified within the study area. Please refer to Appendix A – Figure 3B for an environmental constraints map depicting the location of sensitive receptors in relation to the study area.

Table 1 – Sensitive Receptors within Study Area

Name	Address	Type
Camden Kids Academy	1459 Haddon Avenue, Camden, NJ	Child Care Center
MEL, Inc.	1131-33 Haddon Avenue, Camden, NJ	Child Care Center
The Happy Child Learning Center	1051-1053 Haddon Ave, Camden, NJ	Child Care Center
Dr. Martin Luther King Junior Center	1151 Haddon Ave, Camden, NJ	Community Facility
STARS Adult Medical Day Center	1470 Haddon Ave, Camden, NJ	Medical Facility
Masjid Muhammad Abdul Wahab	1032 Spruce St, Camden, NJ	Religious Institution
Dominican Monastery of the Holy Rosary	1500 Haddon Ave, Camden, NJ	Religious Institution
The Quba School and Islamic Center	1311 Haddon Ave, Camden, NJ	Religious Institution
Muhammad University of Islam No 20	1157 Haddon Ave, Camden, NJ	Religious Institution

The proposed project is exempt under Table 2 – Pavement resurfacing and/or rehabilitation of the Transportation Conformity Rule in the Clean Air Act Amendments (CAAA). As such, the proposed project is exempt from the conformity requirement of the CAAA, including a PM 2.5 analysis, per 40 CFR 93.126 and is not anticipated to have adverse air quality impacts.

It is anticipated that the project would be classified as a Type III project under 23 CFR 772.7 and would not require analysis for highway traffic noise impacts. Type III projects do not involve added capacity, construction of new through lanes or auxiliary lanes, substantial changes in the horizontal or vertical alignment of the roadway or exposure of noise sensitive land uses to a new existing highway noise source.

5 Ecological Constraints

5.1 Wetlands and Vernal Pools

Activities proposed in wetlands and their associated transition areas are regulated by the NJDEP Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A) and the Clean Water Act as administered by the United States Army Corps of Engineers (USACE). The NJDEP 2012 Land Use/Land Cover data and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) geospatial data were reviewed to identify potential wetlands within the study area. According to this review, there are no wetlands located within the study area.

According to the NJDEP Landscape Project Version 3.3 Vernal Habitat GIS data layer, the study area does not contain any vernal habitats or potential vernal habitats.

5.2 Surface Waters

The closest surface water to the study area is Copper River, located approximately 1,000 feet east of the study area. According to the New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B), Cooper River is classified as a Freshwater Non-Trout (FW2-NT) waterway. Cooper River is a tributary of the Delaware

Environmental Screening Report

River and is considered a tidal waterway within the City of Camden. The study area is located in the Lower Delaware Watershed Management Area (WMA 18) and is completely contained within the Cooper River (Route 130 to Wallworth gage) Hydrologic Unit Code (HUC)-14 watershed (No. 02040202110050).

5.2.1 Riparian Zones

The NJDEP Flood Hazard Area Control Act Rules (N.J.A.C. 7:13) establishes jurisdiction over riparian zones. Riparian zones are defined as the land and vegetation within and adjacent to a regulated water. As discussed above, Cooper River is a FW2-NT waterway located approximately 1,000 feet away from the study area. Since the Cooper River is located more than 300 feet away from the study area, proposed project activities will be located outside of the NJDEP regulated riparian zone.

5.2.2 Sole Source Aquifers

Sole source aquifers are those aquifers that contribute more than 50% of the drinking water to a specific area and the water would be impossible to replace if the aquifer were contaminated. Sole source aquifers are defined with guidelines set forth by the U.S. Environmental Protection Agency (EPA) as authorized in Section 1424(e) of the Safe Drinking Water Act of 1974.

Based on available data from the New Jersey Geological and Water Survey (NJGWS), the study area is located in the New Jersey Coastal Plain Sole Source Aquifer System. Although the proposed project is located within the limits of the USEPA - mapped sole-source aquifer, a Groundwater Quality Assessment (GQA) will not be required since this type of project does not meet the criteria set forth in the USEPA and Federal Highway Administration (FHWA) Memorandum of Understanding on Sole Source Aquifers dated 7/8/1984. Please refer to Appendix B – Agency Correspondence, for the USEPA and FHWA Memorandum of Understanding.

5.2.3 Tidelands

Tidelands, as defined by the NJDEP, are all lands now or formerly flowed by the mean high tide of a natural waterway. Tidelands are owned by all of the people of the State of New Jersey and require permission from the State for the primary use of these lands in the form of a tidelands license, lease or grant. As discussed in Section 5.2 above, Cooper River is a tidal waterway and is located approximately 1,000 feet away from the study area. Projects or structures built or proposed in a tidally flowed waterway anywhere in New Jersey require a Waterfront Development permit and NJDEP Bureau of Tidelands issued Tidelands Conveyance. Since proposed project activities are limited to the vicinity of Haddon Avenue neither a Tidelands Application nor Waterfront Development Permit will be required for this project.

5.2.4 Well Head Protection Areas

In New Jersey, a Well Head Protection Area (WHPA) is a mapped area calculated around a public Community Water Supply (CWS) well or a Non-Community Water Supply (NCWS) that delineates the horizontal extent of ground water captured by a well pumping at a specific rate over a two-, five-, and twelve-year period of time. Through the regulation of land use, physical facilities and other activities within WHPAs, the potential for groundwater contamination can be reduced.

According to available data from the NJDEP, portions of the study area are located within a public CWS WHPA. It is not likely that proposed project activities will result in changes to land use or adversely affect groundwater quality.

5.2.5 Wild and Scenic Rivers

The Wild and Scenic Rivers Act establishes a national policy that selected rivers and their immediate environments that possess pristine scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values shall be preserved in a free-flowing condition and protected for the benefit and enjoyment of present and future generations. The National Park Service (NPS) Wild and Scenic River System was consulted to determine if the Cooper River is designated as a Wild and Scenic River. According to the NPS Scenic River System, Cooper River is not designated as a Wild or Scenic River. Additionally, according to the NJDEP Environmentally Sensitive Areas Guidance Document (Revised October 2017), Cooper River is not listed on the New Jersey Wild and Scenic Rivers System.

5.3 Floodplains

All regulated waters with drainage areas of 50 acres or greater have flood hazard areas regulated by the NJDEP Flood Hazard Area Control Act Rules (N.J.A.C. 7:13). Available Federal Emergency Management (FEMA) Flood Insurance Rate Map (FIRM) data was reviewed to determine if project activities are proposed within the regulated Flood Hazard Area (FHA). According to FIRM Panel No. 34007C0036F, the 1% annual chance floodplain elevation is depicted at elevation 9 feet (NAVD88). The flooding is due to the tidal influence of the Delaware River. For tidal FHAs, NJDEP Method 2 establishes the NJFHA design flood elevation at equal elevation to the FEMA 1% flood elevation. Therefore, the NJFHA design flood elevation is determined to be 9 feet (NAVD88).

In October 2019, the project corridor, specifically the vicinity of Haddon Avenue and Park Boulevard was reassessed to determine if it is located within the New Jersey Regulated Flood Hazard Area, and subsequently, if proposed project activities would be subject to the NJDEP Flood Hazard Area Control Act Rules. A review of LIDAR data depicts a small portion of the project corridor near Park Boulevard and Haddon Avenue at elevation 9 feet (NAVD 88). As such, this portion of the project corridor is located within the 100-year tidal Flood Hazard Area of the Delaware River. Therefore, proposed project activities will be regulated under the NJDEP Flood Hazard Area Control Act Rules.

Please refer to Appendix A – Figure 3C for a map depicting the location of the flood hazard area in relation to the study area.

5.4 Stormwater Management and Water Quality

The NJDEP Stormwater Management Rules (N.J.A.C. 7:8) require that all projects classified as a major development meet certain standards for water quality, water quantity, and groundwater recharge. A major development is defined as any development that disturbs one or more acres of land or increases impervious surface by 0.25 acre or more. Projects that qualify as a major development must implement Best Management Practices (BMPs) to reduce adverse effects to water quality, water quantity, and groundwater recharge. If the selected PPA is classified as a major development, the project will be designed to meet the criteria set forth in the Stormwater Management Rules.

Stormwater Management Rules (N.J.A.C. 7:8) requires that projects meeting the definition of a Major Development maintain 100% of the average annual preconstruction groundwater recharge or that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrated. The groundwater recharge requirements are waived for Urban Redevelopment Areas, which include Metropolitan Planning Areas, Designated Centers, Cores, or Nodes. Since the study area is delineated on the State Plan Policy Map (SPPM) as a Metropolitan Planning Area, it is anticipated that the project will be exempt from the groundwater recharge requirement. It is not anticipated that the selected

Environmental Screening Report

PPA would introduce more than 0.25 acre of net new impervious surface. As such, the project would not be required to provide additional water quality treatment per the NJDEP Stormwater Management Rules (N.J.A.C. 7:8-5.5). Additionally, since net new impervious would not significantly increase, it is assumed that the post development runoff hydrograph would be equal to that of the pre-development hydrograph and therefore, the water quantity control criterion (N.J.A.C. 7:8-5.4) would be satisfied. The Stormwater Management requirements for the project will be reevaluated as part of the alternatives analysis and selection of the PPA.

5.5 Soil Erosion and Sediment Control

If the project will result in more than 5,000 ft² of ground disturbance, water quality degradation concerns during construction will be addressed by implementing soil erosion and sediment control measures designed in accordance with *The Standards for Soil Erosion and Sediment Control in New Jersey*. A Soil Erosion and Sediment Control application will be submitted to the Camden County Soil Conservation District for certification. Upon receipt of the certification, Request for Authorization under the New Jersey Pollution Discharge Elimination System (NJPDES) General Stormwater Permit for Construction (5G3) will be required, assuming the project exceeds the 1 acre threshold for ground disturbance.

5.6 Threatened and Endangered Species

The New Jersey Natural Heritage Program (NHP) maintains a computer database of reported sightings of rare plants, animals, and natural communities in the State. Correspondence with the NHP dated September 6, 2018 indicates that there are no known records of threatened or endangered species documented within the project corridor. However, the bald eagle (*Haliaeetus leucocephalus*, state endangered) foraging habitat was documented as occurring within ¼-mile of the project limits. Proposed project activities are limited to existing paved areas and will not impact bald eagle foraging habitat. Please refer to Appendix B for NHP correspondence letter.

The USFWS New Jersey Field Office also maintains records of federally listed species in the State. The USFWS Information, Planning, and Conservation (IPaC) system was reviewed to determine if any species protected by the Endangered Species Act are documented within the study area. Based on the results from the USFWS IPaC Species List, generated July 31, 2018, there are no federally listed threatened or endangered species or critical habitat identified within the study area. See Appendix B for the USFWS Species List.

6 Environmental Justice and Socioeconomic

The Environmental Justice Policy Executive Order assists in the establishment of the State's commitment to ensure that minority populations and low-income communities are afforded fair treatment and meaningful involvement in decision-making regardless of race, color, ethnicity, religion, income or education level.

The Environmental Protection Agency (EPA) Environmental Justice Screening (EJ Screen) Tool was used to determine the presence or absence of minority and/or low-income populations within the study area. The study area used for the EJ screen was delineated as a ¼-mile buffer from proposed project corridor (Haddon Avenue from Euclid Avenue to Newton Avenue).

Available demographic and economic data from the U.S. Census 2012-2016 American Community Survey (ACS) 5-year estimates were populated by the EJ Screen tool to determine the presence or absence of minority/and or low-income populations within the study area. Based on this information, it was determined that the population within the study area is 12,741 persons, approximately 97% of the

Environmental Screening Report

population consists of minorities, 13% of people within the study area speak English less than well, and approximately 32% of the households within the study area live at or below the federal poverty level. The summary report generated by the EJ Screen Tool indicates that there may be potential EJ issues in the project area. Please refer to the Community Profile, under separate cover, for more detailed information.

Although low-income and minority populations are present, the proposed work will not isolate any residential neighborhoods or adversely impact community cohesion in the project area. The proposed project is not anticipated to alter access to public transportation, negatively impact pedestrian, bicyclist, and/or motorist safety, or involve a disproportionately high and adverse effect to any minority or low income population. Coordination with property and business owners is recommended during the design phase of the project to maintain accessibility during construction, as well as, coordination with NJ Transit regarding impacts to existing bus routes and bus stops. In addition, multilingual public outreach may be necessary to engage residents. Furthermore, it is not anticipated that the proposed project will affect farmland or community facilities.

7 Hazardous Waste

Available geospatial data from the NJDEP were obtained, including the NJDEP's Known Contaminated Sites List and historic fill, to determine the potential for involvement with hazardous materials. A review of this dataset revealed that there are thirteen (13) sites located within 300-feet of the project corridor with the potential to be an Area of Concern (AOC). The potential contaminated sites are listed in Table 2 below.

Table 2– Potential Area of Concerns within 300-feet of Project Corridor

Facility Name	Category	Status
Cutler Metals	Known Contaminated Site	Active
Francis Metal Fabrication Incorporated	Known Contaminated Site	Active
Pitt's Automotive	Auto Shop	Active
Highline Motos	Auto Shop	Active
Foreign & Domestic Car Shop	Auto Shop	Active
Tony's Auto Center	Auto Shop	Active
Joseph H. Stomel & Sons	UST	Terminated
Julian Cleaners	UST	Terminated
Peoples Laundromat	UST	Terminated
Harry Pape & Sons	Known Contaminated Site	Active
Erain Motors Corporation	Auto Shop	Active
Charlie & Son Service Center LLC	UST	Terminated
Foote & Jenks Corp	UST	Terminated

According to available geospatial data from the New Jersey Geological and Water Survey, mapped historic fill is located within the project limits near Haddon Avenue and Interstate 676. Historic fill material is material generally deposited to raise the topographic elevation of the site, which was contaminated prior to emplacement. Since Interstate 676 is an elevated roadway at Haddon Avenue, It is likely the historic fill was used during construction of Interstate 676 to raise the roadway profile. The NJDEP considers historic fill material an Area of Concern (AOC) pursuant to the Technical Requirements, N.J.A.C. 7:26E-1.8. Historic fill is typically characterized as non-hazardous or ID-27 waste and requires and should be handled according to *NJDEP Site Remediation Program Historic Fill Material Technical Guidance* (April 2013) and

Environmental Screening Report

the *NJDEP Linear Construction Technical Guidance* (January 2012). Please refer to Appendix A – Figure 3D for an environmental constraints map depicting the location of potential AOCs within the study area.

Once the limit and extent of the project impacts are known, further investigation may be necessary to determine the nature of the contamination at some of the sites, and the potential implications during construction. Also should any properties be acquired and demolished or disturbed by construction activities, contaminated material containment, cleanup, and removal measures may be required.

8 Zoning and Land Use

According to the Parkside Neighborhood Revitalization Plan, Haddon Avenue is zoned Commercial District C-1 within the study area. The Commercial District C1 allows ground floor retail with residential units on the upper floor, and attached row-home type dwelling units. The Commercial Overlay Zone CV-2 provides sufficient space in appropriate locations for various types of public and semi-public recreational development, conservation and other open space uses.

The land use within the study area consists primarily of multi-family residential, commercial, and light industrial. The light industrial land uses are situated near the northern end of the project corridor and includes the NJ Transit Newton Avenue Bus Garage. There are several abandoned residential dwelling units along the project corridor. Please refer to Appendix A – Figure 4 for a figure depicting land use within the study area.

Implementation of the proposed project will be consistent with the existing land use and will not create a conflict with zoning regulations, change the intensity of the land use, or impact the character or quality of the existing community.

9 Anticipated Approvals and Authorizations

9.1 Federal Permits/Approvals/Coordination

There is the potential for the project to acquire federal funding from the Federal Highway Administration (FHWA). If the project receives federal funding, then the project is considered a federal action and is subject to review per the National Environmental Policy Act (NEPA) of 1969. NEPA requires federal agencies to consider environmental issues prior to making any major decisions on projects that have federal involvements (e.g. funding or permitting). To determine a project's potential benefit or harm to the environment, NEPA requires an assessment of environmental impacts and an evaluation of alternatives to avoid identified impacts to the environment. There are three classes of action which prescribe the level of documentation required in the NEPA process: Class I (Environmental Impact Statement); Class II (Categorical Exclusion); and Class III (Environmental Assessments). The specific level of documentation will be determined as part of the CD process.

In addition to NEPA, the following federal authorizations or permits may be required for the project:

- Consultation with the NJSHPO per Section 106 of the National Historic Preservation Act of 1966 to assess project effects to cultural resources;
- Compliance with the Federal Clean Air Act Amendments of 1990;
- FHWA Section 4(f) of the USDOT Evaluation to assess use of cultural resources and publicly owned parks; and
- Compliance with 23 CFR §772, Procedures for Abatement of Highway Traffic Noise and Construction Noise.

9.2 State Permits/Approvals/Coordination

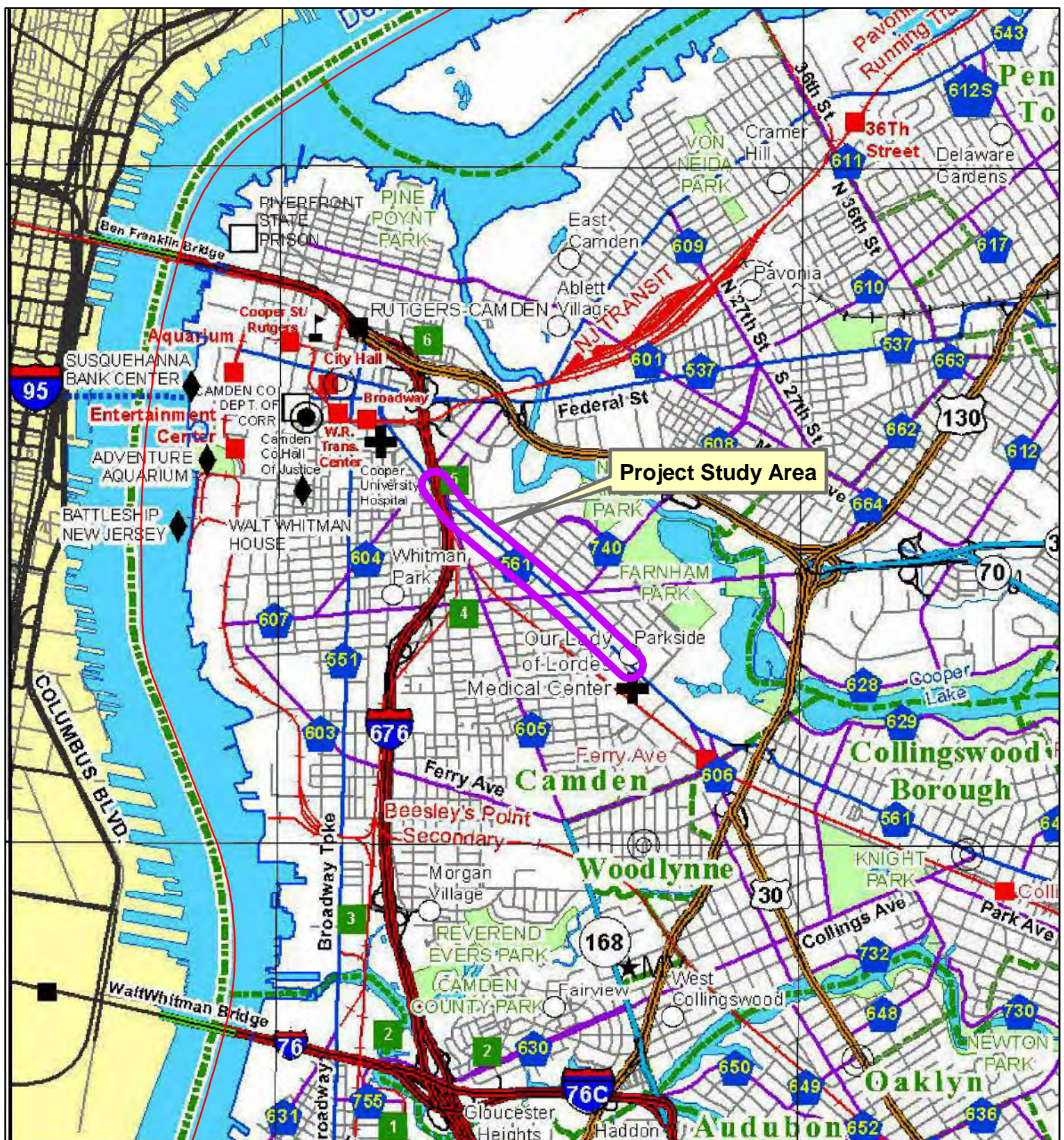
- Demonstrated compliance with the NJDEP Flood Hazard Area Control Act Rules;
- Demonstrated compliance with the NJDEP Stormwater Management Rules;
- NJDEP Water Quality Certificate;
- NJ Pollutant Discharge Elimination System (NPDES) General Stormwater Permit for Construction (5G3) if the project results on greater than (1) acre of ground disturbance;
- Certification from the Camden Soil Conservation District; and
- Compliance with the NJDEP Technical Requirements for Site Remediation and LSRP Program for potential involvement with historic fill or regulated material.

10 References

- New Jersey Department of Environmental Protection. *Freshwater Wetland Protection Act Rules (N.J.A.C. 7:7A)*. 2018.
- New Jersey Department of Environmental Protection. *Surface Water Quality Standards (N.J.A.C. 7:9B)*. 2010.
- New Jersey Department of Environmental Protection. *Flood Hazard Area Control Act Rules (N.J.A.C. 7:13)*. 2018.
- New Jersey Department of Environmental Protection. *New Jersey Register of Historic Places Act Rules (N.J.A.C. 13:4)*. 2008.
- New Jersey Department of Environmental Protection, Green Acres Program. *Green Acres Recreation & Open Space Inventory*. 2014.
- New Jersey Department of Environmental Protection, New Jersey Geological Survey. *NJDEP Sole-Source Aquifers in New Jersey*. 1998.
- New Jersey Department of Environmental Protection, Wetlands from Land Use/Land Cover 2012 Update. 2015.
- New Jersey Department of Environmental Protection, New Jersey Geological Survey. *NJDEP 14 Digit Hydrologic Unit Code delineation for New Jersey (DEPHUC14)*. 2006.
- United States Department of Commerce, United States Census Bureau, American Community Survey (ACS) 2011-2015.
- United States Department of Homeland Security, Federal Emergency Management Agency. *Flood Insurance Rate Map Panel No. 34007C0036F*. 2016.
- United States Department of Interior, United States Fish and Wildlife Service. *Classification of Wetlands and Deepwater Habitats of the United States*. 2017.

Appendix A

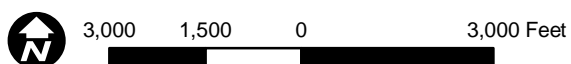
Figures



Legend

Project Study Area

Base Map: New Jersey Department of Transportation



Camden County

Figure 1
County Road Map

Haddon Avenue (CR 561)
Improvement Project

Concept Development

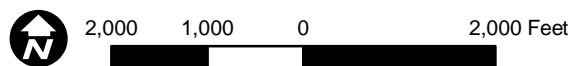
City of Camden, Camden County
New Jersey





Legend

- Project Limits
- Project Study Area



Camden County

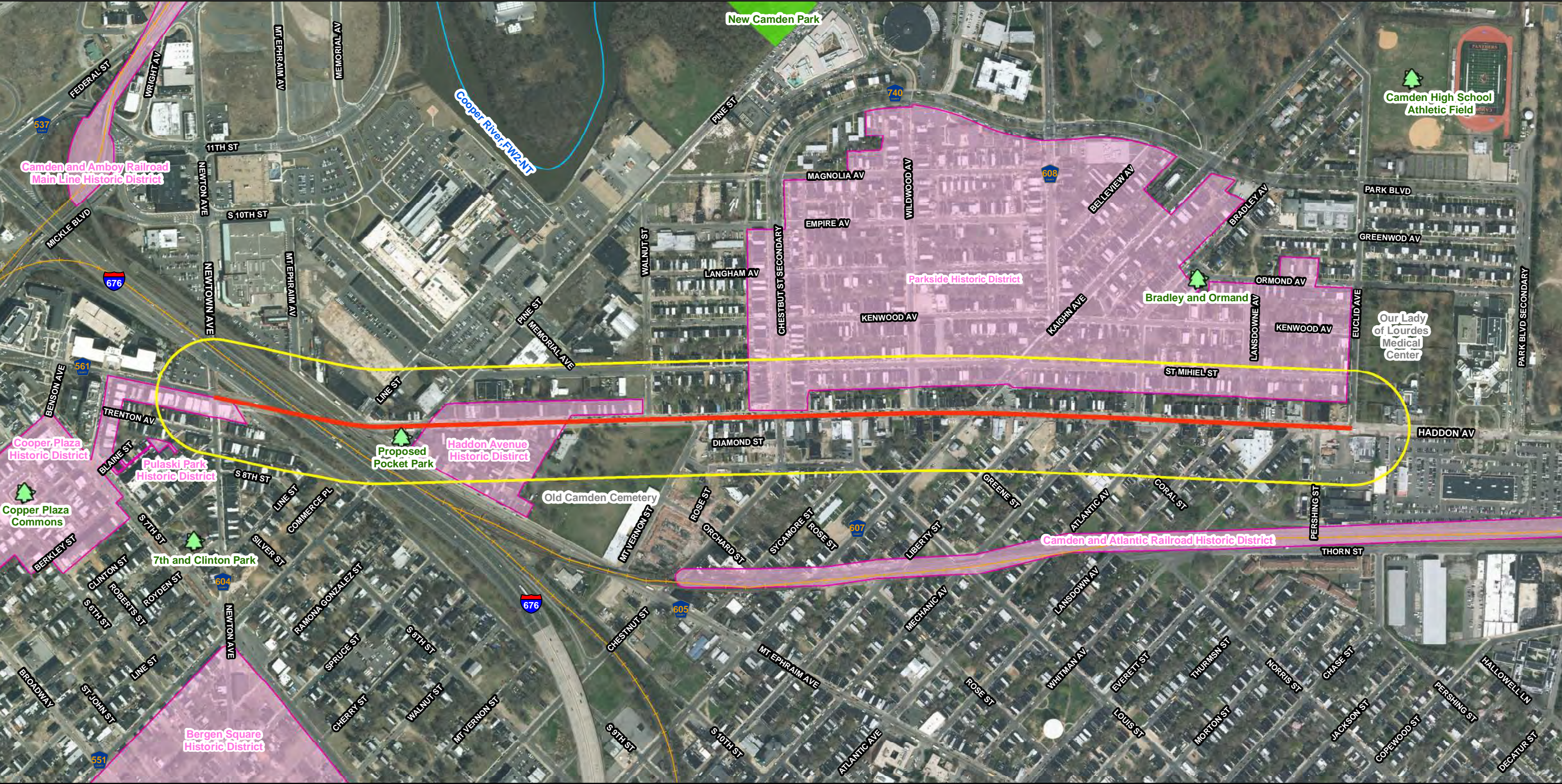
Figure 2

USGS 7.5' Topographic Map
Camden, NJ and Philadelphia, PA

Haddon Avenue (CR 561)
Improvement Project

Concept Development
City of Camden, Camden County
New Jersey





Legend

- Parks
- Project Limits
- Rail
- Streams
- Study Area
- Camden County Park
- Historic Districts

Figure 3A
Environmental Constraints - Parks and Historic Districts

Haddon Avenue (CR561) Improvement Project Concept Development
Euclid Avenue to Newton Avenue

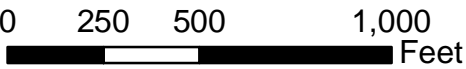


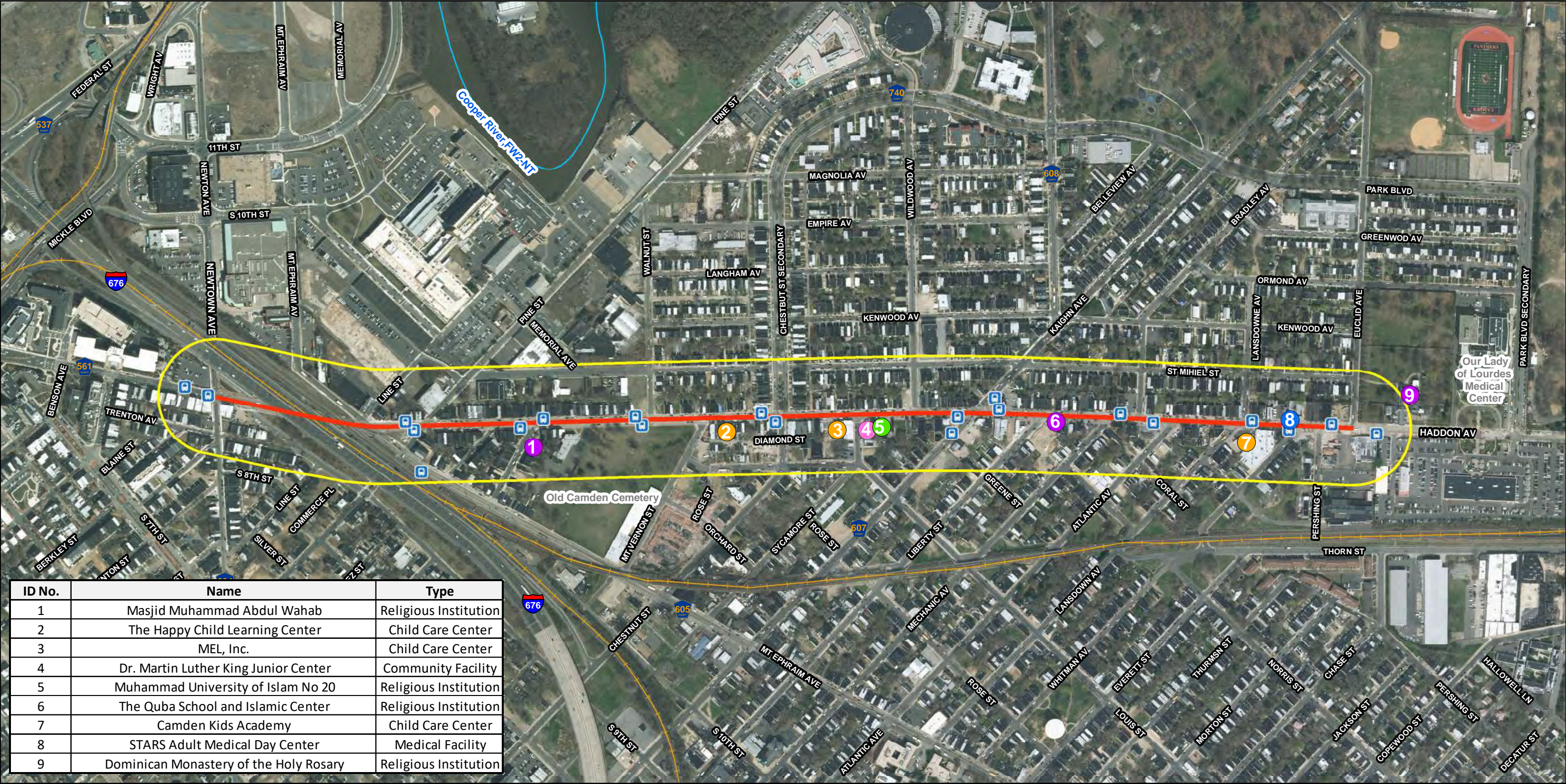
City of Camden, Camden County



Data Source: Camden County, Camden County Park System, 2017;
New Jersey Department of Environmental Protection, Historic Districts
of New Jersey, Edition 20160922

Base Map: Base Map: NJ Office of Information Technology(NJOIT),
Office of Geographic Information Systems (OGIS), New Jersey 2015
High Resolution Orthophotography.





ID No.	Name	Type
1	Masjid Muhammad Abdul Wahab	Religious Institution
2	The Happy Child Learning Center	Child Care Center
3	MEL, Inc.	Child Care Center
4	Dr. Martin Luther King Junior Center	Community Facility
5	Muhammad University of Islam No 20	Religious Institution
6	The Quba School and Islamic Center	Religious Institution
7	Camden Kids Academy	Child Care Center
8	STARS Adult Medical Day Center	Medical Facility
9	Dominican Monastery of the Holy Rosary	Religious Institution

Legend

- Schools

● Child Care Facilities

● Hospital/Medical Facility

● Community Facility

● Religious Institution

● Bus

— Project Limits

— Rail

— Streams

Study Area

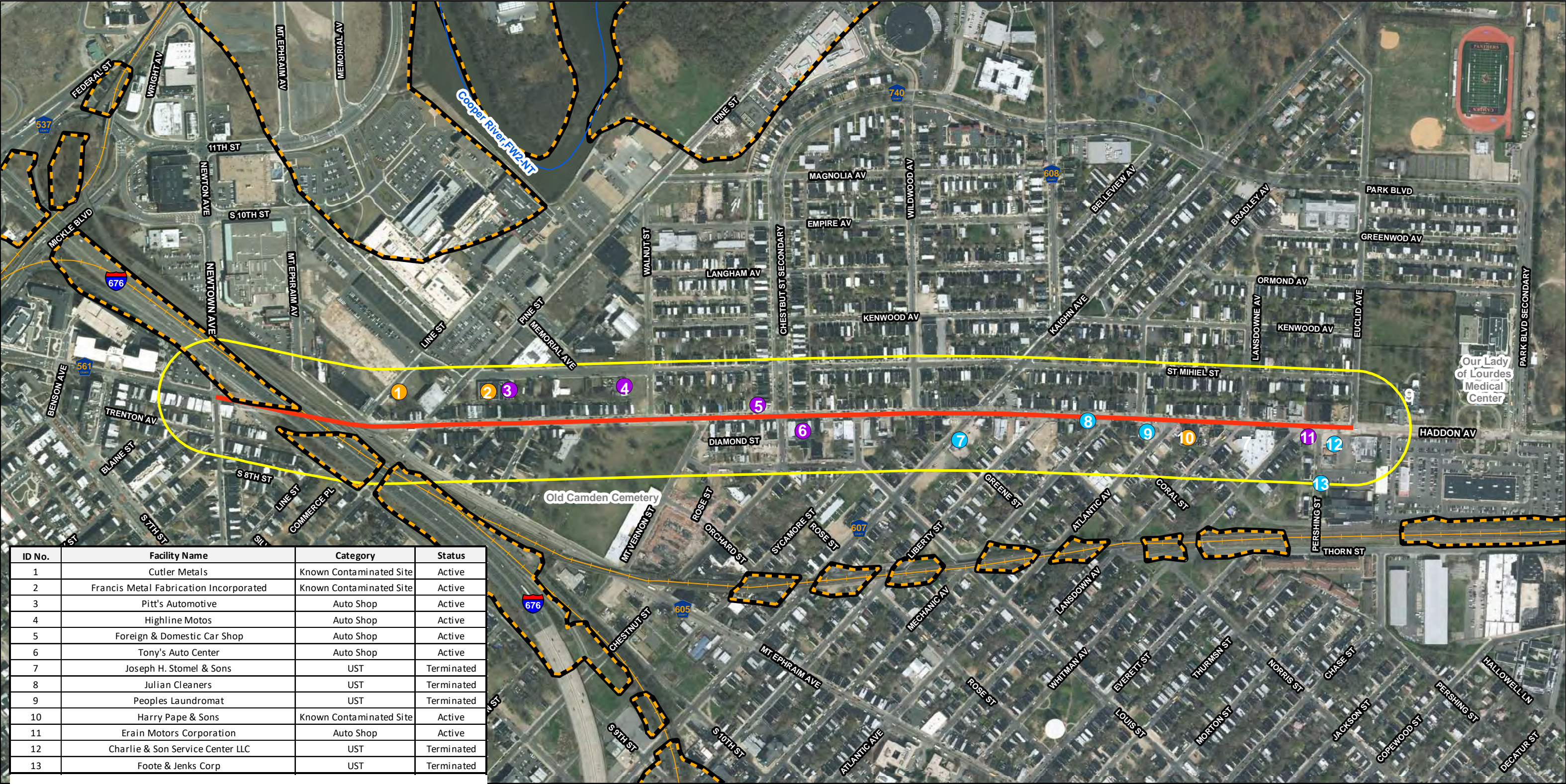
Figure 3B
Environmental Constraints - Sensitive Receptors

Haddon Avenue (CR561) Improvement Project Concept Development
Euclid Avenue to Newton Avenue
City of Camden, Camden County



Base Map: Base Map: NJ Office of Information Technology(NJOIT),Office of Geographic Information Systems (OGIS), New Jersey 2015 High Resolution Orthophotography.

0 250 500 1,000 Feet



ID No.	Facility Name	Category	Status
1	Cutler Metals	Known Contaminated Site	Active
2	Francis Metal Fabrication Incorporated	Known Contaminated Site	Active
3	Pitt's Automotive	Auto Shop	Active
4	Highline Motos	Auto Shop	Active
5	Foreign & Domestic Car Shop	Auto Shop	Active
6	Tony's Auto Center	Auto Shop	Active
7	Joseph H. Stomel & Sons	UST	Terminated
8	Julian Cleaners	UST	Terminated
9	Peoples Laundromat	UST	Terminated
10	Harry Pape & Sons	Known Contaminated Site	Active
11	Erain Motors Corporation	Auto Shop	Active
12	Charlie & Son Service Center LLC	UST	Terminated
13	Foote & Jenks Corp	UST	Terminated

Legend

- NJDEP Known Contaminated Sites

Underground Storage Tanks

Auto Shop

Project Limits

Rail
- Streams

Study Area

NJDEP Mapped Historic Fill

Figure 3D
Environmental Constraints - Area of Concern

Haddon Avenue (CR561) Improvement Project Concept Development
Euclid Avenue to Newton Avenue



City of Camden, Camden County



Data Source: NJ Department of Environmental Protection
Known Contaminated Site List for New Jersey, 2017;
New Jersey Department of Environmental Protection,
New Jersey Geological and Water Survey, Historic Fill For
New Jersey As of March 2018

Base Map: Base Map: NJ Office of Information
Technology(NJOIT),Office of Geographic
Information Systems (OGIS), New Jersey 2015
High Resolution Orthophotography.

0

250

500

1,000

Feet



Legend

Project Limits	Commercial	Recreation
Rail	Industrial	Residential Multi-Family
Study Area	Institutional	Transitional Land
Commercial Mixed-Use	Parking	Undeveloped

Figure 4 Existing Land Use

Haddon Avenue (CR561) Improvement Project Concept Development
Euclid Avenue to Newton Avenue

City of Camden, Camden County

Data Source: Delaware Valley Regional Planning Commission (DVRPC), DVRPC - 2015 Land Use Enhanced, updated July 2018.

Base Map: Base Map: NJ Office of Information Technology(NJOIT),Office of Geographic Information Systems (OGIS), New Jersey 2015 High Resolution Orthophotography.

0 250 500 1,000 Feet

Appendix B

Agency Correspondence

USEPA and FHWA Memorandum of Understanding on Sole
Source Aquifers dated 7/8/1984



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

Mr. John G. Bestgen
Regional Administrator
Federal Highway Administration
Region One
Room 729
Leo W. O'Brien Building
Albany, New York 12207

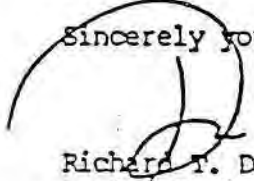
Dear Mr. Bestgen:

I have reviewed your transmittal of June 1, 1984 containing a partially executed Memorandum of Understanding between our two agencies regarding project reviews for the Sole Source Aquifer (SSA) program and have signed where appropriate. I have enclosed a fully executed copy for your files.

Our agency looks forward to a cooperative effort with the FHWA in the review of any highway projects that may impact an SSA area so that we can insure adequate protection to the associated ground water.

If you need any further assistance on this matter, please have your staff contact Mr. Walter Andrews, Chief of the Drinking/Ground Water Protection Branch, at 212-264-1800.

Sincerely yours,


Richard T. Dewling
Acting Regional Administrator

cc: Bruce Mattson
Federal Highway Administration

MEMORANDUM OF UNDERSTANDING

Between

FEDERAL HIGHWAY ADMINISTRATION, REGION I
and
ENVIRONMENTAL PROTECTION AGENCY, REGION II

This memorandum represents an agreement between the regional offices of the Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA) concerning the review of projects for which Federal financial assistance is sought that may affect sole source aquifers designated pursuant to Section 1424(e) of the Safe Drinking Water Act (P.L. 93-523). This memorandum serves two primary purposes: (1) to set forth the types of projects that will necessitate review, (2) to describe the notification and review procedures that will be employed.

Pursuant to Section 1424(e), EPA has determined that the aquifer systems listed on Attachment No. 1 are the principal sources of drinking water for its residents. As such, no commitment for Federal financial assistance may be entered into for any project which EPA determines may contaminate an aquifer through its recharge zone as to create a significant hazard to public health.

The EPA will notify FHWA of all future 1424(e) aquifer designations in EPA Region II. This memorandum will apply to all future sole source aquifer designations in EPA Region II.

Goal and Definitions

The goal of this memorandum is to ensure that each project that is to receive Federal financial assistance is designed in a manner that will prevent the introduction of contaminants into the aquifer in quantities that may create a public health hazard, or otherwise contaminate a sole source aquifer to a level which would require additional treatment facilities by an existing or planned public water system in order to meet the National Interim Primary Drinking Water Regulations.

A "significant hazard to public health" will be deemed to occur if the level of contaminants in an aquifer would:

- (a) exceed any maximum contaminant level set forth in any promulgated National Primary Drinking Water Standard at any point where the water may be used for drinking purposes, or
- (b) otherwise threaten public health.

In determining whether a level of contaminant would threaten public health, the following factors at a minimum shall be considered:

- (1) the toxicity of the contaminants involved;

- (2) the volume of contaminants which may enter the aquifer; and
- (3) aquifer characteristics, i.e., geochemical, hydrological, geological, etc., and attenuation capability of the aquifer.

Early Notification

In order to achieve the above goal, the FHWA, at the time of Intergovernmental Review per Executive Order 12372, or when preliminary engineering funds are authorized, will provide EPA with early notification of projects for which one of the following criteria apply:

1. Construction of additional through-traffic lanes, or interchanges, or rotaries on existing roadways.
2. Construction of a two or more lane highway on new alignment.
3. Construction of rest areas with on-site sewage disposal facilities.
4. Other projects which, in the opinion of FHWA, may have an effect on the water quality of the aquifer to the extent that the goal outlined above would not be achieved.

This early notification will serve to initiate consultations to determine the scope of study for any required water quality assessment.

1424(e) Review

For those projects requiring a 1424(e) review, FHWA will provide EPA with a ground water quality assessment as soon as practicable following the early notification to permit EPA to make an early determination on the impact of the project on the quality of the ground water. If a determination has not been made prior to the circulation of the draft environmental impact statement (DEIS), the 1424(e) review will be performed by EPA concurrently with the National Environmental Policy Act NEPA review. For those projects which do not require an EIS, EPA agrees to complete the 1424(e) review within 45 days after receipt of the ground water quality assessment. For those projects being considered for Federal-aid highway funding at the time of the sole source determination, the liaison officers will meet to determine the information needed for review (scope) and EPA agrees in turn to complete any needed reviews within 30 days after receipt of this information.

The FHWA and EPA will each assign a representative to serve as liaison. The liaison officers are:


FHWA Director, Office of Planning and Program Development
 Region I - U.S. Department of Transportation
 Federal Highway Administration
 Leo W. O'Brien Federal Building, 7th Floor
 Albany, New York 12207

EPA - Chief, Drinking/Ground Water Protection Branch
Region II Environmental Protection Agency, Region II
26 Federal Plaza, Room 907
New York, New York 10278


Representatives will meet as needed to update this memorandum. This memorandum is subject to revision upon agreement of both parties.

Federal Highway Administration

U.S. Environmental Protection Agency


Regional Administrator

Date: June 4, 1984


Regional Administrator

Date: 7/9/84
1984

New Jersey Department of Environmental Protection
Natural Heritage Program Data Request



State of New Jersey

MAIL CODE 501-04

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF PARKS & FORESTRY

NEW JERSEY FOREST SERVICE

OFFICE OF NATURAL LANDS MANAGEMENT

P.O. BOX 420

TRENTON, NJ 08625-0420

Tel. (609) 984-1339 Fax (609) 984-0427

PHILIP D. MURPHY

Governor

SHEILA Y. OLIVER

Lt. Governor

CATHERINE R. McCABE

Acting Commissioner

September 6, 2018

Ebony Washington
KMA Consulting Engineers
1010 Berlin Road
Cherry Hill, NJ 08034

Re: Camden County Concept Development Study Haddon Avenue (CR561) Improvement Project
Euclid Avenue to Newton Avenue
Camden City, Camden County

Dear Ms. Washington:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Natural Heritage Data Request Form into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we

NHP File No. 18-3907581-14815

recommend that you visit the interactive web application at the following URL,
<https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7>, or contact the
Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at <http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html>.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from
<http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Robert J. Cartica
Administrator

c: NHP File No. 18-3907581-14815

Table 1: On Site Data Request Search Results (6 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	No	0 pages included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	Yes	1 page(s) included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

<p>Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches</p>
--

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<hr/>								
<i>Aves</i>								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Rare Wildlife Species or Wildlife Habitat
In the Immediate Vicinity of the
Project Site Based on Search of
Landscape Project 3.3 Stream Habitat File**

Link ID	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank	Last Observed	Count
13948	Eastern Pondmussel	Ligumia nasuta	Occupied Habitat	3	NA	State Threatened	G4	S2	2013	5
13948	Tidewater Mucket	Leptodea ochracea	Occupied Habitat	3	NA	State Threatened	G3G4	S2	2013	16
13948	Yellow Lampmussel	Lampsilis cariosa	Occupied Habitat	3	NA	State Threatened	G3G4	S2	2013	1

Total number of records: 3

United State Fish and Wildlife Service
Official Species List



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
Phone: (609) 646-9310 Fax: (609) 646-0352

<http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

In Reply Refer To:

July 31, 2018

Consultation Code: 05E2NJ00-2018-SLI-1478

Event Code: 05E2NJ00-2018-E-03087

Project Name: Concept Development Study Haddon Ave (CR 561) Improvement Project Euclid Avenue to Newton Avenue

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the

footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Jersey Ecological Services Field Office

4 E. Jimmie Leeds Road, Suite 4

Galloway, NJ 08205

(609) 646-9310

Project Summary

Consultation Code: 05E2NJ00-2018-SLI-1478

Event Code: 05E2NJ00-2018-E-03087

Project Name: Concept Development Study Haddon Ave (CR 561) Improvement Project
Euclid Avenue to Newton Avenue

Project Type: TRANSPORTATION

Project Description: Concept Development Study

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.93388615943163N75.10552269743974W>



Counties: Camden, NJ

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

NAME	BREEDING SEASON
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

How is the probability of presence score calculated? The calculation is done in three steps:

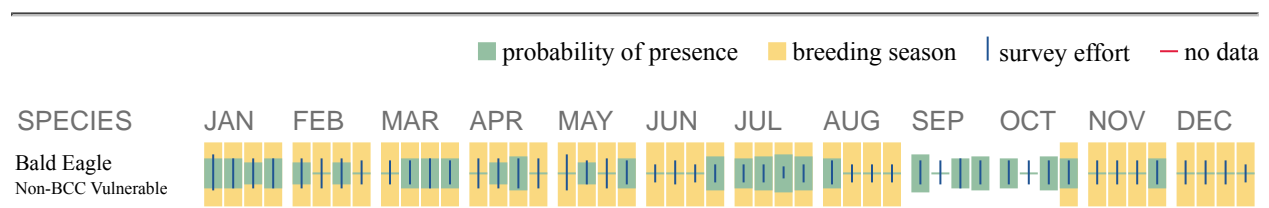
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

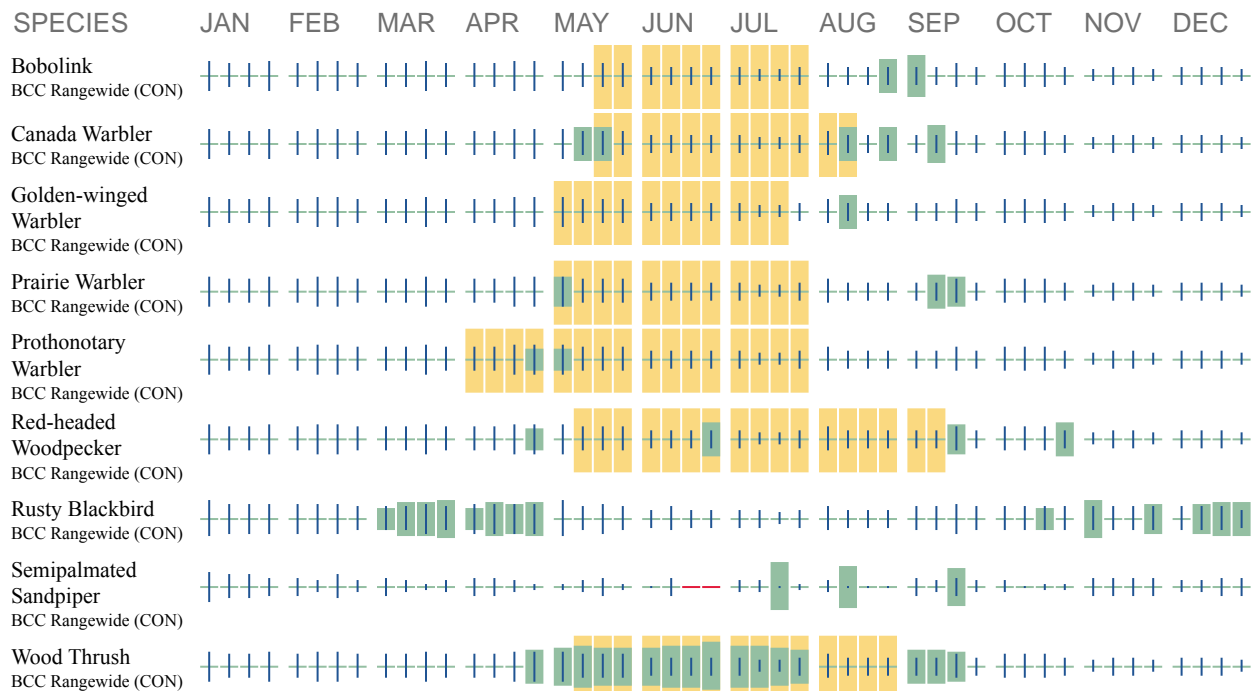
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

A week is marked as having no data if there were no survey events for that week.

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
 2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
-

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

From: [Kathy Cullen](#)
To: [Boerchers, Bernard](#); [Kuhn, Dave](#); [Steponanko, Julia](#); [Marra, Christopher](#)
Subject: FW: Haddon Avenue Concept Development - Environmental Screening Report - email 1
Date: Thursday, June 20, 2019 1:28:07 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

GPI team:

Your ESR was approved.

Thank you.

Kathy

From: "Coe, Lauren" <Lauren.Coe@dot.nj.gov>
Date: Thursday, June 20, 2019 at 11:28 AM
To: Kevin Becica <Kevin.Becica@camdencounty.com>, "Gonzales, Nenebert" <Nenebert.Gonzales@dot.nj.gov>
Cc: Kathy Cullen <kcullen@coopersferry.com>, Samir Mody <SMody@keller-engineers.com>, Paul Truban <ptruban@keller-engineers.com>
Subject: RE: Haddon Avenue Concept Development - Environmental Screening Report - email 1

Good morning Kevin,
Our BEPR unit completed their review of the Environmental Screening Report for Haddon Avenue and they have no comments.
Thank you,
Lauren

From: Kevin Becica <Kevin.Becica@camdencounty.com>
Sent: Friday, June 14, 2019 8:23 AM
To: Coe, Lauren <Lauren.Coe@dot.nj.gov>; Gonzales, Nenebert <Nenebert.Gonzales@dot.nj.gov>
Cc: kcullen@coopersferry.com; Samir Mody (SMody@keller-engineers.com) <SMody@keller-engineers.com>; Paul Truban <ptruban@keller-engineers.com>
Subject: [EXTERNAL] FW: Haddon Avenue Concept Development - Environmental Screening Report - email 1

Lauren and Bert,

The environmental reports and maps for Haddon Avenue were sent to you on April 16th in 3 emails.
Have you sent to BEPR and heard back from them ?

Thanks, Kevin

Ms. Kevin Becica, PE, PP, CME
County Engineer

Department of Public Works
2311 Egg Harbor Road
Lindenwold, NJ 08021

From: Kathy Cullen <kcullen@coopersferry.com>
Sent: Wednesday, June 12, 2019 10:17 AM
To: Kevin Becica <Kevin.Becica@camdencounty.com>
Cc: Samir Mody <SMody@keller-engineers.com>; Paul Truban <ptruban@keller-engineers.com>
Subject: FW: Haddon Avenue Concept Development - Environmental Screening Report - email 1

Kevin:

Can you please re-send this ESR to Local Aid? We have not heard back from BEPR.

Please include GPI's schedule for completion of the draft CD: July 2019.

Thank you.

From: Kevin Becica <Kevin.Becica@camdencounty.com>
Date: Tuesday, April 16, 2019 at 8:47 AM
To: "Lauren.Coe@dot.nj.gov" <Lauren.Coe@dot.nj.gov>
Cc: "Nenebert.Gonzales@dot.nj.gov" <Nenebert.Gonzales@dot.nj.gov>, Kathy Cullen <kcullen@coopersferry.com>
Subject: FW: Haddon Avenue Concept Development - Environmental Screening Report - email 1

Lauren,
Attached please find the Environmental Screening Report prepared by GPI for the LAIF grant for Haddon Ave CR 561 in Camden City.

Attached are the following for submission to NJDOT-BEPR for review:

1. ESR Document in Word format
2. ESR Screening Form
3. Map of the Potential Affected Area

Another email will follow with additional maps.

It is my error that this email was never sent to you in March, it's pretty sad that I need a vacation to

catch up on unread emails.

Thank you, Kevin

Ms. Kevin Becica, PE, PP, CME

County Engineer

Department of Public Works

2311 Egg Harbor Road, Lindenwold, NJ 08021

Office: (856) 566-2971

Fax: (856) 566-2988

From: Kuhn, Dave [<mailto:dkuhn@gpinet.com>]

Sent: Friday, March 08, 2019 2:30 PM

To: Kevin Becica <Kevin.Becica@camdencounty.com>

Cc: Kathy Cullen <kcullen@coopersferry.com>; Boerchers, Bernard <bboerchers@gpinet.com>;
Steponanko, Julia <jsteponanko@gpinet.com>; Kuhn, Dave <dkuhn@gpinet.com>

Subject: FW: Haddon Avenue Concept Development - Environmental Screening Report

Kevin,

Attached are the following for submission to NJDOT-BEPR for review:

1. ESR Document in Word format
2. ESR Screening Form
3. Map of the Potential Affected Area

Schedule - Our request is for BEPR to provide comments by March 25, 2019 to allow for revisions to complete the CD process in May. If more detail is desired we can provide the full project schedule.

Additional Environmental Constraints Maps will be provided under a separate email to follow.

Dave Kuhn, P.E.

Senior Consultant

100 Corporate Drive, Suite 301, Lebanon, NJ 08833

o +1 (908) 236-9001 | d +1 (908) 287-2730 | c +1 (267) 521-7574

dkuhn@gpinet.com | www.gpinet.com



An Equal Opportunity Employer

This communication and any attachments are intended only for the use of the individual or entity named as the addressee. It may contain information which is privileged and/or confidential under applicable law. If you are not the intended recipient or such recipient's employee or agent, you are

APPENDIX I

PUBLIC OUTREACH PLAN AND OUTREACH SUMMARY



Camden County
Haddon Avenue, Euclid Avenue to Newton Avenue
City of Camden
Local Concept Development Study

PURPOSE***Project History:***

Camden County is advancing the reconstruction of Haddon Avenue, from Euclid Avenue to Newton Avenue as the final segment to complete the revitalization of the “Medical Mile” from Cooper Hospital to Our Lady of Lourdes Medical Center. Completion of this segment will provide the transportation infrastructure to support the redevelopment of Haddon Avenue and provide the backbone for revitalizing the surrounding City neighborhoods, including Parkside and Whitman Park. The goal of the Concept Development Phase is to select a Preliminary Preferred Alternative that can be advanced to Preliminary and Final Design.

PIAP Goals:

“Community ownership” in a proposed project is a critical element to successful delivery. The PIAP goals consist of the following:

- Promoting an on-going public partnership to ensure that the transportation benefits are considered within the context of the communities directly impacted by the project.
- Planning for early, frequent, and continuous consultation with the public by committing to public notification of the affected parties, citizen input in the identification of the solutions, and dedication to make the public’s input meaningful.
- Building public support for the project need and the identification of possible solutions along with the selection of the PPA.
- Identifying, early in the process, any potential “fatal flaws” that would prevent the advancement of the project or its ability to adequately address the identified need(s).

The PIAP document is intended to establish a public involvement process that is dynamic in nature so that it can evolve with the progress of the project, from Concept Development through, to, and including Construction.

COMMUNITY PROFILE / ENVIRONMENTAL JUSTICE

GPI has prepared a Community Profile to identify the surrounding community demographics using the Environmental Justice minority and low-income definitions. This evaluation determined that the population within the study area is predominantly Black and Hispanic as shown in Table 1. In addition, within the project area, 32% of the population is below the poverty level and 26% speak Spanish. Effort should be made to reach out to these communities for input during the scoping process.

Table 1 - Community Profile, Race & Ethnicity

Race/Ethnicity	Camden City	Project Area Block Groups**
Total Population	76,005	12,741
White	5%	3%
Hispanic/Latino (any race)	48%	29%
Black or African American	42%	65%
Asian	3%	1%
American Indian or Alaska Native	0.10%	0%
Other*	1%	1%

Demographic data obtained from U.S. Census Bureau. Percentages may not equal 100% due to rounding.

*Includes individuals who identified themselves as 'Native Hawaiian or Pacific Islander', 'Some Other Race Alone' or 'Two or More Races'. See Community Profile for more information.

** Project area includes 1/4-mile buffer around the Haddon Avenue project limits.

The Community Profile does not make any conclusions about the Environmental Justice/Title VI issues. Rather it serves to alert the project team of the presence of protected populations within the project area. Depending on the alternatives, a more detailed impact analysis will be conducted to evaluate potential Environmental Justice issues.

PIAP IMPLEMENTATION

Although the Haddon Avenue project is currently in Local Concept Development, the PIAP is organized by project phase, so it can be implemented in such a manner that the public views the project as one seamless process. The PIAP is organized by project phase to allow for its integration with the engineering effort to facilitate the schedule of contingent activities. The project phases are as follows:

- Local Concept Development
- Local Preliminary Engineering
- Final Design
- Construction

Local Concept Development: Local Concept Development for this project includes the collection, review, and analysis of background data and existing physical features; the development of alternatives; and the selection of the Preliminary Preferred Alternative (PPA).

The proposed public involvement process during Local Concept Development is outlined as follows:

1. **Identify Project Stakeholders** - Develop and maintain a contact/mailling list of key project stakeholders, including, but not limited to, County and Township officials, property owners, businesses, neighborhood associations, civic and cultural groups, environmental organizations, associations of low income, minority, elderly, and disabled constituents, etc. An initial stakeholders list can be found on the last page of this document. Stakeholders may be added throughout the project process as pertinent individuals/groups become evident.

2. **Initial Meeting with Key Project Stakeholders** - Held an initial meeting with key project stakeholders to introduce the project and gather initial input on September 25, 2018.
3. **Gather Community Input** - Solicit community input on issues of concern in the project area including traffic safety, accessibility to transit, walkability, bikeability, green space, etc. GPI will utilize an on-line survey in English and Spanish to gather feedback from the community. Community leaders will help to disseminate the survey to the community through social media to improve response. GPI will compile the results and share with stakeholders. Input will be used in the development of project alternatives. GPI has also established a project email address, HaddonAveCD@gpinet.com to receive emails from the community throughout the project development process.
4. **Alternatives Development** - Develop visualization techniques, such as display boards, site photographs, and traffic simulations prior to meetings to be utilized, where appropriate, to illustrate various concepts. Prepare handouts/fact sheets for distribution for each meeting summarizing the project status, various alternatives, and eventually the PPA. As part of the development of alternatives, determine if any of the alternatives will have a disproportionately high or adverse effect on low income and/or minority communities and businesses adjacent to the project limits that may be impacted by each alternative and/or during construction. The possibility of adverse effects to low income and/or minority communities will be considered in the selection of the PPA.
5. **Local Officials Briefing** - Camden County and Cooper's Ferry Partnership will meet with Local Officials (City and County) to brief them on the initially preferred alternative. GPI will prepare any materials required for the meeting.
6. **Public Information Center (PIC)** - After briefing local officials, the Project Team will hold a PIC to present the preliminary preferred alternative to the public and gather input. GPI will work with CFP to prepare the mailing list, PIC handout, and presentation material as a means of distributing information to concerned citizens or groups. The mailing list will be comprised of the key project stakeholders, residents within a prescribed distance to the project limits, neighborhood associations, civic and cultural groups, environmental organizations, associations of low income, minority, elderly, and disabled constituents, etc. GPI will prepare presentation materials in English and Spanish. GPI will document comments provided and work with the Project Team and Project Stakeholders to address these comments.
7. **Resolution of Support** - After the PIC and Project Stakeholders' satisfaction that the PPA can move forward, GPI will work with the Project Team to request a Resolution of Support from Camden City for the PPA.
8. If deemed necessary during Concept Development, hold smaller key stakeholder meetings with property owners, businesses, neighborhood associations, civic and cultural groups, environmental organizations, associations of low income, minority, elderly, and disabled constituents, etc., who might be impacted by the project. Minutes of each meeting will be prepared and distributed for comment.

Table 2 – Concept Development Meeting Schedule

Activity	Target Audience	Objective	Tentative Date
Initial Stakeholder Outreach	Key Business and Community Leaders/Organizations	Share project goals and gather background information.	September 25, 2018, Actual
Initial Local Officials Briefing	County and Municipal officials	Present alternatives and obtain support for a Preliminary Preferred Alternative.	February 2019
Public Information Center	Businesses, residents, etc. in close proximity to the project	Present potential impacts and Solicit comments/concerns.	March 2019
Specific Stakeholder Meetings	Businesses, residents, etc. who may be directly impacted by the project	Inform them of potential impacts and Solicit comments/concerns.	As required

Preliminary Engineering and Final Design: Once the project is transferred, the Project Manager will review and revise the PIAP, as necessary. The PPA will be further developed and the contract documents necessary to obtain the required environmental document and permits, as well as to bid the project for construction will be completed during these phases.

Public involvement activities that may be undertaken during Preliminary and Final Design are as follows:

1. Hold a PIC to allow the public to view the PPA in its current status.
2. Utilize various agencies' websites to provide relevant information such as contact information, schedule, proposed lane closures and/or detours, project progress, and to solicit feedback.
3. Reassess the PIAP to ensure the identified strategies still adequately address the public involvement effort for this project.

Construction: The Project Manager will review and revise the PIAP, as necessary. It is important to work closely with local officials and the business community during construction to ensure the least impact on traffic and business is caused by construction.

The following steps in the PIAP will be important during Construction of the project:

1. Conduct pre-construction conferences and/or information centers to ensure maximum support for the construction schedule and minimal disruption to the community.
2. Utilize various agencies' websites to provide relevant information such as contact information, construction schedule, expected delays/lane closures, construction progress, and to solicit feedback. Notifying the public about traffic patterns and potential delays will be important during construction to facilitate the formation of positive public perception towards both the project and the NJDOT.
3. Review feedback provided by the public to determine if improvements can be instituted to construction activities.

PIAP DELIVERABLES

Meeting Minutes: Minutes will be prepared for all public involvement meetings. Minutes will be comprehensive and include an action item list. The minutes will be completed within five (5) business days of the meeting and distributed to all of the attendees.

Project Fact Sheet: A Project Fact Sheet will be prepared and distributed at all meetings with local officials. The Project Fact Sheet will include a brief project history, project issues, project location map, and proposed alternatives. The Project Fact Sheet will be updated as the project progresses to reflect the most up-to-date project information available.

Display Boards: Display boards will be utilized to illustrate existing conditions and the proposed improvements to the local officials, key stakeholders, and the public. Project display boards may include project aerials, a project process display, project deficiency display, alternatives displays, and a PPA display. The display boards will also be converted to .pdf files where possible so that they may be displayed via a projector, when appropriate.

KEY PROJECT STAKEHOLDERS

The following is a list of the key stakeholders identified to date for this project *as of September 2018*:

Camden County

520 Market Street, Camden, NJ 08102

Board of Chosen Freeholders

- Freeholder Director Louis Cappelli, Jr.
- Freeholder Edward T. McDonnell
- Freeholder Susan Shin Angulo
- Freeholder William F. Moen, Jr.
- Freeholder Carmen G. Rodriguez
- Freeholder Jeffrey L. Nash
- Freeholder Jonathan L. Young, Sr.

Department of Public Works

Charles DePalma Complex, 2311 Egg Harbor Road, Lindenwold, NJ 08021

- John Wolick, Director
- Susan Shin Angulo, Freeholder Liaison
- Kevin Becica, County Engineer

City of Camden***Mayor's Office***

- Mayor Francisco "Frank" Moran
520 Market Street, City Hall, 4th Floor
Camden, NJ 08101

City Council

Office of City Council, City Hall, Suite 201, PO Box 95120, Camden, NJ 08101

- Councilmember-At-Large, Curtis Jenkins, President
- Councilmember, Ward 4, Luis A. Lopez, PhD, Vice President
- Councilmember-At-Large, Sheila Davis
- Councilmember-At-Large, Angel Fuentes
- Councilmember, Ward 1, Dana M. Burley
- Councilmember, Ward 2, Brian K. Coleman
- Councilmember, Ward 3, Marilyn Torres

Department of Planning and Development

- Edward C. Williams, PP, AICP, CSI, Director
520 Market Street, City Hall, Suite 224
PO Box 95120
Camden, NJ 08101-5120

Division of Capital Improvements and Project Management

- Uzo Ahirakwe, PE, PP, PLS
City Engineer
520 Market Street, Suite 325
Camden, NJ 08103

Camden Redevelopment Agency***Board of Commissioners***

- Marilyn Torres, Chair
- Vance B. Bowman
- Sheila Davis, Vice Chair
- Ian K. Leonard
- Jose Javier Ramos
- Maria Sharma, Treasurer
- William W. Spearman
- Olivette Simpson, Interim Executive Director and Board Secretary

Pursuant to NJ Local Redevelopment and Housing Law, NJSA 40A: 12A-8 and City of Camden ordinance MC-2322, the CRDA focuses on implementing redevelopment plans and carrying out redevelopment projects.

Parkside Business & Community in Partnership (PBCIP)

1487 Kenwood Avenue
Camden, NJ 18101

Mission is to build a vibrant neighborhood in Parkside by integrating commercial revitalization, housing and quality of life initiatives.

Board Members

- Colandus “Kelly” Francis, Chairperson
- Oscar Spencer, Vice Chairman
- Naomi Scott, Treasurer
- Tasha Gainey-Humphrey, Secretary
- Michael Hammond, Parliamentarian
- Kathryn Gaines-Mathis
- Yaniece Spencer
- Ed Venable
- Phyllis Womack
- Greg Carter, Haddon Avenue Business Association Representative
- Bridget Phifer, Executive Director

Haddon Avenue Business Association (HABA)

Mission is to promote commerce and community along Haddon Avenue.

- Rashaan Hornsby, CEO and President, Hornsby Enterprises

Stakeholders may be added throughout the project process as pertinent individuals/groups become evident.

Haddon Avenue

Euclid Avenue to Newton Avenue

Concept Development Study

Scope of Work

Camden County, Cooper's Ferry Partnership and GPI are undertaking a concept development study for transportation improvements to Haddon Avenue from Euclid Avenue to Newton Avenue. This project is part of a multi-phase plan to upgrade Haddon Avenue. Improvements have been completed at Cooper University Hospital to the northwest and at Our Lady of Lourdes Medical Center to the southeast. This project will be the next phase, completing the stretch of Haddon Avenue between these important medical facilities. Making transportation improvements in this corridor are essential to achieving the long-term vision for a revitalized Haddon Avenue and surrounding neighborhoods.



Key Issues

A number of transportation issues have been identified in this corridor and will need to be reviewed and evaluated during the Concept Development Process. Issues include deteriorated pavement, a significant overrepresentation of pedestrian and bicycle crashes, Americans with Disabilities Act (ADA) deficiencies, and outdated/non-compliant traffic signal equipment.



Like other areas of the City of Camden, the obsolete and deficient water system and combined sanitary/storm sewer systems should be addressed to avoid future openings along any new pavement or impacts to any proposed features.

Goal

The goal of this study is to identify a solution that will improve traffic flow through the neighborhood, enhance pedestrian and bicycle safety, and make Haddon Avenue a “Complete Street” for all users, including the residents and businesses along the corridor.



Photo: Parkside Neighborhood Revitalization Plan

Schedule

Project Kickoff	July 2018
Initial Stakeholder Meeting	September 2018
Complete Alternatives Development	January 2019
Select Preliminary Preferred Alternative	January 2019
Local Officials Briefing	February 2019
Public Information Center.....	March 2019
Complete Concept Development	April 2019

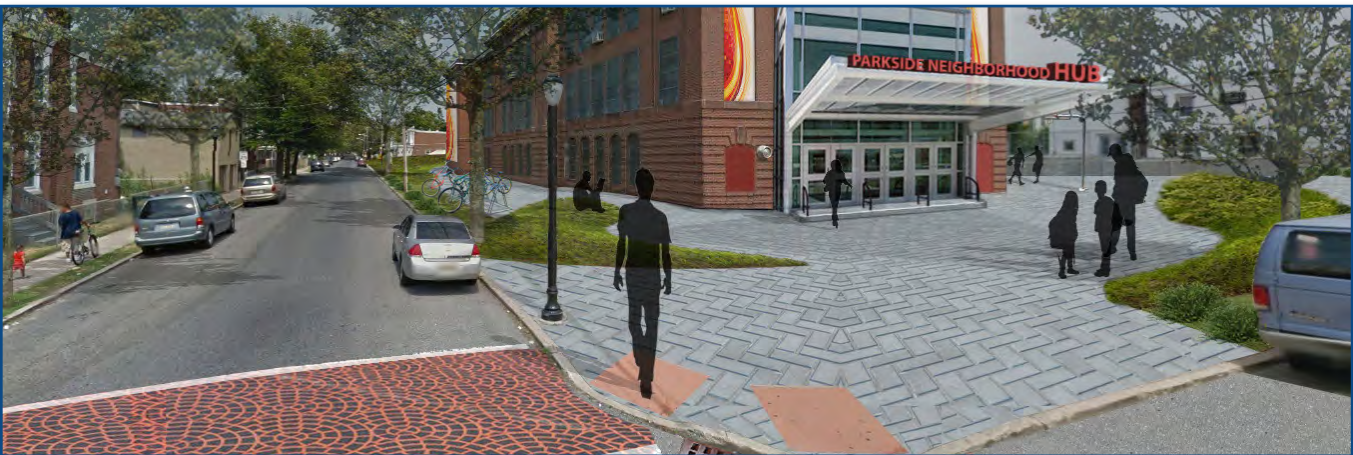


Photo: Parkside Neighborhood Revitalization Plan

Contact

All comments or questions, please contact:
Bernard Boerchers, PE, PTOE
HaddonAveCD@gpinet.com

Concept Development Team



COOPER'S FERRY
PARTNERSHIP
LIVE | WORK | INVEST | CAMDEN

GPI

Avenida Haddon

Avenida Euclid a la Avenida Newton

Estudio de Desarrollo de Conceptos

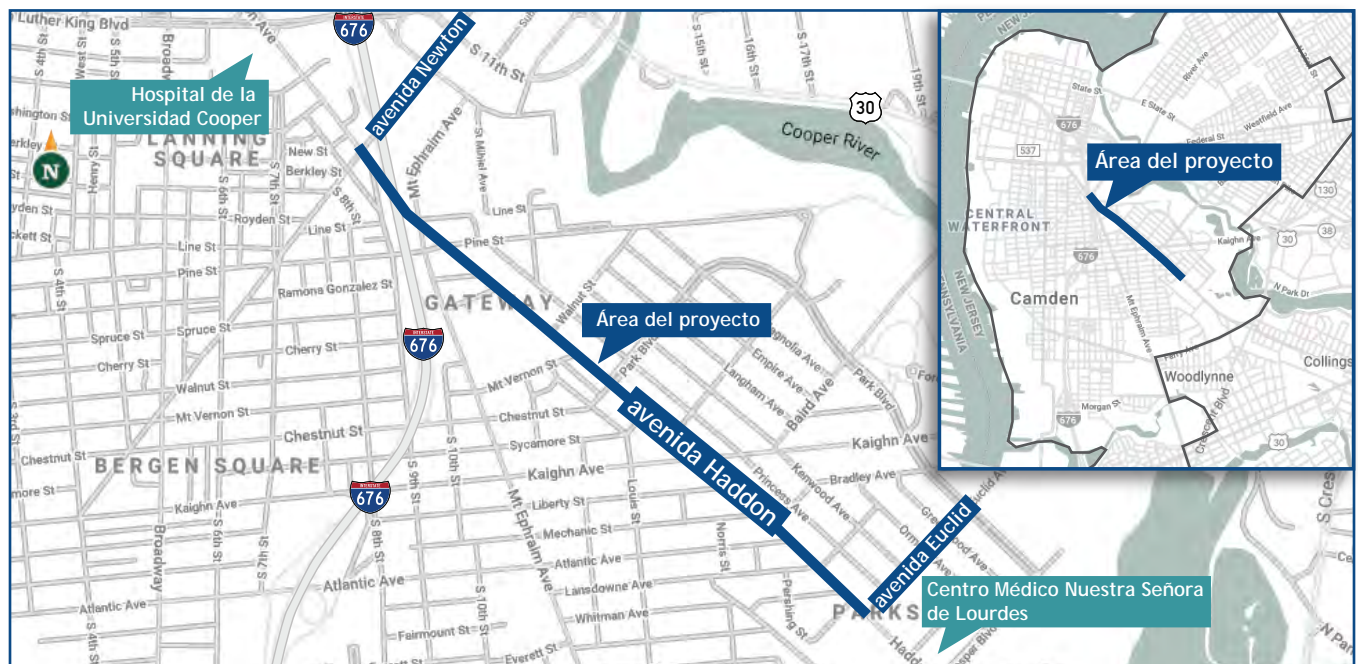
Ámbito de Trabajo

El condado de Camden, Cooper's Ferry Partnership y GPI están realizando un estudio de desarrollo de conceptos para la mejora del transporte en la avenida Haddon, desde la avenida Euclid hasta la avenida Newton. Este proyecto es parte de un plan con múltiples fases para actualizar la avenida Haddon. Las mejoras han concluido en el Hospital de la Universidad Cooper al noroeste y en el Centro Médico Nuestra Señora de Lourdes al sureste. Este proyecto será la siguiente fase que completará la sección de la avenida Haddon entre estas instalaciones médicas tan importantes. Hacer mejoras al transporte en este corredor es vital para realizar la visión a largo plazo de revitalizar la avenida Haddon y los vecindarios circundantes.



Temas Clave

Una serie de problemas de transporte en este corredor fueron identificados y necesitaran revisión y evaluación durante el Proceso de Desarrollo de Conceptos. Los problemas incluyen: pavimento deteriorado, una gran proporción de colisiones de peatones y ciclistas, deficiencias relacionadas a la Ley sobre Estadounidenses con Discapacidades (ADA, por sus siglas en inglés) y equipo de señalización



de tráfico obsoleto y que no cumple con las normas. Como en otras áreas de la ciudad de Camden, el sistema de agua obsoleto y deficiente y los sistemas combinados de alcantarillado sanitario y drenaje pluvial han contribuido a la deterioración del pavimento y deberán abordarse para prevenir aberturas a lo largo del pavimento en el futuro o efectos a cualquiera de los elementos propuestos.

Objetivo

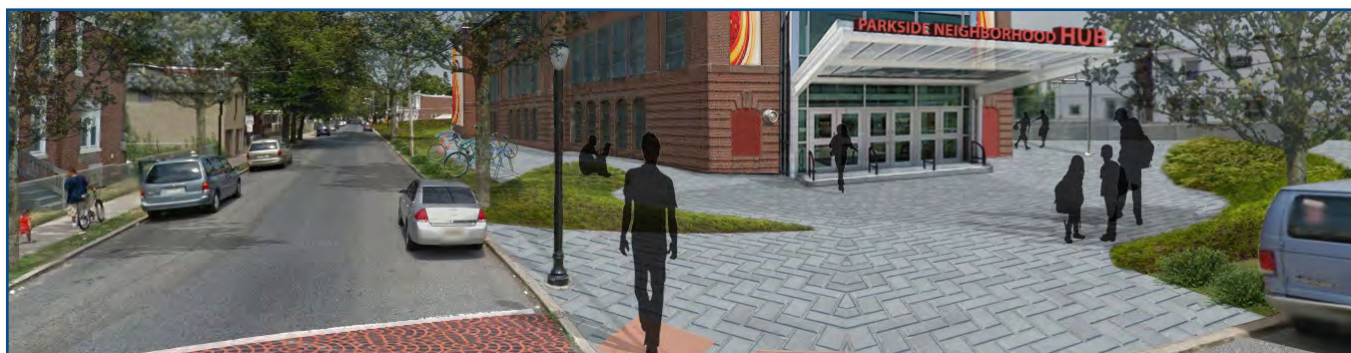
El objetivo de este estudio es identificar una solución que mejore la fluidez del tráfico a través del vecindario, aumente la seguridad peatonal y ciclista y que haga de la avenida Haddon una “Calle Completa” para todos sus usuarios, incluyendo a los residentes y a los comercios a lo largo del corredor.



Fotografía: Plan de Revitalización del Vecindario de Parkside

Calendario

Inicio del proyecto.....	Julio 2018
Reunión inicial de las partes interesadas	Septiembre 2018
Finalizar alternativas de desarrollo	Enero 2019
Seleccionar la alternativa preferida preliminar.....	Enero 2019
Sesión informativa con funcionarios locales.....	Febrero 2019
Centro de información pública.....	Marzo 2019
Finalizar desarrollo de conceptos	Abril 2019



Fotografía: Plan de Revitalización del Vecindario de Parkside

Contacto

Para todo comentario o pregunta,
Sírvese contactar a:
Bernard Boerchers, PE, PTOE
HaddonAveCD@gpinet.com

Equipo de Desarrollo de Conceptos



COOPER'S FERRY
PARTNERSHIP
LIVE | WORK | INVEST | CAMDEN

GPI

Community Stakeholder Survey

Haddon Avenue, Euclid Avenue to Newton Avenue, Concept Development Project September 25, 2018

Name _____ Organization (if any) _____

Address _____

Telephone Number _____ Email Address _____

How would you prefer to be contacted? ☐ Telephone ☐ Email ☐ Mail

How often are you in the project area (Haddon Avenue, Euclid Avenue to Newton Avenue) each month?

- ☐ Every Day (26-30 days)
- ☐ Most Days (11-25 days)
- ☐ Often (5 to 10 days)
- ☐ Seldom (1 to 4 days)
- ☐ Never

How do you get to the project area? (Check all that apply)

- ☐ Drive
- ☐ Bus
- ☐ Walk
- ☐ Bike
- ☐ Other _____

How do you get around the project area? (Check all that apply)

- ☐ Drive
- ☐ Bus
- ☐ Walk
- ☐ Bike
- ☐ Other _____

What is important to you in regard to the project area? (Check all that apply)

- ☐ Beautification
- ☐ Walking/biking
- ☐ Transit
- ☐ Local business
- ☐ Access to social services
- ☐ Traffic congestion
- ☐ Other _____

Do you require special accommodations to attend any future public meetings?

- ☐ No
- ☐ Hearing Assistance
- ☐ Visual Assistance
- ☐ Accessibility to meeting facilities
- ☐ Other _____

Please provide any additional comments: (Use back page if necessary)

Please return completed survey
by October 9, 2018 to:

Email:
HaddonAveCD@gpinet.com

Mail:
Bernard Boerchers
GPI
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Encuesta a las Partes Interesadas de la Comunidad

Proyecto de Desarrollo de Conceptos de la Avenida Haddon, de la Avenida Euclid a la Avenida Newton 25 de septiembre de 2018

Nombre _____ Institución (si la hay) _____

Dirección _____

Número de teléfono _____ Correo Electrónico _____

¿Qué medio de comunicación prefiere? __ Teléfono __ Correo electrónico __ Correo postal

¿Con qué frecuencia visita el área del proyecto (Avenida Haddon, de la Avenida Euclid a la Avenida Newton) cada mes?

- ☐ Todos los días (26-30 días)
- ☐ La mayoría de los días (11-25 días)
- ☐ Con frecuencia (5 a 10 días)
- ☐ Casi nunca (1 a 4 días)
- ☐ Nunca

¿Cómo llega hasta el área del proyecto? (seleccione todas las que aplican)

- ☐ Conduzco
- ☐ En autobús
- ☐ Camino
- ☐ En bicicleta
- ☐ Otro _____

¿Cómo se moviliza dentro del área del proyecto? (seleccione todas las que aplican)

- ☐ Conduzco
- ☐ En autobús
- ☐ Camino
- ☐ En bicicleta
- ☐ Otro _____

¿Qué es importante para usted con relación al área del proyecto? (seleccione todas las que aplican)

- ☐ Embellecimiento
- ☐ Caminar/montar bicicleta
- ☐ Transporte público
- ☐ Comercios locales
- ☐ Acceso a servicios sociales
- ☐ Congestión vehicular
- ☐ Otro _____

¿Requiere apoyo especial para asistir a cualquiera de las futuras reuniones públicas?

- ☐ No
- ☐ Ayuda auditiva
- ☐ Ayuda visual
- ☐ Acceso al local de la reunión
- ☐ Otro _____

Por favor proporcione cualquier comentario adicional: (Si lo necesita, utilice el reverso de esta página)

Favor rellenar completamente la encuesta y devolver antes del 9 de octubre de 2018 a:

Correo electrónico:
HaddonAveCD@gpinet.com

Correo:
Bernard Boerchers
GPI
100 Corporate Drive
Lebanon, NJ 08833

Memorandum of Meeting

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: September 28, 2018

Project: Camden County
Haddon Avenue (CR 561) Concept Development

Project No.: 2018674.00

Subject: Initial Stakeholders Meeting

Attendees:

Name	Agency	Phone	Email
Kevin Becica	County Engineer	856 555-1234	
Kathy Cullen	Cooper's Ferry Partnership	856 757-9154	
Sam Mody	Keller Engineers	856 536-3169	
Bernard Boerchers	Greenman-Pedersen	908 236-9001	
Julia Steponanko	Greenman-Pedersen	908 236-9001	
Dave Kuhn	Greenman-Pedersen	908 236-9001	
Andrew Bush	Cooper Hospital		Bush- andrew@cooperhealth.edu
Sheilah Greene	PBCIP	856 295-2611	sgreene@pbcip.org
Joe Myers	CFP	856 757-9154	myers@coopersferry.com
Wasim Muhammad	Muhammad Temple	856 308-7477	wasimmuhammad@ymail.com
Carol Lynn Day	Lourdes Health System	856 580-6452	cday@lourdesnet.org
Uzo Ahirakwe	Camden City	856 757-7680	
Pedro T. Rivera	Camden City	856 757-7680	
Michael Harper	Camden Fire Dept.	856 757-7520	miharper@ci.camden.nj.us

Bridget Phifer	Exec Director, PBCIP	856 964-0440	bphifer@pbcip.org
Rashaan Hornsby	Haddon Ave. Business Association	856 246-9700	Visionaryent.bh@gmail.com
Jonathan Wetstein	PBCIP & HABA	973 476-6174	johathanwetstein@gmail.com
Chris Gigliotti	CEO, Cornerstone Community Partners	?	

Kathy Cullen welcomed the attendees to the meeting and noted the purpose of the meeting to present the project and begin gathering stakeholder input.

Kevin Becica spoke about the project in context of the various Concept Development projects that are progressing in the City of Camden.

Bernie Boerchers provided an overview of the project, i.e, location, problems identified, as well as the project goals, schedule and survey.

Mr. Boerchers also presented some conceptual cross sections just to give an idea of some of the solution options.

Stakeholders provided the following feedback/questions.

Mr. Harper asked if NJ Transit was on the stakeholders list and GPI confirmed that they are and they are an important stakeholder.

Ms. Phifer requested a presentation of the preferred alternative, when selected, at a PBCIP community meeting.

Mr. Hornsby noted that the survey should be provided to businesses and he would be happy to assist in distribution through social media. He also remarked that survey through on line/social media would be better than paper.

****GPI will develop survey monkey survey in both English and Spanish that can be distributed through social media.**

Mr. Hornsby also noted that elimination of parking in the business area would not be a good solution. More parking is needed.

Mr. Hornsby agreed that increasing sidewalk width is desirable.

Ms. Day noted the concept of bike lanes adjacent to the sidewalk and parking spaces between the bike lane and the travel lane. It was referred to as “floating parking.”

Mr. Hornsby noted that parking is limited roughly between Park Boulevard and Atlantic Avenue. The ends of the corridor are more residential in nature and parking may not be such an issues there.

Mr. Wetstein noted that PBCIP had developed some initial parking concepts that could be shared with GPI.

Mr. Wetstein suggested coordination with Camden Smart.

Mr. Muhammad noted that his school/house of worship is working on off-street daycare parking on Louis Street.

Ms. Becica sought feedback regarding bumpouts at intersections. Stakeholders in attendance supported bumpouts. They noted that it helped provide a sense of place and can help with reducing speeding.

Several stakeholders offered that Haddon Avenue in Collingswood serves as a good example of what might be envisioned for Haddon Avenue in Camden.

Mr. Hornsby asked if this project will consider signing to provide a gateway and otherwise designate the neighborhood. Camden County noted that these will be considered.

Ms. Phifer asked about the intent regarding existing trees. Camden County noted that the study will revisit trees and landscape planting to plant appropriate trees and other vegetation that can be sustained.

Ms. Phifer inquired about the prioritization of funding for this project.

Ms. Becica noted that all of the projects in CD in Camden will have to be evaluated for funding priority by the County and others.

Ms. Phifer also inquired about parking meter upgrades.

Mr. Gillotti asked about funding beyond state and federal funding, such as public private partnerships or other innovative financing.

Ms. Becica also noted the desire to avoid federal funding, which could delay delivery.

Action Items Summary

1. GPI will develop an on line survey that can be distributed via social media easily to get the most feedback.
2. GPI will review the streetscape measures for Haddon Avenue in Collingswood to see how some of these may fit with this project.
3. GPI/CFP will obtain initial parking concepts from Mr. Wetstein/PBCIP.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Haddon Avenue

Euclid Avenue to Newton Avenue

Concept Development Study

Scope of Work

Camden County is undertaking a Concept Development study for transportation improvements to Haddon Avenue between Euclid Avenue and Newton Avenue. This project is part of a multi-phase plan to upgrade Haddon Avenue. Improvements have been completed at Cooper University Hospital to the northwest and at Our Lady of Lourdes Medical Center to the southeast. This project will be the next phase, completing the stretch of Haddon Avenue between these important medical facilities. Transportation improvements in this corridor are essential to achieving the long-term vision for a revitalized Haddon Avenue and surrounding neighborhoods.



Key Issues

A number of transportation issues along this corridor were identified and evaluated during the Concept Development Process. Identified issues include deteriorated pavement, overrepresentation of pedestrian and bicycle crashes, Americans with Disabilities Act (ADA) deficiencies, and outdated/MUTCD non-compliant traffic signal equipment.

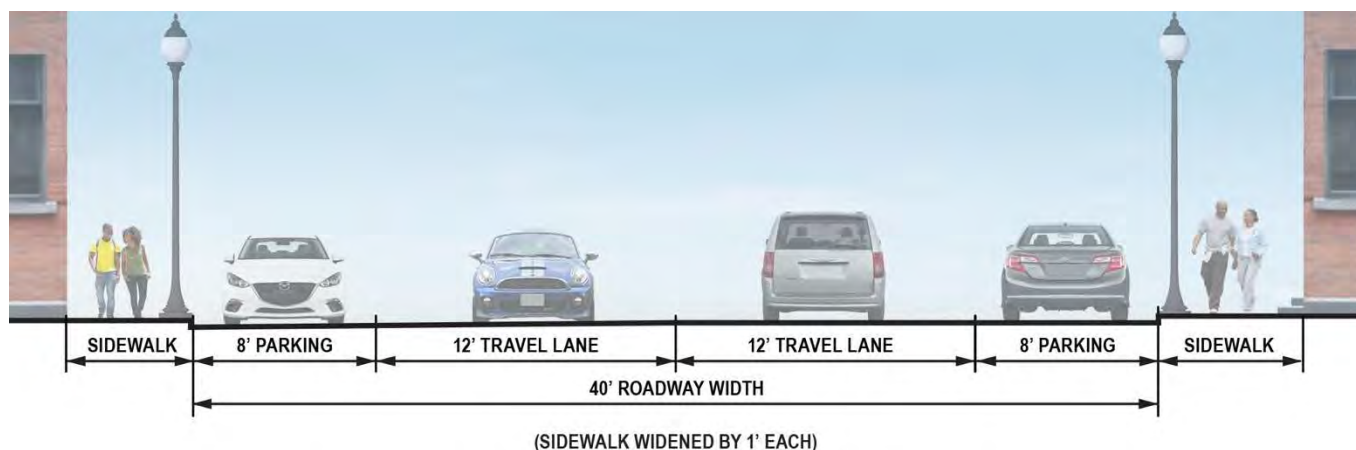
In addition, like other areas within the City of Camden, the obsolete and deficient combined sanitary and storm sewer system will be addressed to avoid future roadway openings along any new pavement or impacts to any proposed features.

Goal

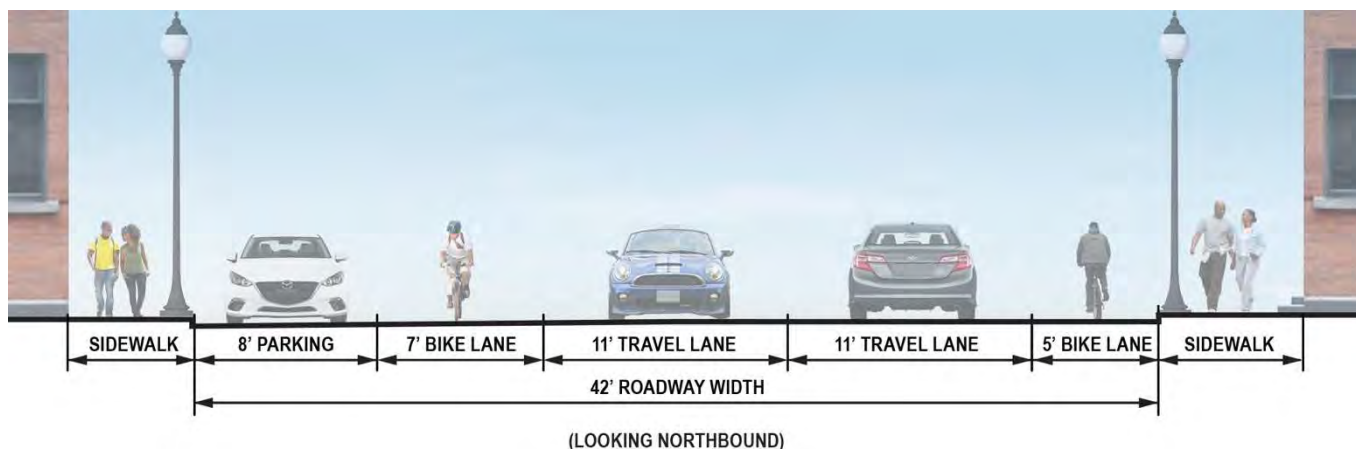
The goal of this study is to identify a solution that will upgrade Haddon Avenue to make it a “Complete Street”, which will safely and efficiently accommodate all users including pedestrians, bicyclists, transit users and motorists.

Alternatives

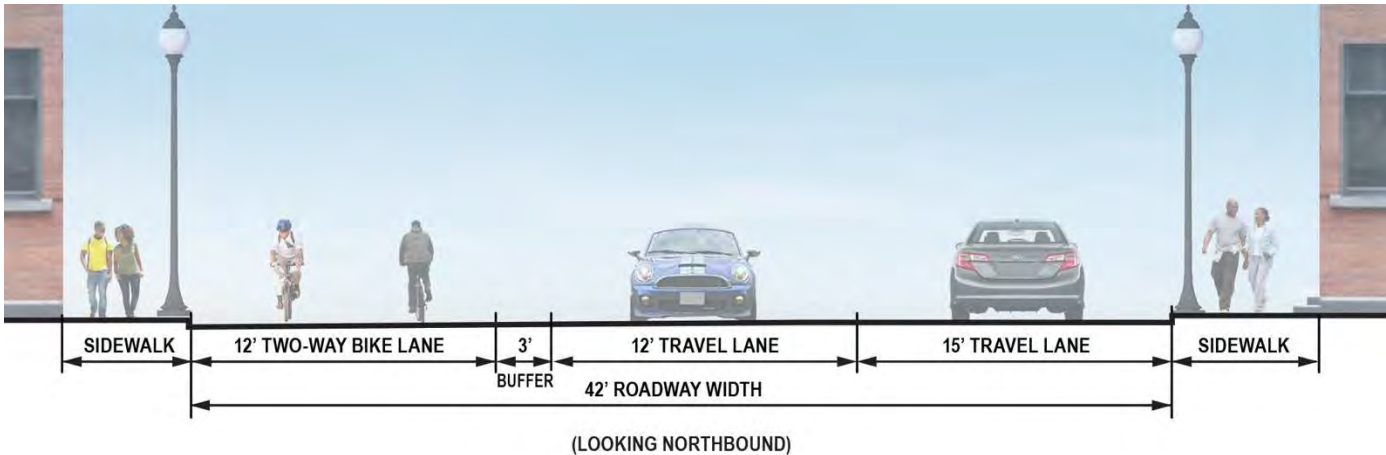
Alternative 1: This alternative proposes a roadway cross section consisting of one 12-foot wide travel lane with adjoining 8-foot wide parking in each direction. The abutting sidewalks will be widened by approximately one foot to enhance pedestrian flow. Other proposed improvements include pavement reconstruction; curb extensions at certain intersections which will increase sight distance of and for pedestrians; and signal improvements to increase signal visibility, improve traffic flow and enhance pedestrian safety. Opportunities will be provided for street trees, decorative lighting, street furniture, enhanced transit access, bus shelters and green stormwater infrastructure (planting areas).



Alternative 2: This alternative proposes a roadway cross section consisting of one 11-foot wide travel lane in each direction, a 5-foot wide bicycle lane in the northbound direction and a 7-foot wide bicycle lane in the southbound direction with adjoining 8-foot wide parking. Parking would be eliminated along the northbound direction. Existing sidewalk widths will be maintained. Other proposed improvements are similar to Alternative 1.



Alternative 3: This alternative proposes a roadway cross section consisting of one 12-foot wide travel lane in the southbound direction and one 15-foot wide travel lane in the northbound direction. A two-way, 12-foot wide bicycle lane will be provided along the southbound curb line with a 3-foot wide buffer between the bicycle lanes and the travel way. Parking will be eliminated along both sides of Haddon Avenue. Existing sidewalk widths will be maintained. Other proposed improvements are similar to Alternative 1.



Based on input received to date Alternative 1 appears to best meet the project goal, but your input on any of the alternatives is requested.

We want to hear from you!

Camden County would like your input through the completion of a brief survey. The survey can be completed in a number of convenient ways.

- Go on line and complete the survey now or anytime using the QR code or at <https://www.surveymonkey.com/r/CV2LDS9>
- Complete and return at the meeting;
- Email a copy of the completed survey to: HaddonAveCD@gpinet.com
- Complete and mail to: Bernard Boerchers, PE, PTOE



GPI, 100 Corporate Drive, Suite 301, Lebanon, NJ 08833

We ask for your survey response by March 21, 2019. Thank you for your interest in this project!

Schedule

Public Information CenterApril 2019
Complete Concept Development.....April 2019

Contact

All comments or questions, please contact:
Bernard Boerchers, PE, PTOE | HaddonAveCD@gpinet.com

Estudio de Desarrollo de Conceptos

Ámbito de Trabajo

El condado de Camden está realizando un estudio de desarrollo de conceptos para la mejora del transporte en la avenida Haddon, entre la avenida Euclid y la avenida Newton. Este proyecto es parte de un plan con múltiples fases para actualizar la avenida Haddon. Las mejoras han concluido en el Hospital de la Universidad Cooper al noroeste y en el Centro Médico Nuestra Señora de Lourdes al sureste. Este proyecto será la siguiente fase que completará la sección de la avenida Haddon entre estas instalaciones médicas tan importantes. Las mejoras al transporte en este corredor son vitales para realizar la visión a largo plazo de revitalizar la avenida Haddon y los vecindarios circundantes.



Temas Clave

Una serie de problemas de transporte en este corredor fueron identificados y evaluados durante el Proceso de Desarrollo de Conceptos. Los problemas incluyen: pavimento deteriorado, una gran proporción de colisiones de peatones y ciclistas, deficiencias relacionadas a la Ley sobre Estadounidenses con Discapacidades (ADA, por sus siglas en inglés) y equipo de señalización de tráfico obsoleto y que no cumple con las normas del Manual sobre Dispositivos Uniformes de Gestión del Tráfico (MUTCD, por sus siglas en inglés).

Además, como en otras áreas dentro de la ciudad de Camden, los sistemas combinados de alcantarillado sanitario y drenaje pluvial obsoletos y deficientes serán tratados para prevenir futuras aberturas a lo largo del nuevo pavimento o efectos en cualquiera de los elementos propuestos.

Objetivo

El objetivo de este estudio es identificar una solución que actualice la avenida Haddon y la convierta en una “Calle Completa” que de manera segura y eficiente satisfaga a todos sus usuarios, incluyendo a los peatones, los ciclistas, los usuarios del transporte público y los conductores.

Alternativas

Alternativa 1: Esta alternativa propone una sección transversal de la carretera que consiste en un carril de circulación vehicular de 12 pies de ancho con estacionamiento adyacente de 8 pies de ancho en cada dirección. Las aceras colindantes serán ampliadas en aproximadamente un pie para mejorar el flujo peatonal. Las otras mejoras propuestas incluyen la reconstrucción del pavimento; extensión de los bordillos en algunas intersecciones, lo cual incrementará la distancia de visibilidad de y para los peatones; y mejoras en la señalización para aumentar la visibilidad de las señales, mejorar el flujo del tráfico y aumentar la seguridad peatonal. Oportunidades de árboles en la calle, luminaria decorativa, mobiliario urbano, mejoras de acceso al transporte público, marquesinas para autobuses e infraestructura verde de drenaje pluvial (áreas de siembra) serán provistas.



Alternativa 2: Esta alternativa propone una sección transversal de la carretera que consiste en un carril de circulación vehicular de 11 pies de ancho en cada dirección, un carril para bicicletas de 5 pies de ancho en la dirección norte y un carril para bicicletas de 7 pies de ancho en la dirección sur con estacionamiento adyacente de 8 pies de ancho. Los estacionamientos en la dirección norte serán eliminados. El ancho actual de las aceras se mantendrá. Las otras mejoras propuestas son similares a la alternativa 1.



Estudio de Desarrollo de Conceptos

Alternativa 3: Esta alternativa propone una sección transversal de la carretera que consiste en un carril de circulación vehicular de 12 pies de ancho en la dirección sur y un carril de circulación vehicular de 15 pies de ancho en la dirección norte. Un carril de bicicletas de doble vía de 12 pies de ancho será provisto a lo largo del bordillo en la dirección sur con un espacio de 3 pies de ancho entre el carril de bicicletas y los carriles de circulación vehicular. Los estacionamientos serán eliminados en ambos lados de la avenida Haddon. El ancho actual de las aceras se mantendrá. Las otras mejoras propuestas son similares a la alternativa 1.



¡Queremos escuchar sus comentarios!

El condado de Camden desea obtener su opinión a través de una encuesta corta. La encuesta se puede completar de diversas maneras convenientes.

Conéctese en línea y rellene la encuesta ahora o en cualquier momento utilizando el código QR o visitando el sitio de internet <https://www.surveymonkey.com/r/QQW3DM9>

- Rellene y devuelva en la reunión;
- Envíe una copia por correo electrónico a: HaddonAveCD@gpinet.com
- Rellene y envíe por correo a: Bernard Boerchers, PE, PTOE

GPI, 100 Corporate Drive, Suite 301, Lebanon, NJ 08833

Solicitamos su respuesta a la encuesta hasta el 21 de marzo de 2019. ¡Gracias por su interés en este proyecto!

Calendario

Centro de Información Pública.....Abril 2019
Finalización de desarrollo de conceptos.....Abril 2019

Contacto

Para todo comentario o pregunta, por favor contactar a:
Bernard Boerchers, PE, PTOE | HaddonAveCD@gpinet.com

Concept Development Team



Memorandum of Meeting

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: February 28, 2018

Project: Camden County
Haddon Avenue (CR 561) Concept Development

Project No.: 2018674.00

Subject: Stakeholders Alternatives Review Meeting, February 27, 2019

Attendees:

Name	Agency	Phone	Email
Kathy Cullen	Cooper's Ferry Partnership	856 757-9154	kcullen@coopersferry.com
Sam Mody	Keller Engineers	856 536-3169	smody@keller-engineers.com
Bernard Boerchers	Greenman-Pedersen	908 236-9001	bboerchers@gpinet.com
Christopher Marra	Greenman-Pedersen	908 236-9001	cmarra@gpinet.com
Dave Kuhn	Greenman-Pedersen	908 236-9001	dkuhn@gpinet.com
Andrew Bush	Cooper Hospital		Bush-andrew@cooperhealth.edu
Bridget Phifer	Executive Director, PBCIP	856 964-0440	bphifer@pbcip.org
Sheilah Greene	PBCIP	856 295-2611	sgreene@pbcip.org
Joe Myers	CFP	856 757-9154	myers@coopersferry.com
Wasim Muhammad	Muhammad Temple	856 308-7477	wasimmuhammad@ymail.com
Matt Slotman	NJ Transit	856-968-3831	mslotman@njtransit.com
John Boyle	Bicycle Coalition of Greater Phila/Circuit Coalition	215-242-9253 Ext 302	john@bicyclecoalition.org

Chris Gigliotti	CEO, Cornerstone Community Partners	215-399-7000	Chris512@msn.com
-----------------	---	--------------	--

A stakeholders meeting was held at the Camden County Historical Society on Park Boulevard, Camden on February 27, 2019. Meeting time was 1:30 PM.

1. Kathy Cullen welcomed attendees and noted that the purpose of the meeting was to inform stakeholders of the alternatives developed to-date and gather feedback.

Kathy referenced the initial stakeholder meeting that introduced the study and sought initial feedback on the desires of the community.

Kathy noted that with feedback from today's meeting, the project team will prepare for the presentation of alternatives at a public meeting early in April.

2. Bernie Boerchers reviewed the agenda for the meeting and then addressed the following:
 - Review of the study location
 - Review of the study goals
 - Review of the key issues
 - Infrastructure Condition, Overgrown Trees, Lighting, Underground Infrastructure, etc.
 - Pedestrian, Bicycle and Vehicular Safety
 - Review of the Environmental Screening
3. Dave Kuhn provided an overview of the efforts to obtain community feedback and summarized the results of the survey.
4. Bernie Boerchers provided a detailed review of the three alternatives, highlighting the differences between each.

Bernie also noted that initial comments received on the alternatives through the on-line survey included a suggestion to narrow travel lanes to 11', narrow the bike lane, and provide parking on one side only.

Bernie also provided an overview of a concept for intersection layout indicating curb extensions, crosswalks, and green stormwater infrastructure opportunities.

5. Dave Kuhn described the survey that is available to gather feedback on the alternatives.
6. Bernie Boerchers noted that a comment in the survey on the alternatives suggested a crosswalk at Liberty Street. Bernie noted that this may be possible, but could impact parking spaces on Haddon Avenue. It can be looked at in the next phase.
7. Joe Myers asked if the intersections accommodate for turning of fire trucks.

Bernie Boerchers noted that GPI was furnished with turning templates for the City of Camden's fire trucks and all trucks could be accommodated under each of the alternatives.

8. Bridget Phifer asked what trees would be used given that there seems to be an overabundance of trees on Haddon Avenue and that they are overgrown.

Bernie Boerchers indicated that tree selection will be determined in the next phase of the project.

9. Bridget Phifer asked if signage is being considered in this project, such as gateway signage.

Bernie Boerchers noted that this can be considered and would be determined in the next phase.

10. Sheila Greene asked who would maintain the trees.

Bernie Boerchers noted that a maintenance agreement would need to be executed between the City, County and other parties that would identify responsibilities for maintenance.

11. Sheila Greene noted that curb extensions (bump-outs) can be a problem. She has run into the curb extension at Haddon Avenue and Vesper Boulevard.

Chris Marra noted that the curb extension can be designed to create a better contrast between the curb and pavement so motorists are less likely to strike it.

Bernie Boerchers noted that often curb extensions are too wide, making them difficult to avoid.

12. Sheila Greene noted that the removal of parking on either side of Haddon Avenue will be an issue with residents. There was general concurrence from the stakeholders in the room.

13. Jack O'Byrne noted that there is a logical bicycle route that will bypass Haddon Avenue.

14. John Boyle of the Bicycle Coalition noted that a major objective of the project should be traffic calming with 11' travel lanes to slow traffic. He referenced recent fatality on Princess Street.

15. Mr. Boyle also noted that a natural bicycle route exists. From Ferry Avenue, travel up Haddon Avenue, turn right on Euclid Avenue, turn left on Park Avenue, right on Magnolia and then turn left on Pine Street.

16. Mr. Boyle indicated that bus shelters/bus stops should be upgraded.

17. Sheila Greene noted that most residents of Parkside either walk or drive on Haddon Avenue. Bicycle accommodations are more important for persons that work at the hospitals.

18. Wasim Muhammad noted that loss of parking would be devastating to the community.

19. Sheila Greene noted that widening sidewalks would not necessarily be a good thing.

Bridget Phifer noted that in order to comply with the Americans with Disabilities Act, widening of sidewalks could help.

Andrew Bush noted that lighting is important on sidewalks. At Cooper Plaza, lighting helped reduce crime.

20. Andrew Bush referred to hatching of no-parking areas on plans. He stated that people will still park in an area that is cross-hatched. Bringing the curb out is the only way to prevent parking.

Chris Marra noted that areas shown on the plans as “hatched” may not actually be hatched when constructed.

Bernie Boerchers noted that some spots will be lost in the reconstruction of Haddon Avenue in order to comply with traffic laws that relate to pedestrian safety.

21. Wasim Muhammad indicated that additional off-street parking should be sought.

Andrew Bush indicated that an interior lot should be investigated to provide business district parking.

Joe Myers noted Federal Street as an example.

Chris Gigliotti suggested that his group collaborate with GPI.

Kathy Cullen indicated she would note these suggestions for further consideration, but off-street parking is not part of the scope of this study.

Sheila Greene noted that there is one lot at Wildwood Avenue and Haddon Avenue.

Sheila Green also noted that there is also open space at Kaighn Avenue and Haddon Avenue.

Kathy Cullen indicated that off-street parking would have to be looked at separately from this project.

Sheila Greene asked what Collingswood did. It seems to be working there.

22. Jack O’Byrne noted that Green Stormwater Infrastructure is a great idea, but it collects a lot of garbage if there is no one to maintain. It is in place at the library.

Kathy Cullen noted that a long-term commitment needs to be in place.

John Boyle indicated that a new NJDOT Complete and Green Streets Guide is out soon and provides guidance on this.

23. Bridget Phifer indicated that loitering on Haddon Avenue is a concern. Benches could encourage loitering.

Sheila Greene noted that outsiders are coming into Parkside to sleep. Bus shelters are fine, but other benches should be discouraged.

Wasim Muhammad concurred.

24. Matt Slotman noted that bus stops could conflict with a potential bike lane.
25. John Boyle indicated that bike sharrows should not be included in the design as it is not a designated bike route.
26. Jack O'Byrne noted that the preferred bike route would be Haddon to Vesper to Park to Pine
27. Bernie Boerchers summarized the consensus of the stakeholders.
- Parking to be maintained on both sides. (Alternative 1)
 - Lane widths to be 12' or 11' after consultation with the County. A limitation on the total paved width may impact these decisions.
 - Sidewalks may be widened by approximately 1'.
 - Signals will be upgraded.
 - Pavers will be included where it makes sense.
 - Benches are not desired as general street furniture.
 - Bus shelters will need to be in place where a minimum sidewalk width is met.
28. Kathy Cullen encouraged responses to the survey and will distribute the link to improve responses.
29. Kathy Cullen will schedule the public information meeting in April.
30. Matt Slotman asked if GPI knew where the bus stops are currently located.

Bernie Boerchers and Chris Marra indicated that GPI is aware of the locations.

Action Items Summary

1. GPI will confer with Camden County on lane widths.
2. Cooper's Ferry will schedule the Public Information Location and Time, and coordinate outreach to residents and community members.
3. GPI will identify property owners within 250' of the project limits for proper notification of the meeting.
4. GPI will assist Cooper's Ferry with notification as required.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

We Want Your Input!

Tuesday, April 2, 2019, 4:30 PM to 7:00 PM

Camden County Historical Society

1900 Park Boulevard, Camden, NJ

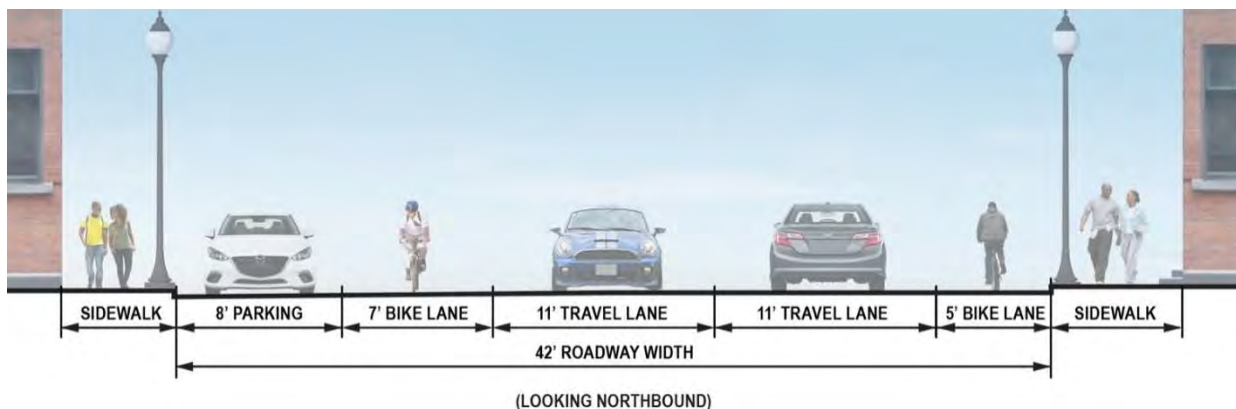
Attend a Public Open House Meeting about Haddon Avenue

Goal

The goal of this Camden County study is to develop a solution that will upgrade Haddon Avenue from Euclid Avenue to Newton Avenue, to safely and efficiently accommodate pedestrians, bicyclists, transit users and motorists. A solution will be developed with input from the residents and businesses of the neighboring communities.

Alternative

One Side Parking / Bicycle Lanes: This alternative proposes a roadway cross section consisting of one 11-foot wide travel lane in each direction, a 5-foot wide bicycle lane in the northbound direction and a 7-foot wide bicycle lane in the southbound direction with adjoining 8-foot wide parking. Parking would be eliminated along the northbound direction. Existing sidewalk widths will be maintained.



We want to hear from you!

Camden County would like your input through the completion of a brief survey. The survey can be completed in a number of convenient ways.

- Go on line and complete the survey now or anytime using the QR code or at <https://www.surveymonkey.com/r/CV2LDS9> (English)
<https://www.surveymonkey.com/r/QQW3DM9> (Español)
- Complete and return at the meeting;
- Email a copy of the completed survey to: HaddonAveCD@gpinet.com
- Complete and mail to: Bernard Boerchers, PE, PTOE
GPI, 100 Corporate Drive, Suite 301, Lebanon, NJ 08833



We ask for your survey response by April 16, 2019. Thank you for your interest in this project!

Schedule

Public Information CenterApril 2, 2019
Complete Concept Development.....May 2019

Contact

All comments or questions, please contact:
Bernard Boerchers, PE, PTOE | HaddonAveCD@gpinet.com

Concept Development Team



COOPER'S FERRY
PARTNERSHIP
LIVE | WORK | INVEST | CAMDEN



¡Queremos conocer su opinión!

Martes 2 de abril de 2019, 4:30 PM a 7:00 PM
Sociedad Histórica del Condado de Camden
1900 Bulevar Park, Camden, NJ

Asista a la reunión acerca de la avenida Haddon abierta al público

Objetivo

El objetivo de este estudio del Condado de Camden es desarrollar una solución que actualice la avenida Haddon desde la avenida Euclid a la avenida Newton, la cual de manera segura y eficiente incorpore a los peatones, los ciclistas, los usuarios del transporte público y los conductores. Una solución será desarrollada con la ayuda de los residentes y negocios de las comunidades vecinas.

Alternativa

Estacionamiento a un lado / Carriles para bicicletas: Esta alternativa propone una sección transversal de la carretera que consiste en un carril de circulación vehicular de 11 pies de ancho en cada dirección, un carril para bicicletas de 5 pies de ancho en la dirección norte y un carril para bicicletas de 7 pies de ancho en la dirección sur con estacionamiento adyacente de 8 pies de ancho. Los estacionamientos en la dirección norte serán eliminados. El ancho actual de las aceras se mantendrá.



¡Queremos escuchar sus comentarios!

El condado de Camden desea obtener su opinión a través de una encuesta corta. La encuesta se puede completar de diversas maneras convenientes.

- Conéctese en línea y rellene la encuesta ahora o en cualquier momento utilizando el código QR o visitando los sitios de internet <https://www.surveymonkey.com/r/QQW3DM9>
- Rellene y devuelva en la reunión;
- Rellene y envíe una copia por correo electrónico a: HaddonAveCD@gpinet.com
- Rellene y envíe por correo a: Bernard Boerchers, PE, PTOE
GPI, 100 Corporate Drive, Suite 301, Lebanon, NJ 08833



Solicitamos su respuesta a la encuesta hasta el 16 de abril de 2019. ¡Gracias por su interés en este proyecto!

Calendario

Centro de Información Pública.....2 de Abril de 2019
Finalización de desarrollo de conceptos.....Mayo 2019

Contacto

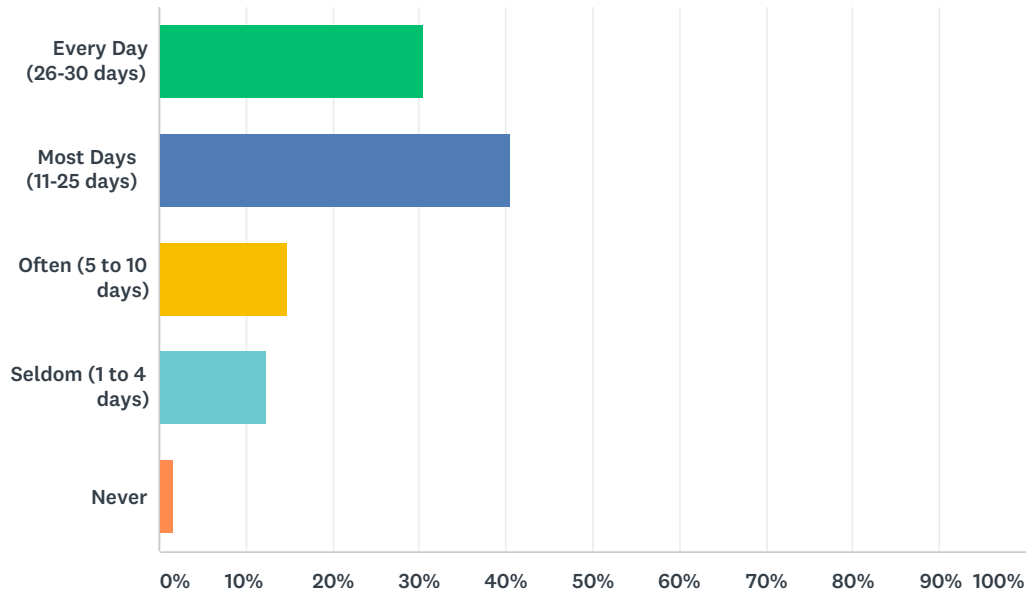
Para todo comentario o pregunta, por favor contactar a:
Bernard Boerchers, PE, PTOE | HaddonAveCD@gpinet.com

Equipo de Desarrollo de Conceptos



Q1 How often are you in the project area (Haddon Avenue, Euclid Avenue to Newton Avenue) each month?

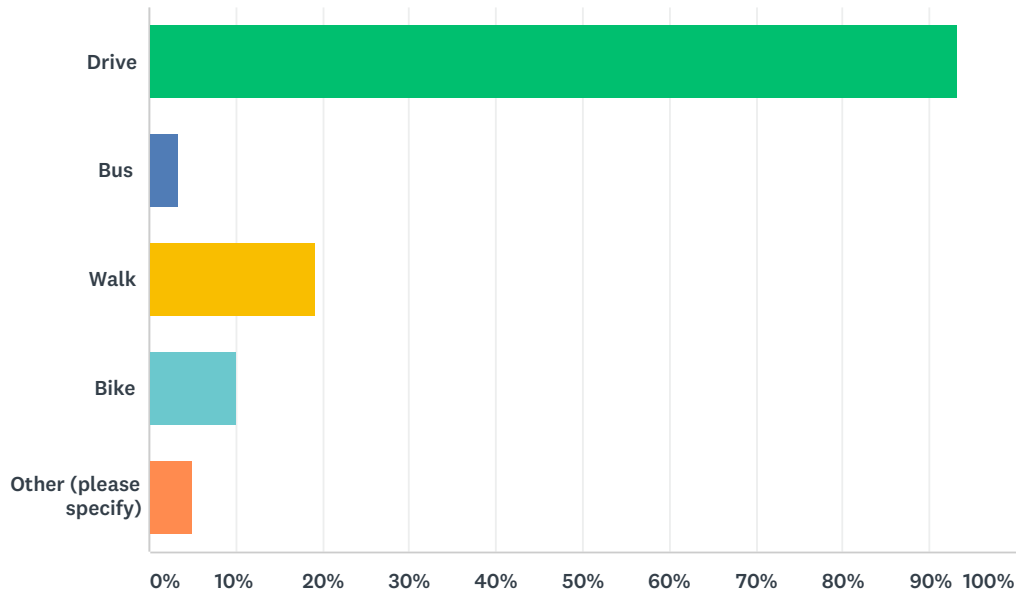
Answered: 121 Skipped: 0



ANSWER CHOICES	RESPONSES	
Every Day (26-30 days)	30.58%	37
Most Days (11-25 days)	40.50%	49
Often (5 to 10 days)	14.88%	18
Seldom (1 to 4 days)	12.40%	15
Never	1.65%	2
TOTAL		121

Q2 How do you get to the project area? (Check all that apply)

Answered: 120 Skipped: 1

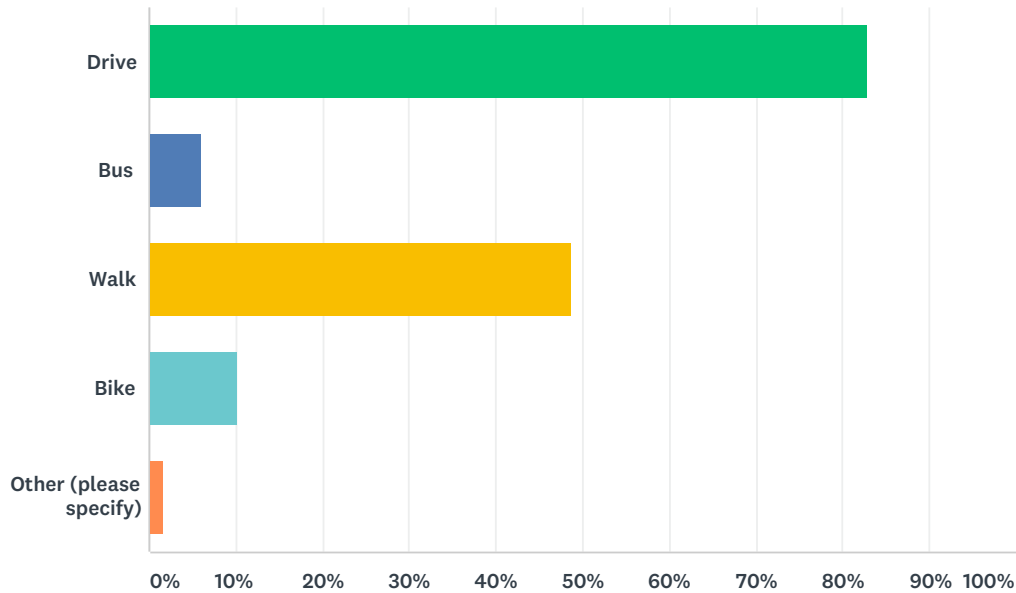


ANSWER CHOICES	RESPONSES	
Drive	93.33%	112
Bus	3.33%	4
Walk	19.17%	23
Bike	10.00%	12
Other (please specify)	5.00%	6
Total Respondents: 120		

#	OTHER (PLEASE SPECIFY)	DATE
1	PATCO	11/16/2018 10:11 AM
2	train station most days	11/12/2018 12:31 PM
3	n/a	11/9/2018 7:57 AM
4	Motorcycle	10/24/2018 11:13 AM
5	Train and Bike	10/24/2018 9:25 AM
6	Sometimes Patco	10/18/2018 2:16 PM

Q3 How do you get around the project area? (Check all that apply)

Answered: 117 Skipped: 4

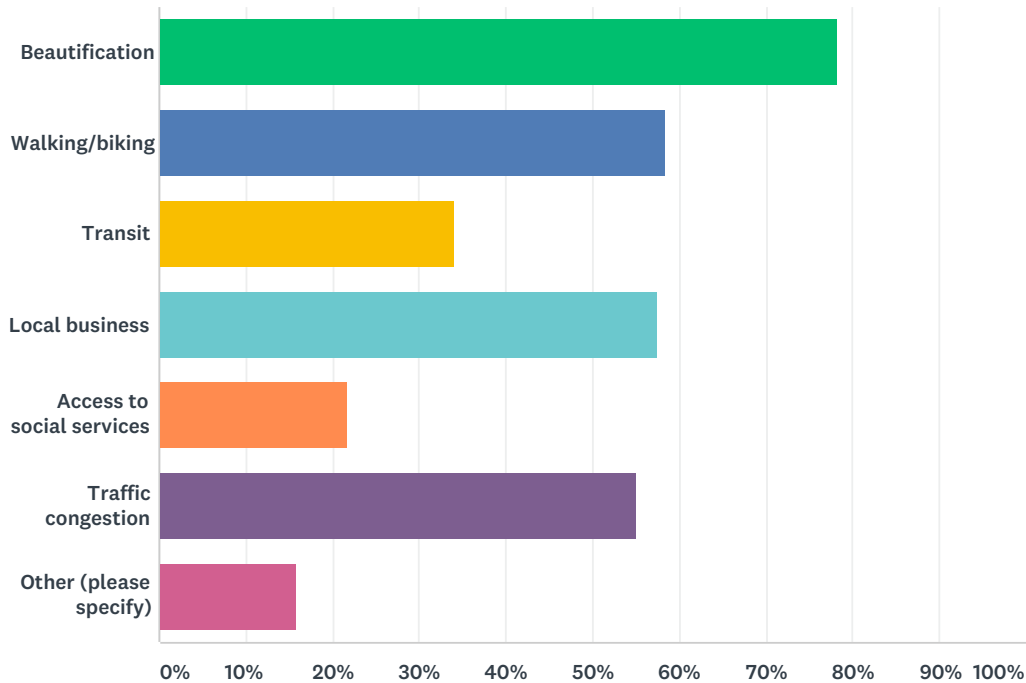


ANSWER CHOICES	RESPONSES	
Drive	82.91%	97
Bus	5.98%	7
Walk	48.72%	57
Bike	10.26%	12
Other (please specify)	1.71%	2
Total Respondents: 117		

#	OTHER (PLEASE SPECIFY)	DATE
1	Lourdes Health Shuttle	12/4/2018 10:05 AM
2	Motorcycle	10/24/2018 11:13 AM

Q4 What is important to you in regard to the project area? (Check all that apply)

Answered: 120 Skipped: 1



ANSWER CHOICES	RESPONSES	
Beautification	78.33%	94
Walking/biking	58.33%	70
Transit	34.17%	41
Local business	57.50%	69
Access to social services	21.67%	26
Traffic congestion	55.00%	66
Other (please specify)	15.83%	19
Total Respondents: 120		

#	OTHER (PLEASE SPECIFY)	DATE
1	Safety	11/19/2018 10:41 AM
2	safety	11/16/2018 3:45 PM
3	Emphasis on Biking	11/16/2018 10:11 AM
4	Safety! Especially in work parking lot because a lot of random people walk thru the parking lots that are not employees.	11/13/2018 2:40 PM
5	safety, well lit areas, trash cans	11/12/2018 4:56 PM
6	Food/Restaurants	11/12/2018 10:49 AM
7	safety	11/11/2018 1:38 AM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

8	Safety	11/9/2018 10:13 AM
9	safety	11/9/2018 9:47 AM
10	road quality	11/9/2018 9:16 AM
11	Safety	11/9/2018 9:14 AM
12	safety	11/9/2018 9:06 AM
13	Public safety	11/9/2018 8:36 AM
14	Fix the roads!	11/9/2018 8:36 AM
15	safety	11/9/2018 8:17 AM
16	safety	11/9/2018 12:32 AM
17	Cleanliness	11/8/2018 1:07 PM
18	safety	10/26/2018 3:03 PM
19	Supporting new community operated business	10/24/2018 11:13 AM

Q5 Please provide any additional comments related to the project.

Answered: 34 Skipped: 87

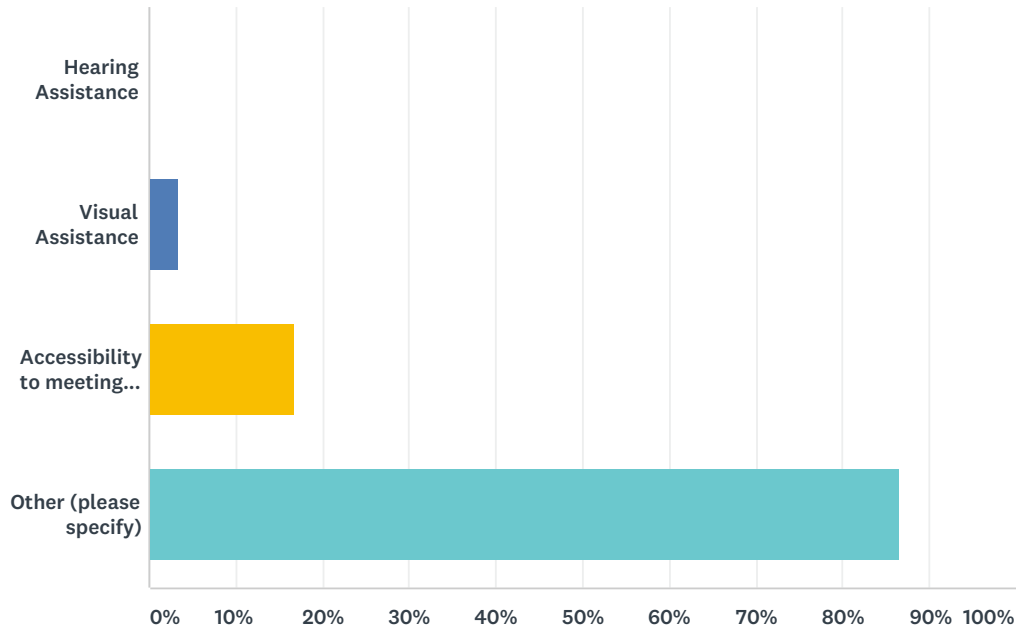
#	RESPONSES	DATE
1	There are several difficulties for the residents and people that drive around the area from Euclid Avenue to Newton Avenue. First, the shortage of supermarkets with diverse, nutritious and cheap food makes this area a nutritional desert. The lack of maintenance to signs, pavement striping and direction arrows makes this area susceptible to accidents to the point that I'm witness to at least one accident a week. Another thing related to the transportation flow in the area is that there are no bicycle lanes to make easier for cyclists or appropriate areas for pedestrians to cross the street. Lastly, one of the most confusing and greatest problems from Euclid Avenue to Newton Avenue is to cross under Interstate 676, between Mt. Ephraim Avenue and S 9th Street. Each direction of Haddon Avenue divides into two as it crosses under the train tracks because of the pier supports. Better lane striping between Mt. Ephraim Avenue and 9th South Street is needed to alert drivers of the change, better lighting during night time and bicycle lanes for cyclist to move in the area. In summary, better striping and lanes for vehicular, cyclist and pedestrian traffic and social facilities for the public are needed between Euclid Avenue to Newton Avenue.	2/15/2019 1:52 PM
2	Please make crossing areas at Lourdes as user friendly as Cooper. Lourdes remains DANGEROUS.	12/6/2018 9:46 AM
3	The new lights by charter school and the one way traffic on Venner St increase the time exponentially to get to and from work/car on the shuttle. The light at White Horse Pike and Ferry ave is TOO SHORT to handle the traffic coming from Haddon ave! This is the worst area. The school drop off/pick up could have also been planned better. Haddon Ave looks BEAUTIFUL now, but the traffic planning is terrible.	12/4/2018 10:05 AM
4	improvement would be welcome, as to the current changes along haddon ave upkeep is essential. please don't just improve and not maintain	11/13/2018 9:51 AM
5	long overdue	11/12/2018 2:18 AM
6	None	11/11/2018 6:41 PM
7	Enhancement of this area further shows the commitment that the City Camden has to this area. This area is a high traffic area that is need of such improvements as many services are offered to the community as a whole in this area.	11/10/2018 12:44 PM
8	Poor design in school bus dropoff/pickup with new school. Busses are often blocking OLOL parking lot exit. Dangerous for both drivers and students.	11/10/2018 10:23 AM
9	safety is also a concern	11/9/2018 7:19 PM
10	.	11/9/2018 10:59 AM
11	na	11/9/2018 10:20 AM
12	Well lit, looks great	11/9/2018 10:13 AM
13	Na	11/9/2018 9:17 AM
14	The county has spent a lot of time and money on projects, such as the Grove street project, which were to calm traffic, and beautify, and in fact have had to be redone. Moving on street parking to nearby lots would decrease congestion in this target area, and make walking for pedestrians safer. Frequently pedestrians are attempting to cross between parked cars (that's where cross walks are in Collingswood), many drivers are not paying attention to this.	11/9/2018 9:03 AM
15	NA	11/9/2018 9:01 AM
16	It would be nice for this area to look more appealing.	11/9/2018 8:51 AM
17	n/a	11/9/2018 8:36 AM
18	This project really really needs to be done	11/9/2018 8:33 AM
19	n/a	11/9/2018 8:17 AM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

20	abandoned houses need to be fixed	11/9/2018 8:05 AM
21	n/a	11/9/2018 6:55 AM
22	na	11/9/2018 12:32 AM
23	Na	11/8/2018 10:21 PM
24	n/a	11/8/2018 9:48 PM
25	There needs to be upkeep of the traffic lights. Euclid Ave lights are out half the time and this is dangerous	11/8/2018 8:34 PM
26	I would like to be informed on a regular basis as to what is going on with the Haddon project.	11/8/2018 1:16 PM
27	Overall, I want to recognize the beautification efforts in the project area. Park Blvd looks better than it has been in years. Overall, the city is working to make improvements, but I feel it is due to the effort of PBCIP to keep on top of the neighborhood needs.	11/8/2018 1:12 PM
28	Safety, lighting and parking for employees in the area is my number one concern.	10/26/2018 3:03 PM
29	N/A	10/26/2018 2:10 PM
30	More business should be on Haddon avenue.	10/25/2018 11:40 AM
31	Studies show that when it is easier to walk and bike around a place, not only is it safer for everyone, but it increases small business revenue.	10/25/2018 10:31 AM
32	Care must be given for the safe movement of fire apparatus and buses (commercial and school) while still allowing traffic flow.	10/19/2018 7:28 AM
33	A Mid Block Crossing where Liberty Street meets Haddon Avenue for pedestrians is needed!	10/18/2018 2:16 PM
34	N/A	10/18/2018 1:16 PM

Q6 Do you require any special accommodations to attend any future public meetings?

Answered: 30 Skipped: 91



ANSWER CHOICES	RESPONSES	
Hearing Assistance	0.00%	0
Visual Assistance	3.33%	1
Accessibility to meeting facilities	16.67%	5
Other (please specify)	86.67%	26
Total Respondents: 30		

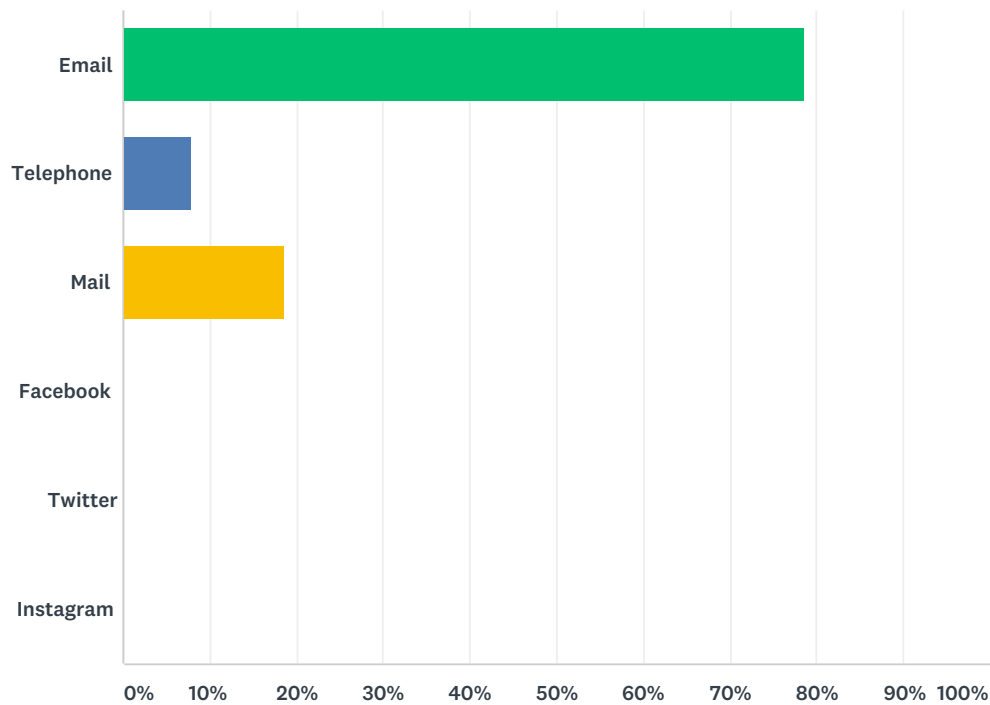
#	OTHER (PLEASE SPECIFY)	DATE
1	No	11/23/2018 5:47 AM
2	no	11/20/2018 10:23 AM
3	n/a	11/11/2018 8:20 PM
4	None	11/11/2018 6:41 PM
5	N/A	11/9/2018 7:19 PM
6	no	11/9/2018 10:59 AM
7	na	11/9/2018 10:20 AM
8	no	11/9/2018 10:13 AM
9	No	11/9/2018 9:17 AM
10	NA	11/9/2018 9:12 AM
11	None	11/9/2018 9:03 AM
12	NA	11/9/2018 9:01 AM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

13	n/a	11/9/2018 8:36 AM
14	None	11/9/2018 8:33 AM
15	no	11/9/2018 6:50 AM
16	no	11/9/2018 12:32 AM
17	n/a	11/8/2018 9:48 PM
18	Comment unreadable	11/8/2018 1:22 PM
19	Stairs	11/8/2018 1:12 PM
20	none	10/26/2018 3:03 PM
21	N/A	10/26/2018 2:10 PM
22	Notification	10/25/2018 11:40 AM
23	none	10/24/2018 3:14 PM
24	none	10/24/2018 10:09 AM
25	No	10/24/2018 8:30 AM
26	NO	10/18/2018 1:16 PM

Q7 How would you prefer to be contacted?

Answered: 75 Skipped: 46



ANSWER CHOICES	RESPONSES	
Email	78.67%	59
Telephone	8.00%	6
Mail	18.67%	14
Facebook	0.00%	0
Twitter	0.00%	0
Instagram	0.00%	0
Total Respondents: 75		

Q8 Please provide your name. (Optional)

Answered: 47 Skipped: 74

#	RESPONSES	DATE
1	Jose Fernandez	2/15/2019 1:52 PM
2	Michael D'Italia	11/16/2018 10:11 AM
3	Jennifer Whaley	11/15/2018 12:31 PM
4	Alice Jurski	11/13/2018 2:40 PM
5	elena chappell	11/13/2018 9:51 AM
6	Cynthia Schumacher	11/12/2018 4:56 PM
7	Joyce Matola	11/12/2018 1:01 PM
8	Connie Dougherty	11/12/2018 12:31 PM
9	bshannonrn@verizon.net	11/11/2018 8:20 PM
10	None	11/11/2018 6:41 PM
11	Joan Brumett	11/10/2018 9:20 PM
12	kim	11/9/2018 11:11 AM
13	Alan Pope	11/9/2018 10:31 AM
14	Jessica	11/9/2018 10:13 AM
15	Na	11/9/2018 9:17 AM
16	Jen Garron	11/9/2018 9:12 AM
17	Maraget Goodfellow	11/9/2018 9:03 AM
18	n/a	11/9/2018 8:36 AM
19	Michelle	11/9/2018 8:33 AM
20	Beauttelle Ways	11/9/2018 7:45 AM
21	Carol Lynn Daly	11/8/2018 8:34 PM
22	Terrence Frazier	11/8/2018 1:31 PM
23	Michelle Adams	11/8/2018 1:30 PM
24	Sabria Wynn	11/8/2018 1:28 PM
25	Trisha Humphrey	11/8/2018 1:27 PM
26	Mia Anderson-Coles	11/8/2018 1:25 PM
27	Patricia Rodgers	11/8/2018 1:24 PM
28	David Still	11/8/2018 1:22 PM
29	Sheilah Greene	11/8/2018 1:20 PM
30	Rashaan Hornsby	11/8/2018 1:19 PM
31	Kathy Mathis	11/8/2018 1:16 PM
32	William Spearman	11/8/2018 1:13 PM
33	L'Tanya Brooks	11/8/2018 1:12 PM
34	Frank Inby	11/8/2018 1:09 PM
35	Gloria Smith	11/8/2018 1:07 PM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

36	Elaine Williams-Fussell	11/8/2018 1:06 PM
37	Cynthia Alford	11/8/2018 1:04 PM
38	S. Ward	11/8/2018 1:03 PM
39	segarrae@lourdesnet.org	10/26/2018 3:03 PM
40	Tiana	10/25/2018 11:40 AM
41	Jordan Mead	10/25/2018 10:31 AM
42	Ben saracco	10/24/2018 11:13 AM
43	John Boyle	10/24/2018 9:25 AM
44	Tawanda Jones	10/24/2018 8:30 AM
45	Fire Chief Michael Harper	10/19/2018 7:28 AM
46	Jonathan	10/18/2018 2:16 PM
47	Deb Bokas	10/18/2018 9:38 AM

Q9 Please provide your organization (if any).

Answered: 54 Skipped: 67

#	RESPONSES	DATE
1	Lourdes Health System	2/15/2019 1:52 PM
2	Lourdes Health System	12/4/2018 10:05 AM
3	Our Lady of Lourdes	11/19/2018 10:41 AM
4	Rutgers-Camden	11/16/2018 10:11 AM
5	Lourdes Medical Center Camden	11/15/2018 12:31 PM
6	Our Lady of Lourdes Med Ctr	11/13/2018 2:47 PM
7	Our Lady of Lourdes	11/13/2018 2:40 PM
8	Our Lady of Lourdes	11/12/2018 4:56 PM
9	Lourdes Health System	11/12/2018 12:31 PM
10	Lourdes Health System	11/11/2018 8:20 PM
11	Lourdes	11/11/2018 6:41 PM
12	Lourdes	11/11/2018 3:55 PM
13	Our Lady of Lourdes Medical Center	11/10/2018 9:20 PM
14	Our Lady of Lourdes Medical Center	11/10/2018 12:44 PM
15	OLOLMC	11/9/2018 11:11 AM
16	Lourdes Health System	11/9/2018 10:31 AM
17	Our Lady of Lourdes MC	11/9/2018 10:13 AM
18	our lady of lourdes	11/9/2018 9:41 AM
19	Lourdes Health System	11/9/2018 9:20 AM
20	Lourdes Health System	11/9/2018 9:20 AM
21	Our lady of lourdes	11/9/2018 9:17 AM
22	Our Lady of Lourdes	11/9/2018 9:14 AM
23	Lourdes Cardiology	11/9/2018 9:12 AM
24	our lady of lourdes	11/9/2018 9:06 AM
25	Our Lady of Lourdes	11/9/2018 9:03 AM
26	Lourdes Health System	11/9/2018 8:36 AM
27	Osborn	11/9/2018 8:36 AM
28	None	11/9/2018 8:33 AM
29	Lourdes Health System	11/9/2018 7:48 AM
30	Lourdes	11/9/2018 7:24 AM
31	Our Lady of Lourdes	11/9/2018 6:55 AM
32	Lourdes	11/9/2018 6:50 AM
33	OLLMC	11/8/2018 10:21 PM
34	Lourdes Health System	11/8/2018 9:48 PM
35	Our Lady of Lourdes Medical Centeer	11/8/2018 9:10 PM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

36	Our Lady of Lourdes Medical Center	11/8/2018 8:34 PM
37	PBCIP	11/8/2018 1:30 PM
38	Camden High School	11/8/2018 1:28 PM
39	CHS	11/8/2018 1:25 PM
40	CBOP	11/8/2018 1:22 PM
41	PBCIP/CCHS	11/8/2018 1:20 PM
42	Haddon Ave Business Association	11/8/2018 1:19 PM
43	LtBrooks Tax Consultant, LLC, Zachaeus House for Tax Assistance	11/8/2018 1:12 PM
44	Trinity-health	10/26/2018 3:03 PM
45	N/a	10/25/2018 11:40 AM
46	Bike Camden County	10/25/2018 10:31 AM
47	Lourdes Health System	10/24/2018 12:19 PM
48	Camden resident that works at Cooper hospital	10/24/2018 11:13 AM
49	Bicycle Coalition of Greater Philadelphia	10/24/2018 9:25 AM
50	Camden Sophisticated Sisters	10/24/2018 8:30 AM
51	Camden Fire Department	10/19/2018 7:28 AM
52	PBCIP	10/18/2018 2:16 PM
53	Osborn Family Health Center	10/18/2018 9:38 AM
54	Cooper	10/18/2018 9:37 AM

Q10 Please provide your address. (Optional)

Answered: 34 Skipped: 87

#	RESPONSES	DATE
1	67 Penn Street, Camden, NJ 08102	11/16/2018 10:11 AM
2	Sewell, NJ Work in 1600 Haddon Ave. Camden NJ	11/12/2018 4:56 PM
3	1327 Keswick Avenue, Haddon Heights, NJ 08035	11/12/2018 1:01 PM
4	None	11/11/2018 6:41 PM
5	108 East Narberth Terrace, Collingswood	11/10/2018 9:20 PM
6	Our Lady of Lourdes Medical Center 1600 Haddon Ave. Camden, NJ 08103	11/9/2018 10:31 AM
7	Na	11/9/2018 9:17 AM
8	624 Cedar Avenue Haddonfield, NJ 08033	11/9/2018 9:03 AM
9	n/a	11/9/2018 8:36 AM
10	None	11/9/2018 8:33 AM
11	1041 S Merrimac Road Camden, NJ 08104	11/9/2018 7:45 AM
12	1600 Haddon Avenue Camden, NJ 08103	11/8/2018 8:34 PM
13	1588 Greenwood Ave	11/8/2018 1:31 PM
14	1163 Kenwood Ave	11/8/2018 1:30 PM
15	1875 Park Blvd	11/8/2018 1:28 PM
16	1243 Langham	11/8/2018 1:27 PM
17	1875 Park Blvd	11/8/2018 1:25 PM
18	1465 Princess Ave	11/8/2018 1:24 PM
19	1454 Ormond Ave	11/8/2018 1:22 PM
20	1487 Kenwood Ave, Camden (business)	11/8/2018 1:20 PM
21	1023 Kenwood Ave	11/8/2018 1:19 PM
22	1045 Haddon Ave	11/8/2018 1:16 PM
23	1471 Baird Ave	11/8/2018 1:13 PM
24	1544 Bradley Avenue	11/8/2018 1:12 PM
25	1481 Ormond Avenue, Camden	11/8/2018 1:09 PM
26	1531 Baird Blvd	11/8/2018 1:07 PM
27	1969 Park Blvd, Camden	11/8/2018 1:06 PM
28	1518 Greenwood Avenue	11/8/2018 1:04 PM
29	Park Boulevard, Camden	11/8/2018 1:03 PM
30	1247 princess Avenue	10/25/2018 11:40 AM
31	1742 Ferry Ave Camden NJ, 08104	10/25/2018 10:31 AM
32	4 N. Third Street Camden, NJ 08102	10/19/2018 7:28 AM
33	1487 Kenwood Ave. Camden, NJ 08103	10/18/2018 2:16 PM
34	1601 Haddon Ave.	10/18/2018 9:38 AM

Q11 Please provide your telephone number. (Optional)

Answered: 25 Skipped: 96

#	RESPONSES	DATE
1	856 225 27100	11/16/2018 10:11 AM
2	609 405 9142	11/12/2018 1:01 PM
3	None	11/11/2018 6:41 PM
4	Na	11/9/2018 9:17 AM
5	609-922-1894	11/9/2018 9:03 AM
6	n/a	11/9/2018 8:36 AM
7	856-580-6452	11/8/2018 8:34 PM
8	609 792 5514	11/8/2018 1:31 PM
9	856 729 6655	11/8/2018 1:30 PM
10	856 966 5100	11/8/2018 1:28 PM
11	856 966 5100	11/8/2018 1:25 PM
12	856 541 5989	11/8/2018 1:24 PM
13	856 831 8963	11/8/2018 1:22 PM
14	856 295 2611	11/8/2018 1:20 PM
15	856 246 9700	11/8/2018 1:19 PM
16	856 979 3227	11/8/2018 1:16 PM
17	856 541 1322	11/8/2018 1:13 PM
18	703 647 0015	11/8/2018 1:12 PM
19	856 541 8443	11/8/2018 1:09 PM
20	856 631 9715	11/8/2018 1:07 PM
21	856 308 3575	11/8/2018 1:06 PM
22	856 966 3473	11/8/2018 1:04 PM
23	856 964 0645	11/8/2018 1:03 PM
24	856-254-7856	10/25/2018 10:31 AM
25	856-757-7520	10/19/2018 7:28 AM

Q12 Please provide your email address. (Optional)

Answered: 43 Skipped: 78

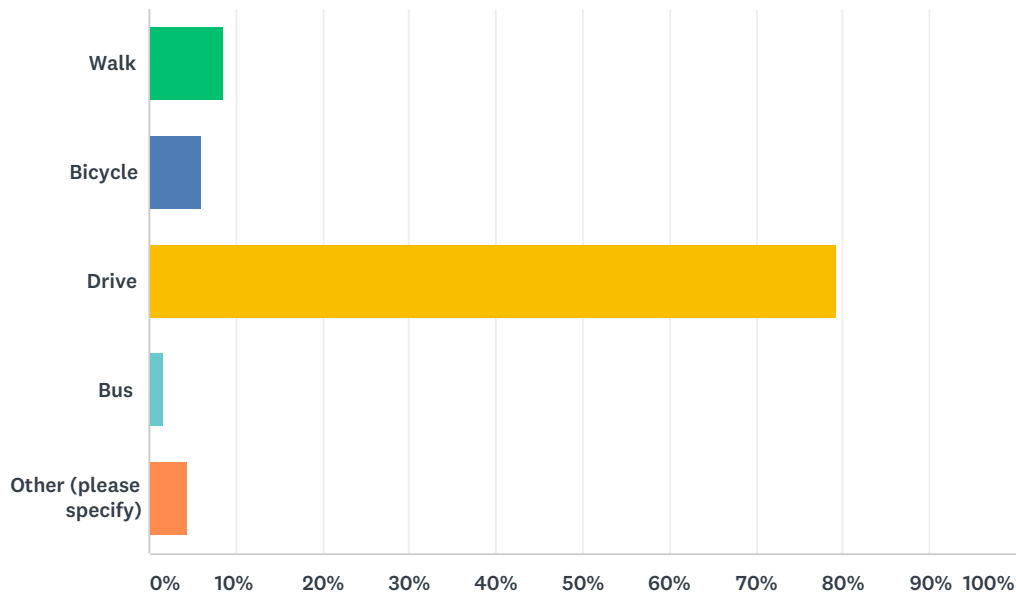
#	RESPONSES	DATE
1	jose.fernandez@lourdesnet.org	2/15/2019 1:52 PM
2	shrpacene@comcast.net	12/6/2018 9:46 AM
3	michael.ditalia@camden.rutgers.edu	11/16/2018 10:11 AM
4	Jennifer.Whaley@lourdesnet.org	11/15/2018 12:31 PM
5	jurskia@lourdesnet.org	11/13/2018 2:40 PM
6	schumacherc2@lourdesnet.org	11/12/2018 4:56 PM
7	joycematola@comcast.net	11/12/2018 1:01 PM
8	doughertyc@lourdesnet.org	11/12/2018 12:31 PM
9	None	11/11/2018 6:41 PM
10	Lshaw42004@yahoo.com	11/11/2018 5:00 PM
11	Daisyjena@comcast.net	11/11/2018 3:55 PM
12	jhbrumett@gmail.com	11/10/2018 9:20 PM
13	liroelsie2002@yahoo.com	11/9/2018 7:19 PM
14	lexand150@gmail.com	11/9/2018 11:11 AM
15	popea@lourdesnet.org	11/9/2018 10:31 AM
16	Na	11/9/2018 9:17 AM
17	lmccracken1763@aol.com	11/9/2018 9:06 AM
18	goodfellow8@outlook.com	11/9/2018 9:03 AM
19	n/a	11/9/2018 8:36 AM
20	Mbloomfield2013@gmail.com	11/9/2018 8:33 AM
21	856-298-7976	11/9/2018 7:45 AM
22	classick-wallacem@lourdesnet.org	11/8/2018 9:10 PM
23	dalyc@lourdesnet.org	11/8/2018 8:34 PM
24	stunna1958@comcast.net	11/8/2018 1:31 PM
25	swynn@camden.k12.nj.us	11/8/2018 1:28 PM
26	tmg3473@???.com	11/8/2018 1:27 PM
27	manderson-coles@camdenk12.nj.us	11/8/2018 1:25 PM
28	sgreene@pbcip.org	11/8/2018 1:20 PM
29	visionaryent.bh@gmail.com	11/8/2018 1:19 PM
30	kathryn.c.gaines@gmail.com	11/8/2018 1:16 PM
31	ltbrookstax@gmail.com	11/8/2018 1:12 PM
32	gsmith4729@gmail.com	11/8/2018 1:07 PM
33	elaine012455@gmail.com	11/8/2018 1:06 PM
34	jmillgc@gmail.com	10/25/2018 10:31 AM
35	bikeguyrich@hotmail.com	10/24/2018 3:14 PM

Haddon Avenue, Euclid Avenue to Newton Avenue Concept Development Study Community Survey

36	jekriebel@gmail.com	10/24/2018 1:00 PM
37	bsaracco1@gmail.com	10/24/2018 11:13 AM
38	john@bicyclecoalition.org	10/24/2018 9:25 AM
39	wawanbam@gmail.com	10/24/2018 8:30 AM
40	miharper@ci.camden.nj.us	10/19/2018 7:28 AM
41	manager@parksidertm.com	10/18/2018 2:16 PM
42	bauerle-brian@cooperhealth.edu	10/18/2018 1:16 PM
43	smiahjr@aol.com	10/18/2018 12:06 PM

Q1 When you are traveling within the study area, what is your primary means of travel?

Answered: 116 Skipped: 7

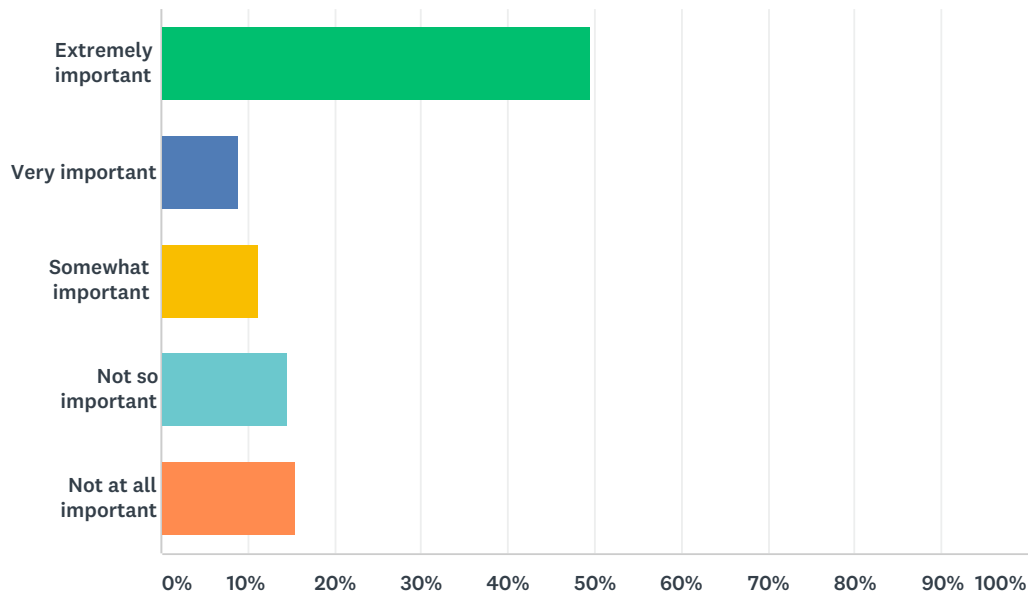


ANSWER CHOICES	RESPONSES	
Walk	8.62%	10
Bicycle	6.03%	7
Drive	79.31%	92
Bus	1.72%	2
Other (please specify)	4.31%	5
TOTAL		116

#	OTHER (PLEASE SPECIFY)	DATE
1	Emergency vehicle	4/9/2019 6:45 PM
2	walking & driving	4/4/2019 5:40 PM
3	Drive and walk	4/3/2019 9:34 AM
4	I live on Haddon Avenue...I walk and park my vehicles on the street	3/29/2019 9:07 PM
5	A mix of drive and ride bike, equal split.	3/26/2019 8:39 PM

Q2 How important to you is the need to provide parking on both sides of Haddon Avenue?

Answered: 123 Skipped: 0



ANSWER CHOICES	RESPONSES	
Extremely important	49.59%	61
Very important	8.94%	11
Somewhat important	11.38%	14
Not so important	14.63%	18
Not at all important	15.45%	19
TOTAL		123

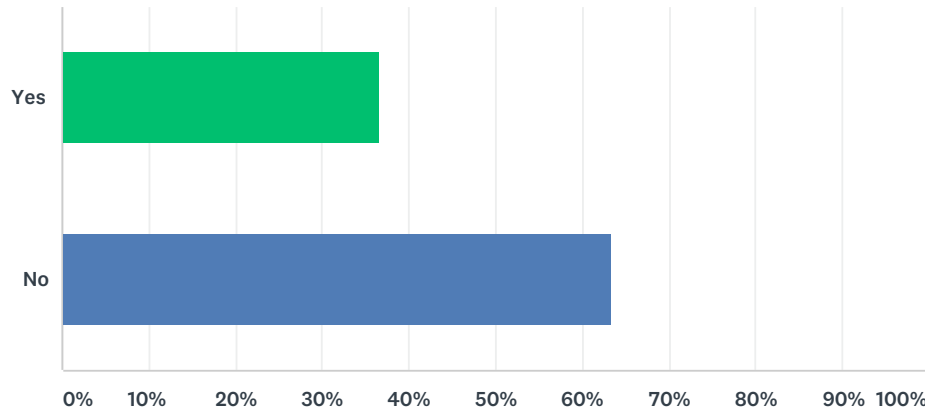
#	ADDITIONAL COMMENTS	DATE
1	Eliminating parking totally inconveniences property owners who reside on both sides of Haddon Avenue. Alternatives #2 & #3 offer no options, i.e. provision of free offstreet parking within 6-16 ft. of the homeowners' residence.	4/17/2019 2:56 PM
2	Parking on both sides of the street should be determined if properties are zoned residential or commercial. Some business may have off street parking; however residential homes may not have a drive way and need a designated parking spot.	4/10/2019 3:34 PM
3	However, people who live in Camden probably feel otherwise. People double park at some areas as it is.	4/9/2019 10:52 PM
4	I love on Haddon Avenue and parking is bad so extra parking would be great.	4/9/2019 5:46 PM
5	live on Haddon Avenue	4/4/2019 5:40 PM
6	Residential Section/homeowners occupied.	4/2/2019 7:20 PM
7	I own donkeys, a business on haddon have.	4/1/2019 4:53 PM
8	This is where the residents who like on both sides of the street park if you're not aware of the neighborhood	3/29/2019 9:07 PM

Haddon Avenue Concept Development Alternatives Survey

9	as long as their safe parking close by on other nearby streets areas; if haddon ave is a safer place then it would be more important	3/29/2019 10:24 AM
10	If parking is to be limited then beautification including trees need to be added.	3/27/2019 7:42 PM
11	the local businesses need parking for their customers	3/26/2019 4:07 PM
12	The parking on the Northbound side may be more critical than providing it on the Southbound side	3/26/2019 2:08 PM
13	The double parking is extremely aggravating and if eliminated the parking wouldn't be such an issue.	3/11/2019 3:37 PM
14	I understand the desire to have a bicycle lane, and it's obvious the decision is inevitable. I want to reiterate, with the plans of having a new business landscape on Haddon Ave, parking is needed. It should model the likes of Haddon Ave further up in Collingswood. Parking is available on BOTH sides of the street AND its well lit. After Lourdes hospital, traveling deeper into Camden, the bright white lights become warm yellow lights (on one side of the street).	3/11/2019 10:02 AM
15	Lots of businesses. Parking is a must.	2/28/2019 12:23 PM
16	I use the parking occasionally, but it isn't necessary since I can also get there easily by bicycle.	2/17/2019 3:27 PM

Q3 Would you support the elimination of parking on one side of Haddon Avenue to provide a dedicated bicycle lane?

Answered: 123 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	36.59%	45
No	63.41%	78
TOTAL		123

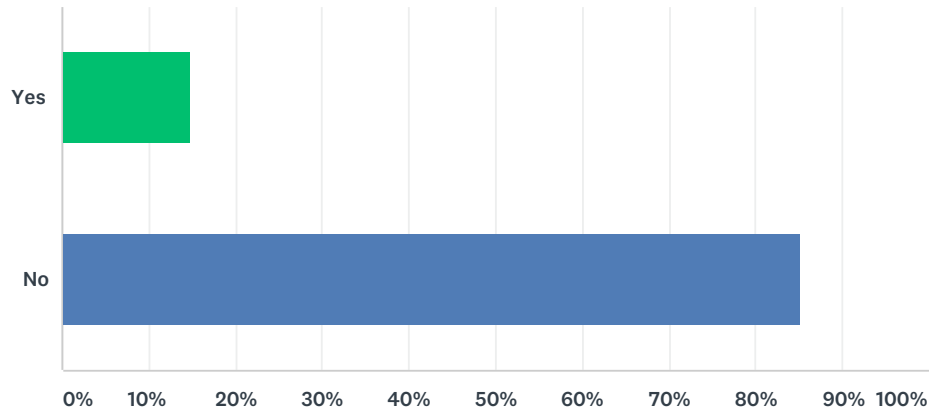
#	ADDITIONAL COMMENTS	DATE
1	Bicyclists don't care. They ride in the middle of the street and in and out of traffic as they please. There's a huge pedestrian and bicycle problem in Camden which metro does not address. I feel the dedicated bicycle lane will be a waste. Focus needs to be on motorists and parking.	4/16/2019 6:45 PM
2	People already double park illegally on Haddon Avenue causing traffic problems	4/15/2019 11:30 AM
3	In theory it's a good idea, but we are many years if not decades away from having that much bicycle traffic	4/10/2019 10:05 AM
4	However, people who live in Camden probably feel otherwise. People double park at some areas as it is. Then the drives would have to veer into the bike lane when cars are double parked illegally.	4/9/2019 10:52 PM
5	There is already not enough parking.	4/9/2019 6:45 PM
6	biking is not at all important to the people of the community	4/4/2019 5:40 PM
7	Because I need my parking in front of my house. I am handicapped.	4/3/2019 1:47 PM
8	Is there a way for parking on both sides and one bike lane?	4/3/2019 1:42 PM
9	Not at all	4/3/2019 1:37 PM
10	Not enough parking now.	4/2/2019 7:20 PM
11	Due to the amount of business on a portion of Haddon Ave. there is a need for both sides to park.	4/1/2019 8:31 AM
12	Not at all. It is already a congested area and a need for more parking.	3/30/2019 11:37 PM
13	with all the vehicles on haddon ave on both sides ,there would be no room for one sided parking	3/30/2019 6:10 PM
14	Of course NOT!	3/29/2019 9:07 PM
15	if there is a large contingency or bicycling expected then i may digress but it seems parking can be tight as is. there maybe other bike paths thru parks that can work and/or biking on the side walks (or even streets like other cities do)	3/29/2019 10:24 AM

Haddon Avenue Concept Development Alternatives Survey

16	Many homes and business along Haddon Ave.	3/23/2019 8:42 PM
17	Parking has always been on both sides. On parts of Haddon there are residents, some disabled. Parking should continue to be on both sides.	2/28/2019 12:23 PM
18	I am fairly neutrall, I feel like there is enough space for a two lane bikeway that is only 5' wide, and parking at least on one side. Or a parking buffered bikeway.	2/17/2019 3:27 PM
19	Would it be possible to do a parking protected bike lane instead of eliminating parking?	2/12/2019 1:55 PM

Q4 Would you support the elimination of parking on both sides of Haddon Avenue to provide a wider two-way bicycle lane?

Answered: 122 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	14.75%	18
No	85.25%	104
TOTAL		122

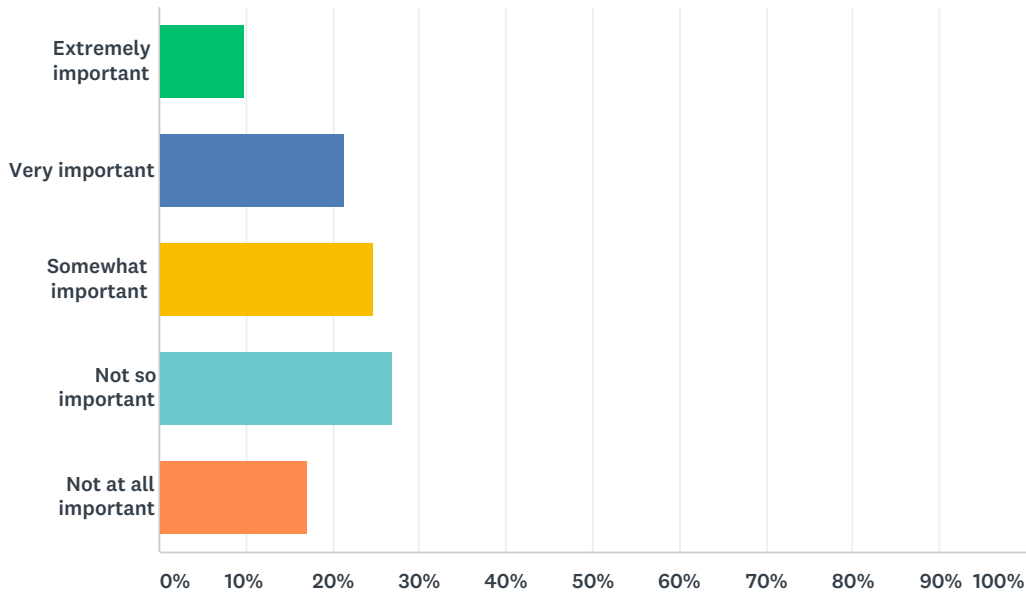
#	ADDITIONAL COMMENTS	DATE
1	See above comments. The traffic in Camden is already heavy. Especially during rush hour time. Focus should be on parking availability rather than bicycles.	4/16/2019 6:45 PM
2	As a car driver, visibility of obstacles is important. Eliminating parked cars helps visibility. Also, a bike lane on only one side of the street decreases the number of places an obstacle should be, increasing safety.	4/10/2019 5:08 PM
3	I love the idea. I don't think residential properties without driveways would care for it. They need a designated spot. It is much safer for bikers, and it makes the roadway wider which is good for Emergency vehicles, or if Admiral Wilson is flooded, and traffic has to be detoured.	4/10/2019 3:34 PM
4	See #4	4/10/2019 10:05 AM
5	Not sure. This doesn't affect me as I drive. However, people who live in Camden probably feel otherwise. People will park in the bike lane.	4/9/2019 10:52 PM
6	Parking is extremely important. There are already people always double parked to access businesses.	4/9/2019 6:45 PM
7	See the written answer above	4/4/2019 5:40 PM
8	Not at all	4/3/2019 1:37 PM
9	Not necessary. One biking lane should manage.	4/2/2019 7:20 PM
10	Because bikers do not use biker lanes now it is a wasted space.	4/1/2019 8:31 AM
11	where would people park!!!	3/30/2019 6:10 PM
12	This is a dumber question than the previous one.	3/29/2019 9:07 PM
13	But only if alternative parking is established.	3/27/2019 7:42 PM
14	No. Bikes and driver needs to be working together. Bikes are vehicles. Drivers need to see more bikes along the road, in the same direction as they are moving.	3/26/2019 8:39 PM

Haddon Avenue Concept Development Alternatives Survey

15	Not enough parking spots to support the Neighborhood	3/19/2019 8:31 AM
16	I imagine restaurants, shopping (boutiques etc) along Haddon Ave. Therefore parking is necessary! I do not think parking in neighborhoods is ideal.	3/11/2019 10:02 AM
17	Yes, but again, I think the bikeway can be narrower, with a parking buffer.	2/17/2019 3:27 PM
18	Eliminating parking is not good for the businesses, and it's not very helpful to pit bike lanes against parking here... it would be more helpful to talk about this as traffic calming to make it safer for everyone.	2/12/2019 1:55 PM

Q5 How important is it to you to provide wider sidewalks?

Answered: 122 Skipped: 1



ANSWER CHOICES	RESPONSES	
Extremely important	9.84%	12
Very important	21.31%	26
Somewhat important	24.59%	30
Not so important	27.05%	33
Not at all important	17.21%	21
TOTAL		122

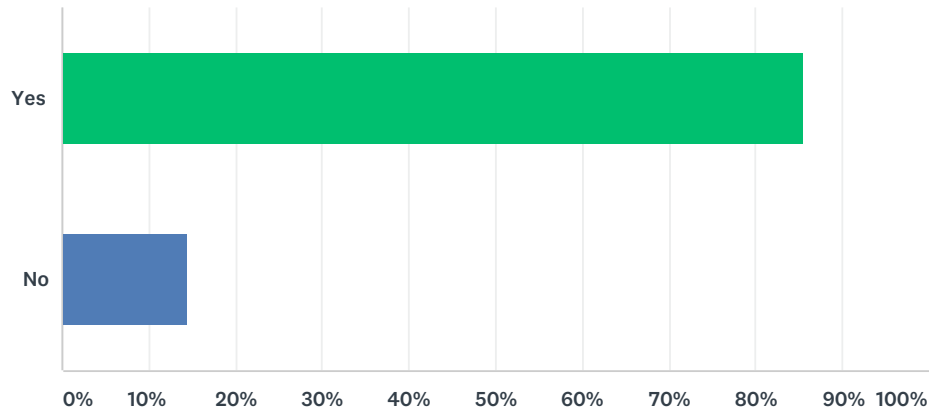
#	ADDITIONAL COMMENTS	DATE
1	As businesses come to Camden foot traffic will increase. In some parts of Phila I wish the sidewalks were larger. When increasing the sidewalks it will assist with snow removal in Winter months. It is hard to find a place to put snow in the city. In addition snow removal would create jobs.	4/10/2019 3:34 PM
2	People do not general walk down Haddon Ave on the sidewalks especially going from say Collingswood to the river front. People who bike do so in the street anyways.	4/9/2019 10:52 PM
3	The width is fine once those trees that are tearing up the sidewalks are removed	4/4/2019 5:40 PM
4	The question should ask "what condition do you think the sidewalks are presently in?"	3/29/2019 9:07 PM
5	very important if bicyclers will be using too. wider side walks are safer, less potentially confrontational and friendlier	3/29/2019 10:24 AM
6	I find the sidewalks in the area wide enough, in most places.	3/26/2019 8:39 PM
7	Unless you are able to provide for 16' side walks that can accommodate sidewalk dining. That would create opportunities for restaurants to have outdoor seating.	3/26/2019 4:07 PM
8	Sidewalks themselves are important but I do not see the current width as problematic.	3/11/2019 10:02 AM
9	Support this only if it doesn't shut down parking on either side.	2/28/2019 12:23 PM

Haddon Avenue Concept Development Alternatives Survey

10	Pedestrian safety is of utmost importance. The road needs to be narrowed somehow to slow cars down, and pedestrians need more space.	2/12/2019 1:55 PM
----	--	-------------------

Q6 Are the existing number and location of bus stops adequate?

Answered: 111 Skipped: 12

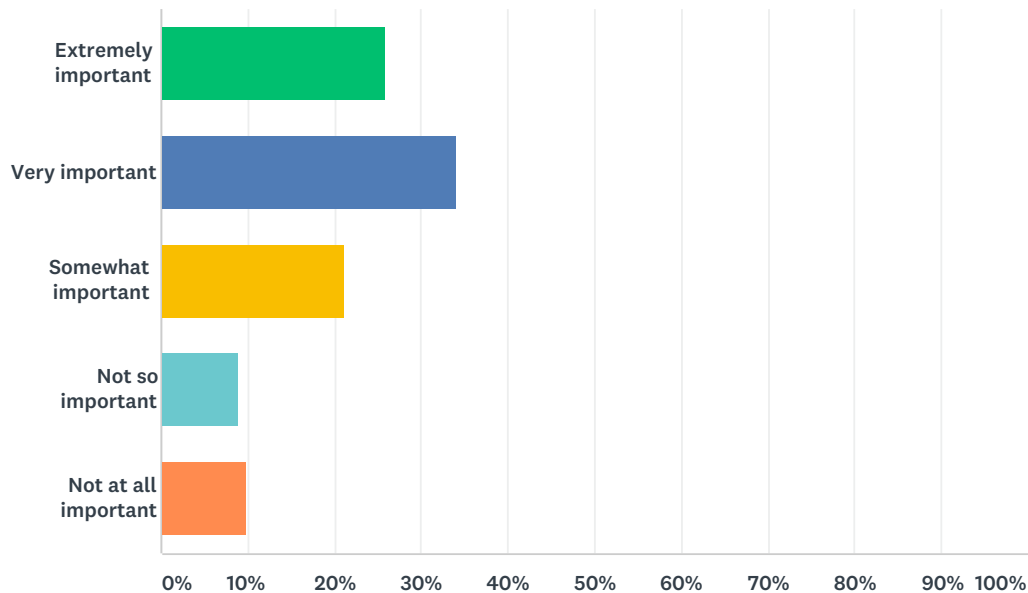


ANSWER CHOICES	RESPONSES	
Yes	85.59%	95
No	14.41%	16
TOTAL		111

#	ADDITIONAL COMMENTS	DATE
1	Stops are too far apart. Some need to be added.	4/15/2019 1:09 PM
2	I am not sure on this subject since I do not ride the bus.	4/15/2019 11:30 AM
3	N/A	4/11/2019 10:39 AM
4	Seems like the bus has many stops. Again I do not take the bus so it could be otherwise to people who take the bus.	4/9/2019 10:52 PM
5	Signs noting the stops are needed	4/4/2019 5:40 PM
6	New & better signage would be a plus.	3/29/2019 9:07 PM
7	Saying no only because I do not know that answer to this question.	3/27/2019 7:42 PM
8	Not sure, I do not use bus here.	3/26/2019 10:19 PM
9	I can't say. Don't ride the bus.	3/26/2019 8:39 PM
10	I would leave that question for someone who utilizes that type of transportation. I can not tell or decide.	3/26/2019 2:08 PM
11	Not familiar with bus stops.	3/19/2019 8:31 AM
12	Better signage and lighting around each stop would add to safer corridor.	3/11/2019 3:37 PM
13	I am unaware of all the bus stops available but they should be at least every 3 blocks	3/11/2019 10:02 AM
14	Not sure! Bus stops are not properly identified. Ideally, this initiative should include bus shelters.	2/28/2019 5:09 PM
15	Benches at Bus Stops ONLY!!	2/28/2019 12:23 PM

Q7 How important to you are street trees and green infrastructure (plantings)?

Answered: 123 Skipped: 0



ANSWER CHOICES	RESPONSES	
Extremely important	26.02%	32
Very important	34.15%	42
Somewhat important	21.14%	26
Not so important	8.94%	11
Not at all important	9.76%	12
TOTAL		123

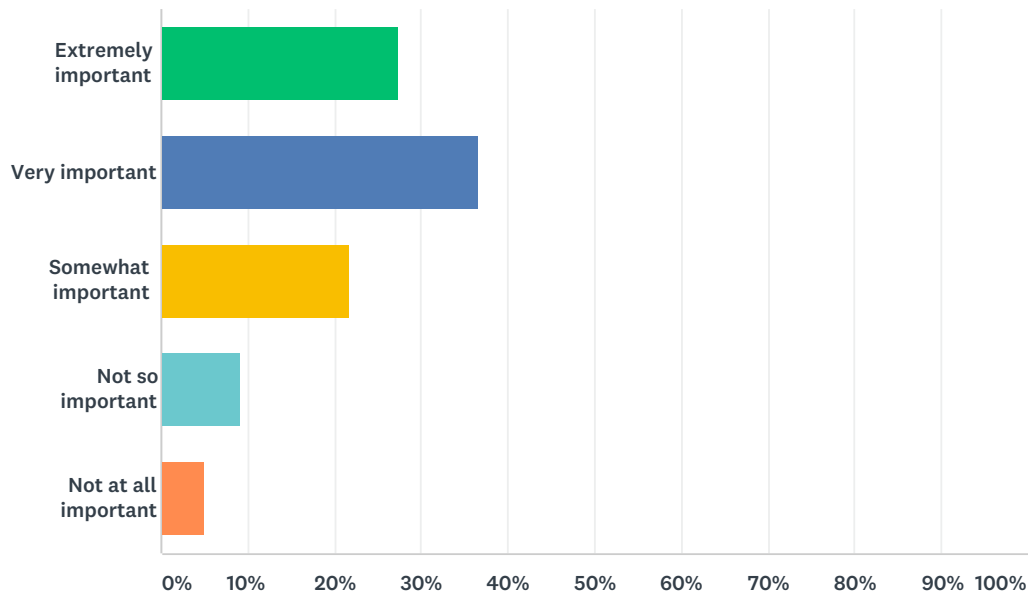
#	ADDITIONAL COMMENTS	DATE
1	Greenery and birds chirping would brighten up Haddon Ave and make it more inviting to spend some time in this area	4/24/2019 9:30 AM
2	Trees should be better spaced, and better maintained, i.e. trimmed. Too many trees appear to clutter an already "overcrowded, unattractive business corridor with a lack of sanitation and maintenance. The latter needs to be a part of the plan: Accountability and Improved maintenance on the part of the businesses in order to earn/deserve improvements.	4/17/2019 2:56 PM
3	Trees provide oxygen.	4/15/2019 1:09 PM
4	Need appropriate type and sized trees for the area that don't block the security cameras or obscure the businesses.	4/15/2019 11:17 AM
5	Street trees & plants help the environment. Need to make sure trees aren't planted too close to sewer lines. Maintaining the greener would create jobs.	4/10/2019 3:34 PM
6	Think the travel patterns and trash are more important to focus on at this point to most travelers and people who live along Haddon Ave.	4/9/2019 10:52 PM
7	They will interfere with pedestrian traffic.	4/9/2019 6:45 PM
8	If you put something down and they are not maintained, what's the point??	4/4/2019 5:40 PM

Haddon Avenue Concept Development Alternatives Survey

9	To keep the area breath clean.	4/3/2019 1:47 PM
10	Would like existing trees removed due to damage to sewer lines annually.	4/2/2019 7:20 PM
11	want to be sure they don't negatively impact the sidewalks - select the correct trees!	4/1/2019 4:24 PM
12	Air quality is important and trees gives a helping hand to that.	4/1/2019 8:31 AM
13	the trees on the block are damaging residents sewer lines now.	3/30/2019 6:10 PM
14	The trees presently were put in, not maintained and currently destroying the sidewalks and getting into the water and sewer and water lines of many homeowners.	3/29/2019 9:07 PM
15	important for beautification of the city	3/29/2019 10:24 AM
16	This stretch of roadway was never that scenic but thanks to years and decay needs to be made more so.	3/27/2019 7:42 PM
17	Very important, as long as they are maintained by a specific entity.	3/26/2019 10:19 PM
18	Adding and keeping the existing trees is critical.	3/26/2019 6:47 PM
19	They grow in the sidewalks and mess up the plumbing	3/24/2019 1:36 PM
20	They cause damage to the sidewalks	3/23/2019 8:42 PM
21	I recently have moved into the area and using my property for example, the roots have overgrown to the point where the sidewalks are damages and hazardous. I believe greenery is important but it should obstruct views or cause potential hazards and unnecessary clean-ups going forward.	3/11/2019 10:02 AM
22	New, more thoughtfully specified trees are a must. Only interested in green infrastructure with a maintenance plan funded by city of Camden or Camden county.	2/28/2019 5:09 PM
23	Oxygen! But cannot hide businesses. Must be easily maintained by County.	2/28/2019 12:23 PM
24	Trees are good all around. They tend to be traffic calming, enhance air quality, and absorb some storm water, which helps prevent the storm drains from flooding.	2/17/2019 3:27 PM

Q8 How important to you are decorative lighting and street furniture such as benches, bicycle racks and trash receptacles?

Answered: 120 Skipped: 3



ANSWER CHOICES	RESPONSES	
Extremely important	27.50%	33
Very important	36.67%	44
Somewhat important	21.67%	26
Not so important	9.17%	11
Not at all important	5.00%	6
TOTAL		120

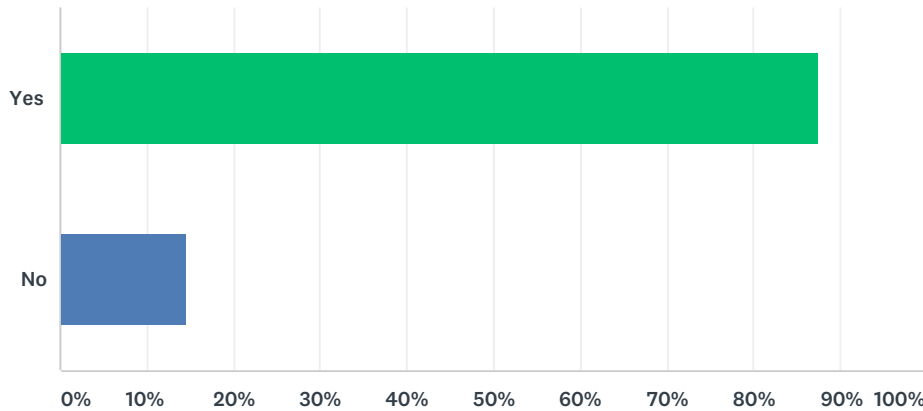
#	ADDITIONAL COMMENTS	DATE
1	Canopied benches at all bus stops for seating, and protection from weather; racks at major stops, e.g. Haddon & Kaighn, Lourdes Hospital, etc.; receptacles at every stop. There are often differently abled persons, ordinary folks coming and going after a days work, and parents with multiple children waiting for extended periods at the stops. For those who complain of loitering, I suggest they get their "friendly neighborhood watch members" involved with helping to ensure safe corridors for all (perhaps they don't use public transportation).	4/17/2019 2:56 PM
2	I always say you have to be careful where you put benches because you may have people use them causing distress to homeowners and tenants. I do like the idea of trash receptacle just as long as they are properly maintained.	4/15/2019 11:30 AM
3	Areas to dispose of pet waste.	4/10/2019 3:34 PM
4	But only if littering is going to be policed and policies enforces, otherwise it's a waste of money.	4/10/2019 10:05 AM
5	Lighting and trash receptacles are very important to improve on. Street "furniture" is not. Street furniture along this section of Haddon Ave will not be used by people who are using the bike path.	4/9/2019 10:52 PM
6	Lighting is important. Benches will be used by homeless.	4/9/2019 6:45 PM

Haddon Avenue Concept Development Alternatives Survey

7	Real leading question, trying to add bikes into the equation has been your focus so far! The need is for...lighting and trash receptacles It is obvious that you didn't have a study about why benches were removed years ago Bike racks would be a complete waste of funds	4/4/2019 5:40 PM
8	Trash receptacles underlined	4/3/2019 1:37 PM
9	Need trash cans	4/2/2019 7:20 PM
10	Take the bike crap out of the equation	4/1/2019 9:12 PM
11	A more community feel to an area	4/1/2019 8:31 AM
12	This is a very leading question! Decorative lighting and trash receptacles are needed, there is NOT a need for bike racks in this area.	3/29/2019 9:07 PM
13	The need for lights and trash receptacles is high. I do not see a great need for bicycle racks in this particular area.	3/29/2019 11:11 AM
14	Some are important. Lighting, but not purely decorative. Bike racks. Trash, yes.	3/26/2019 8:39 PM
15	Please consider a version where bike lane and parking are reversed to avoid car doors and so cars create the buffer.	3/26/2019 7:33 PM
16	trash receptacles should be the priority	3/26/2019 5:07 PM
17	Lighting is critical but it doesn't have to be decorative just functional. Benches may become an issue if they are used by people who are scrupulous and have no business being there.	3/26/2019 2:08 PM
18	Changing looks, helps to change behaviors/perceptions. Lighting should be more than decorative but BRIGHT!	3/11/2019 10:02 AM
19	Do not include benches. Pop up furniture would be awesome at the corner of Haddon and Kaighns, specifically at Fresh Donuts.	2/28/2019 5:09 PM
20	Lighting and Trash Receptacles YES Heavy Duty Bike Racks only.	2/28/2019 12:23 PM
21	Led lights should have fixtures which angle the lights down and prevent light pollution and glare in driver's windshields. Benches and bike racks are good for businesses. Trash cans help prevent litter.	2/17/2019 3:27 PM
22	Haddon desperately needs these things, especially trash cans	2/12/2019 1:55 PM

Q9 Do you support decorative street lighting?

Answered: 48 Skipped: 75

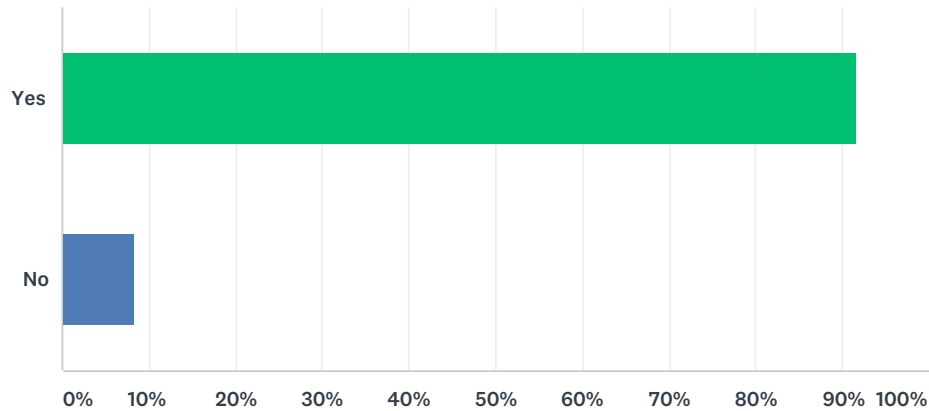


ANSWER CHOICES	RESPONSES	
Yes	87.50%	42
No	14.58%	7
Total Respondents: 48		

#	PLEASE PROVIDE ANY COMMENTS.	DATE
1	Make an investment in lighting less subject to vandalism and destruction.	4/17/2019 2:56 PM
2	But not a priority	4/15/2019 11:30 AM
3	Not necessary	4/10/2019 10:05 AM
4	Not at the increased expense and/or if reducing other more needy improvements	4/10/2019 7:16 AM
5	More street lighting is needed. Decorative I do not know if needed, regular lighting will do.	4/9/2019 10:52 PM
6	see question #8	4/4/2019 5:40 PM

Q10 Do you support the installation of trash receptacles?

Answered: 48 Skipped: 75

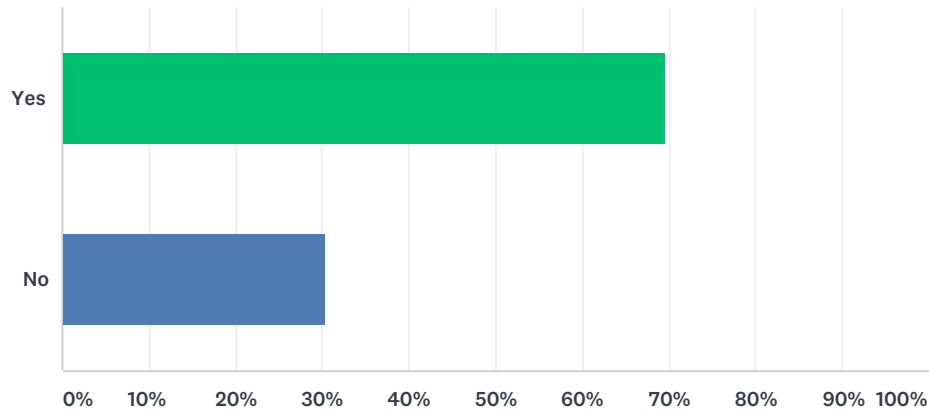


ANSWER CHOICES	RESPONSES	
Yes	91.67%	44
No	8.33%	4
TOTAL		48

#	PLEASE PROVIDE ANY COMMENTS.	DATE
1	With trash cans readily available, hopefully, pedestrians and those sitting on the benches would utilize trash cans instead of leaving their trash on the ground for others to clean	4/24/2019 9:30 AM
2	Immovable, impregnable bases.	4/17/2019 2:56 PM
3	So long as they're maintained properly and aren't allowed to constantly overflow.	4/16/2019 6:45 PM
4	This should be a priority.	4/15/2019 11:30 AM
5	Areas to dispose of pet waste.	4/10/2019 3:34 PM
6	Not if it takes away from more important improvements or adds an increased burden on the city	4/10/2019 7:16 AM
7	However, people will have to actually throw the trash in the receptacles and not on the ground and out of the car windows. The amount of trash is overwhelming especially in the AM drive home.	4/9/2019 10:52 PM
8	If they are emptied and not overflowing.	4/9/2019 6:45 PM
9	see question #8	4/4/2019 5:40 PM

Q11 Do you support the installation of bicycle racks?

Answered: 46 Skipped: 77

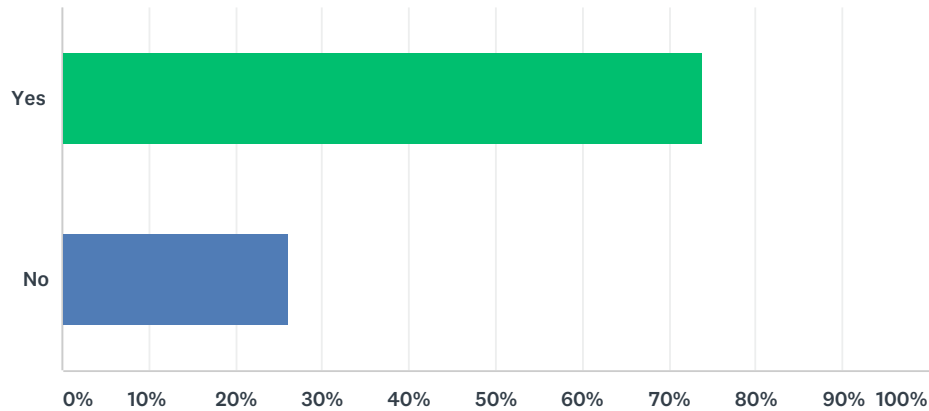


ANSWER CHOICES	RESPONSES	
Yes	69.57%	32
No	30.43%	14
TOTAL		46

#	PLEASE PROVIDE ANY COMMENTS INCLUDING SUGGESTED LOCATIONS IF YOU ANSWERED YES.	DATE
1	If bike racks were to be installed, it would be good to have them out of the way where others cant' readily see them	4/24/2019 9:30 AM
2	See #4	4/10/2019 10:05 AM
3	Not needed at all along Haddon Ave at this section. People who bike are not stopping along anywhere on Haddon Ave enough to lock up their bikes in this section. They use it as a through way to the riverfront or work within the city center only.	4/9/2019 10:52 PM
4	see question #8	4/4/2019 5:40 PM
5	Maybe	4/3/2019 1:42 PM

Q12 Do you support the installation of benches?

Answered: 46 Skipped: 77

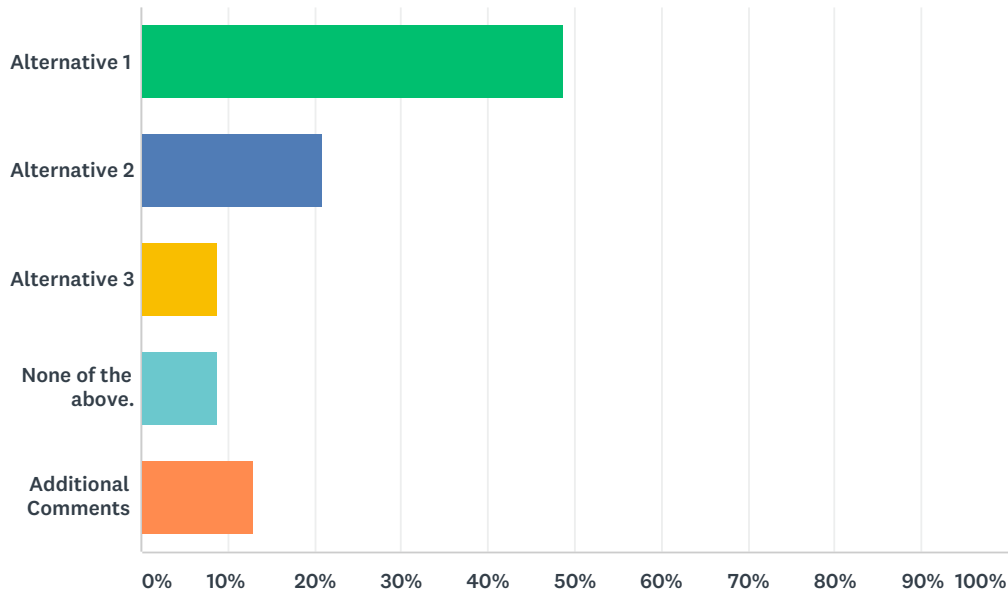


ANSWER CHOICES	RESPONSES	
Yes	73.91%	34
No	26.09%	12
TOTAL		46

#	PLEASE PROVIDE ANY COMMENTS INCLUDING SUGGESTED LOCATIONS IF YOU ANSWERED YES.	DATE
1	Benches should be located near or under the trees, shady spots and near the gardens. Trash cans should also be readily available.	4/24/2019 9:30 AM
2	Canopied, bench installations only.	4/17/2019 2:56 PM
3	It's nice to walk and when tired to be able to sit and people watch.	4/15/2019 1:09 PM
4	It all depends on their locations and the intended use.	4/15/2019 11:30 AM
5	Actually, I only support benches at the bus stops.	4/10/2019 5:08 PM
6	they tend to become places for drug addicts to sleep	4/10/2019 7:16 AM
7	Not needed.	4/9/2019 10:52 PM
8	Generally, I support the installation of benches, but I think the location of these benches would best be determined by residents and businesses	4/9/2019 10:02 AM
9	see question #8	4/4/2019 5:40 PM
10	If you ultimately decide against bicycle lanes, I recommend benches as part of bumpout sidewalks at the following corners: Park, Sycamore, Kaighn, Liberty, Bradley, Atlantic, and Lansdowne.	4/4/2019 12:17 PM
11	Maybe	4/3/2019 1:42 PM

Q13 Do you have a preferred alternative?

Answered: 115 Skipped: 8



ANSWER CHOICES	RESPONSES	
Alternative 1	48.70%	56
Alternative 2	20.87%	24
Alternative 3	8.70%	10
None of the above.	8.70%	10
Additional Comments	13.04%	15
TOTAL		115

#	ADDITIONAL COMMENTS	DATE
1	There are existing bike lanes on Haddon.	4/15/2019 11:17 AM
2	No preference	4/11/2019 10:39 AM
3	Alt 1 with bike path bypass along Park Boulevard	4/10/2019 3:22 PM
4	Safe pedestrian crossing area	4/10/2019 8:01 AM
5	Not going to commit to an alternative at this time. Why was there not an option for one side shared bike lane and one side be for parking? There are never enough bikers to warrant a 12 foot lane for bikes in my opinion. I could see where getting the cars off of Haddon Ave would create the appearance of a safe and cleaner area. But would it be enough to draw more people to use the bike lanes to the river front/city center? Where would everyone park as people already can't find parking and double park at times. How would parking be truly enforced? I think really it will need to be either both sides parking or no parking and only bike lanes to be enforced properly.	4/9/2019 10:52 PM
6	This survey needs to addressed specifically to the residents of the area affected by any proposed changes	4/4/2019 5:40 PM
7	My true preference is having bicycle lanes that are adjacent to the sidewalk separated from the road traffic by parking, rather than having cars crossing over bike lanes to park.	4/4/2019 12:17 PM
8	B	4/3/2019 9:34 AM

Haddon Avenue Concept Development Alternatives Survey

9	Need parking on both sides of Haddon	4/2/2019 7:20 PM
10	Alternative 2 is also good. Alternative 1 is my least favorite because there are no bike lanes included in it!	4/1/2019 4:39 PM
11	Have to be certain that cars don't migrate into the bicycle lane ... if they are looking to pass or stop and pick people up.	4/1/2019 4:24 PM
12	Do not change...	3/27/2019 10:02 PM
13	Safe, all ages and abilities bike lanes are the preference. Design should consider residents of Camden and not middle aged pass through riders. The important factor to consider with Alternative 3 are the transitions in and out of the two way cycle track. Since that is not shown, it's hard to choose that alternative now. Looking forward to future designs.	3/26/2019 10:19 PM
14	I love alternative 3, but physical protection should absolutely be added to the buffer. 3 feet of paint will not stop a driver from potentially crossing the buffer and killing a bicyclist.	3/26/2019 7:04 PM
15	If I were to choose any it would be Alternative 3 (in reverse). The bike lane should be on the side where there are less residences. People need to park and have access to their homes. Most businesses on the opposite side have their own parking available.	3/11/2019 10:02 AM

Q14 Do you have any other comments, questions, or concerns?

Answered: 31 Skipped: 92

#	RESPONSES	DATE
1	The road should remain as it is. Decorative lighting would be an asset.	4/18/2019 1:08 PM
2	There's a huge problem with bicycles and pedestrians in Camden. People violate laws, ride in and out of traffic and "jay walk" constantly. Metro needs to address these problems.	4/16/2019 6:45 PM
3	Thank you for reaching out to the community for their concerns and ideas. Hopefully you are getting good responses. Please keep in mind the safe movement and travel of buses and fire apparatus at emergency speeds.	4/15/2019 11:30 AM
4	Traffic in and out of Camden is difficult at best, bicycles and parking will only have a negative impact on traffic - it is quite important that a Trauma Center like Cooper University and the Medical School and now large Corporations coming into the city have a means to move employees in and out efficiently	4/10/2019 7:16 AM
5	It would be nice to add the bike lanes. It probably would be a lot nicer to drive down Haddon without any parking issues and only have the bike lanes. However, the people using the bike lanes are not the people who live there and will be affected by the change. As a cooper employee who drives to and from CUH Camden 3-4 times a week only using Haddon Ave I feel like this could greatly affect me and other people who drive. I know many people who drive Haddon to work in the city center/Rutgers/riverfront.. are they being included in this conversation? Any updates should be transparent. More surveys are welcomed.	4/9/2019 10:52 PM
6	Traffic congestion and parking are most important.	4/9/2019 6:45 PM
7	Yes, I have a concern about cars speeding down Kenwood Avenue between Euclid and Kaighns Ave. Parked vehicles are damaged on a regular basis. Can speed bumps be installed?	4/4/2019 1:01 PM
8	Along residential area of Haddon two-side parking permitted to accommodate residents and guest	4/4/2019 5:19 AM
9	Yes I need help to fix the pipe and to stop coming in my property. It's been 9 years.	4/3/2019 1:47 PM
10	Make 1 bike lane and 2 parking lanes.	4/3/2019 1:42 PM
11	Crucial to include the residents and local business owners in this project going forward.	4/3/2019 1:39 PM
12	You must speak directly with residents as not to take them for granted. They reside here.	4/3/2019 1:37 PM
13	The businesses on Haddon would be harmed by eliminating parking on Haddon. Residents would be disuaded from shopping on Haddon if parking is eliminated.	4/3/2019 1:32 PM
14	There are many elderly people on and in this area and would not be good for the city to have parking only in one side!	4/3/2019 9:20 AM
15	Real simple, new streets & sidewalks, repair the water & sewer lines that have been damaged by so many overgrown trees, continue the lighting that stopped around LOURDES.	4/1/2019 9:12 PM
16	Spill over from Haddon Ave on to kaighn ave is a mess Litter everywhere city does not pick up trash or ticket those littering Already 2 accidents from speeders at Haddon and kaighn in last four months by other has caused me thousands of dollars in property damage	4/1/2019 4:40 PM
17	Camden residents have been using bicycles without bike lanes pretty well for decades. Any new residents will be fine. What is the purpose for this change? Who is this change for? And why would you eliminate revenue for the city by removing street meter parking for bike lanes?	3/31/2019 8:23 AM
18	Will the citizens input matter?	3/30/2019 11:37 PM
19	This survey appears to be very leading towards the outcome that appears to be what some group of individual within the county would like to have. The leading questions, and the flyer sent out by the Concept Development Team appears to show no thought about the residents who live on Haddon Avenue and the businesses that also operate in the neighborhood. Where do you propose people who live on Haddon Avenue to park?? Side streets to intrude on those neighbors? Sell their vehicles and get a bike or scooter or catch the bus??? Or, maybe sell their house and move huh?	3/29/2019 9:07 PM

Haddon Avenue Concept Development Alternatives Survey

20	need parking to sustain business and parking needs to be readily accessible and safe. with the business comes the foot traffic and things flow onward.	3/29/2019 10:24 AM
21	Do not do no bike lanes the Camden residents don't need them. Thank you	3/29/2019 10:22 AM
22	If if ain't broke don't fix it. I have been here all my life	3/28/2019 9:10 PM
23	Residential parking needs to be considered eliminating option 3.	3/28/2019 7:34 PM
24	Although there are businesses along Haddon Avenue, it is still within a residential area. If parking is eliminated, where will the residents on that street park? Where will parking be provided for patrons of the local businesses? How will it affect residential parking? These are questions that should be considered....	3/27/2019 10:02 PM
25	Would like to a branch of the city library in this area again (hopefully a start of reinvestment in a city library system).	3/27/2019 7:42 PM
26	How will this bike lane play into the future Cross Camden County Trail?	3/26/2019 10:19 PM
27	Need bike lanes. Need a safe route through the area to the Ben Franklin Bridge and into the city. Two-way bike lanes are a step backwards.	3/26/2019 8:39 PM
28	Please do not remove parking along Haddon Ave. especially between Euclid and Park Blvd. along Haddon Ave.	3/26/2019 4:07 PM
29	Cyclist should be routed thru Parkside's circuit trails. Bus shelters are essential to a transformed look along Haddon. Way finding signage and banners are essential.	2/28/2019 5:09 PM
30	A mid-block pedestrian crossing at Liberty and Haddon is needed. People cross there and back all the time now, and it's dangerous.	2/26/2019 4:02 PM
31	With the addition of more trees and trash cans along the road, will there be an actual increase in city services to clean the streets and empty those trash cans?	2/8/2019 11:50 AM

Q15 Please provide any contact information (optional).

Answered: 47 Skipped: 76

ANSWER CHOICES	RESPONSES	
Name	93.62%	44
Company	40.43%	19
Address	80.85%	38
Address 2	6.38%	3
City/Town	85.11%	40
State/Province	80.85%	38
ZIP/Postal Code	80.85%	38
Country	0.00%	0
Email Address	78.72%	37
Phone Number	63.83%	30

#	NAME	DATE
1	Lidia Yax	6/18/2019 9:36 AM
2	Ricardo Miranda	6/18/2019 9:34 AM
3	Jennifer Parker	4/23/2019 9:44 AM
4	Anonymous 2 April 17, 2019	4/18/2019 1:08 PM
5	Anonymous April 17, 2019	4/18/2019 1:07 PM
6	Gwen Watson	4/17/2019 2:56 PM
7	Michael Harper	4/15/2019 11:30 AM
8	Alicia Pison Shaw	4/10/2019 3:34 PM
9	Jack O'Byrne	4/10/2019 3:22 PM
10	Rich	4/10/2019 2:38 PM
11	Sonia Szczesna	4/9/2019 10:02 AM
12	Natalya Frisbey	4/4/2019 1:01 PM
13	Aaliyah rahmaan	4/3/2019 4:20 PM
14	Norma Velez "Marie Carrion"	4/3/2019 1:47 PM
15	Muneerah Abdur-Rahman	4/3/2019 1:39 PM
16	Karen Sheppard	4/3/2019 1:37 PM
17	gus swain	4/3/2019 8:10 AM
18	Jahmal Paynter	4/2/2019 7:20 PM
19	Michael	4/1/2019 4:40 PM
20	Zhenya Nalywayko	4/1/2019 4:39 PM
21	Marge DellaVecchia	4/1/2019 4:24 PM
22	KIM Lynnette Hentz-Manning	4/1/2019 8:31 AM

Haddon Avenue Concept Development Alternatives Survey

23	Jeanette Melendez	3/31/2019 8:23 AM
24	Naomi Scott	3/30/2019 8:53 PM
25	OSCAR SPENCER	3/29/2019 9:07 PM
26	Kim Forman	3/29/2019 10:45 AM
27	Zena Ray	3/29/2019 10:26 AM
28	ryan chew	3/29/2019 10:24 AM
29	Naeemah	3/29/2019 10:22 AM
30	Robert McRae	3/28/2019 9:10 PM
31	T. Brown	3/28/2019 7:34 PM
32	Je'Nell McRae	3/27/2019 10:02 PM
33	Joseph H Walker	3/27/2019 7:42 PM
34	Joe Glennon	3/26/2019 8:39 PM
35	justin yuhaze	3/26/2019 7:51 PM
36	John Kawczynski	3/26/2019 7:33 PM
37	Michael Harper	3/26/2019 2:08 PM
38	Chris Colopinto	3/19/2019 8:31 AM
39	Judith Ward	3/18/2019 12:49 PM
40	MUJIBA PARKER	3/11/2019 6:14 PM
41	Stacey Pierce	3/11/2019 3:37 PM
42	Sheilah Greene	2/28/2019 12:23 PM
43	Jonathan Wetstein	2/26/2019 4:02 PM
44	Jordan Mead	2/17/2019 3:27 PM
#	COMPANY	DATE
1	LEAP Academy	6/18/2019 9:34 AM
2	MD Anderson @ Cooper Cancer Center	4/23/2019 9:44 AM
3	Camden Fire Department	4/15/2019 11:30 AM
4	Cooper Univeristy Healthcare	4/10/2019 3:34 PM
5	Camden county historical society	4/10/2019 3:22 PM
6	Tri-State Transportation Campaign	4/9/2019 10:02 AM
7	New Life Church	4/3/2019 8:10 AM
8	Peachtree	4/1/2019 4:40 PM
9	Group Melvin Design	4/1/2019 4:39 PM
10	ORSPHOTOS	3/29/2019 9:07 PM
11	pbcip/fulton bank	3/29/2019 10:24 AM
12	Self	3/27/2019 10:02 PM
13	CVC Thermoset Specialties, Inc.	3/27/2019 7:42 PM
14	Temple Univ.	3/26/2019 8:39 PM
15	Camden Fire Department	3/26/2019 2:08 PM
16	Advanced Enviro Systems	3/18/2019 12:49 PM
17	PBCIP	2/28/2019 12:23 PM
18	PBCIP	2/26/2019 4:02 PM

Haddon Avenue Concept Development Alternatives Survey

19	Bike Camden County	2/17/2019 3:27 PM
#	ADDRESS	DATE
1	811 Haddon Avenu	6/18/2019 9:36 AM
2	130 North Broadway	6/18/2019 9:34 AM
3	Two Cooper Plaza	4/23/2019 9:44 AM
4	4 North Third Street	4/15/2019 11:30 AM
5	1 Cooper Plaza	4/10/2019 3:34 PM
6	1900 park boulevard	4/10/2019 3:22 PM
7	247 E Front Street	4/9/2019 10:02 AM
8	1432 Kenwood Avenue	4/4/2019 1:01 PM
9	1062 Haddon Ave.	4/3/2019 4:20 PM
10	1032 Haddon Avenue	4/3/2019 1:47 PM
11	1062 Haddon Avenue	4/3/2019 1:39 PM
12	1065 Haddon Avenue	4/3/2019 1:37 PM
13	2818 Marlton Pike	4/3/2019 8:10 AM
14	1426 Haddon Ave	4/2/2019 7:20 PM
15	1340 kaighn	4/1/2019 4:40 PM
16	2 Aquarium Loop Drive	4/1/2019 4:39 PM
17	417 Downs Drive	4/1/2019 4:24 PM
18	1217 Langham Ave	4/1/2019 8:31 AM
19	Greenwood Ave	3/31/2019 8:23 AM
20	1471 Kenwood Ave	3/30/2019 8:53 PM
21	1442 Haddon Avenue	3/29/2019 9:07 PM
22	1502 Kenwood ave	3/29/2019 10:45 AM
23	533 fellowship rd	3/29/2019 10:24 AM
24	1283 Mechanic street	3/28/2019 9:10 PM
25	1070 Beideman Ave Apt 3	3/28/2019 7:34 PM
26	1415 Norris Street	3/27/2019 10:02 PM
27	347 So. 27th St.	3/27/2019 7:42 PM
28	5 Roberts Avenue	3/26/2019 8:39 PM
29	1128 prospect ridge blvd	3/26/2019 7:51 PM
30	301 E Summit Ave	3/26/2019 7:33 PM
31	4 N. Third Street	3/26/2019 2:08 PM
32	1168 Haddon Ave	3/19/2019 8:31 AM
33	1515 Haddon Avenue	3/18/2019 12:49 PM
34	430 S 6th St	3/11/2019 6:14 PM
35	1538 Ormond Avenue	3/11/2019 3:37 PM
36	1487 Kenwood Avenue	2/28/2019 12:23 PM
37	1487 Kenwood Ave.	2/26/2019 4:02 PM
38	1742 Ferry Avenue	2/17/2019 3:27 PM
#	ADDRESS 2	DATE

Haddon Avenue Concept Development Alternatives Survey

1	400 Haddon Avenue	4/23/2019 9:44 AM
2	1217 Langham Ave	4/1/2019 8:31 AM
3	301 E Summit Ave	3/26/2019 7:33 PM
#	CITY/TOWN	DATE
1	Camden	6/18/2019 9:36 AM
2	Camden	6/18/2019 9:34 AM
3	Camden	4/23/2019 9:44 AM
4	Camden	4/15/2019 11:30 AM
5	Camden	4/10/2019 3:34 PM
6	Camden	4/10/2019 3:22 PM
7	Camden	4/9/2019 6:45 PM
8	Trenton	4/9/2019 10:02 AM
9	Camden	4/4/2019 1:01 PM
10	Camden	4/3/2019 4:20 PM
11	Camden	4/3/2019 1:47 PM
12	Camden	4/3/2019 1:39 PM
13	Camden	4/3/2019 1:37 PM
14	Pennsauken	4/3/2019 8:10 AM
15	Camden	4/2/2019 7:20 PM
16	Camden	4/1/2019 4:40 PM
17	Camden	4/1/2019 4:39 PM
18	Cherry Hill	4/1/2019 4:24 PM
19	Camden	4/1/2019 8:31 AM
20	Camden	3/30/2019 11:37 PM
21	Camden	3/30/2019 8:53 PM
22	Camden	3/29/2019 9:07 PM
23	Camden	3/29/2019 10:45 AM
24	mt laurel	3/29/2019 10:24 AM
25	Camden	3/29/2019 10:22 AM
26	Camden	3/28/2019 9:10 PM
27	Camden	3/28/2019 7:34 PM
28	Camden	3/27/2019 10:02 PM
29	Camden	3/27/2019 7:42 PM
30	Haddonfield	3/26/2019 8:39 PM
31	haddon heights	3/26/2019 7:51 PM
32	Haddonfield	3/26/2019 7:33 PM
33	Camden	3/26/2019 2:08 PM
34	CAMDEN NJ	3/19/2019 8:31 AM
35	Camden	3/18/2019 12:49 PM
36	Camden	3/11/2019 6:14 PM
37	Camden	3/11/2019 3:37 PM

Haddon Avenue Concept Development Alternatives Survey

38	Camden	2/28/2019 12:23 PM
39	Camden	2/26/2019 4:02 PM
40	Camden	2/17/2019 3:27 PM
#	STATE/PROVINCE	DATE
1	NJ	6/18/2019 9:36 AM
2	NEW JERSEY	6/18/2019 9:34 AM
3	NJ	4/23/2019 9:44 AM
4	New Jersey	4/15/2019 11:30 AM
5	NJ	4/10/2019 3:34 PM
6	Nj	4/10/2019 3:22 PM
7	Nj	4/9/2019 6:45 PM
8	NJ	4/9/2019 10:02 AM
9	NJ	4/4/2019 1:01 PM
10	Nj	4/3/2019 4:20 PM
11	NJ	4/3/2019 1:47 PM
12	NJ	4/3/2019 1:39 PM
13	NJ	4/3/2019 1:37 PM
14	NJ	4/3/2019 8:10 AM
15	NJ	4/2/2019 7:20 PM
16	Nj	4/1/2019 4:40 PM
17	NJ	4/1/2019 4:39 PM
18	NJ	4/1/2019 4:24 PM
19	NJ	4/1/2019 8:31 AM
20	NJ	3/30/2019 11:37 PM
21	New Jersey	3/30/2019 8:53 PM
22	NJ	3/29/2019 9:07 PM
23	Nj	3/29/2019 10:45 AM
24	NJ	3/29/2019 10:22 AM
25	New Jersey	3/28/2019 9:10 PM
26	NJ	3/28/2019 7:34 PM
27	Nj	3/27/2019 10:02 PM
28	NJ	3/27/2019 7:42 PM
29	NJ	3/26/2019 8:39 PM
30	New Jersey	3/26/2019 7:51 PM
31	New Jersey	3/26/2019 7:33 PM
32	New Jersey	3/26/2019 2:08 PM
33	New Jersey	3/18/2019 12:49 PM
34	New Jersey	3/11/2019 6:14 PM
35	NJ	3/11/2019 3:37 PM
36	NJ	2/28/2019 12:23 PM
37	NJ	2/26/2019 4:02 PM

Haddon Avenue Concept Development Alternatives Survey

38	NJ	2/17/2019 3:27 PM
#	ZIP/POSTAL CODE	DATE
1	08103	6/18/2019 9:36 AM
2	08107	6/18/2019 9:34 AM
3	08102	4/15/2019 11:30 AM
4	08103	4/10/2019 3:34 PM
5	08103	4/10/2019 3:22 PM
6	08033	4/10/2019 2:38 PM
7	08611	4/9/2019 10:02 AM
8	08103	4/4/2019 1:01 PM
9	08104	4/3/2019 4:20 PM
10	08103	4/3/2019 1:47 PM
11	08103	4/3/2019 1:42 PM
12	08103	4/3/2019 1:39 PM
13	08103	4/3/2019 1:37 PM
14	08110	4/3/2019 8:10 AM
15	08103	4/2/2019 7:20 PM
16	08103	4/1/2019 4:39 PM
17	08003	4/1/2019 4:24 PM
18	08103	4/1/2019 8:31 AM
19	08103	3/30/2019 11:37 PM
20	08103	3/30/2019 8:53 PM
21	08103	3/29/2019 9:07 PM
22	08103	3/29/2019 10:45 AM
23	08103	3/29/2019 10:22 AM
24	08104	3/28/2019 9:10 PM
25	08105	3/28/2019 7:34 PM
26	08104	3/27/2019 10:02 PM
27	08105-2107	3/27/2019 7:42 PM
28	08033	3/26/2019 8:39 PM
29	08035	3/26/2019 7:51 PM
30	08033	3/26/2019 7:33 PM
31	08102	3/26/2019 2:08 PM
32	08103	3/19/2019 8:31 AM
33	08103	3/18/2019 12:49 PM
34	08103	3/11/2019 6:14 PM
35	08103	3/11/2019 3:37 PM
36	08103	2/28/2019 12:23 PM
37	08103	2/26/2019 4:02 PM
38	08104	2/17/2019 3:27 PM
#	COUNTRY	DATE

Haddon Avenue Concept Development Alternatives Survey

There are no responses.

#	EMAIL ADDRESS	DATE
1	son4god@hotmail.com	6/18/2019 9:36 AM
2	rmiranda@leap.rutgers.edu	6/18/2019 9:34 AM
3	parker-jennifer1	4/23/2019 9:44 AM
4	gwatson25@gmail.com	4/17/2019 2:56 PM
5	miharper@ci.camden.nj.us	4/15/2019 11:30 AM
6	execdirect@cchsnj.org	4/10/2019 3:22 PM
7	sonia@tstc.org	4/9/2019 10:02 AM
8	natalya.frisbey@gmail.com	4/4/2019 1:01 PM
9	aaliyahr89@gmail.com	4/3/2019 4:20 PM
10	bbminggia@aol.com	4/3/2019 1:42 PM
11	maabdurr@gmail.com	4/3/2019 1:39 PM
12	guswainjr@gmail.com	4/3/2019 8:10 AM
13	peachtree440@verizon.net	4/1/2019 4:40 PM
14	znalywayko@groupmelvindesign.com	4/1/2019 4:39 PM
15	marge.dellavecchia@gmail.com	4/1/2019 4:24 PM
16	kfkimmala32@gmail.com	4/1/2019 8:31 AM
17	jeanette_m_melendez@hotmail.com	3/31/2019 8:23 AM
18	naomiscott729@yahoo.com	3/30/2019 8:53 PM
19	orsphotos@comcast.net	3/29/2019 9:07 PM
20	kimforman@yahoo.com	3/29/2019 10:45 AM
21	zenapray@gmail.com	3/29/2019 10:26 AM
22	rchew@fultonbanknj.com	3/29/2019 10:24 AM
23	blacq2746@yahoo.com	3/28/2019 9:10 PM
24	uncleturk.tb@gmail.com	3/28/2019 7:34 PM
25	jenellmcrae@gmail.com	3/27/2019 10:02 PM
26	joehenrywalker@msn.com	3/27/2019 7:42 PM
27	joeglennon@verizon.net	3/26/2019 8:39 PM
28	jyuhaze31@yahoo.com	3/26/2019 7:51 PM
29	jek@fklaw.org	3/26/2019 7:33 PM
30	miharper@ci.camden.nj.us	3/26/2019 2:08 PM
31	k	3/19/2019 8:31 AM
32	jward@adenviro.com	3/18/2019 12:49 PM
33	msmujiba@gmail.com	3/11/2019 6:14 PM
34	stacey5pierce@icloud.com	3/11/2019 3:37 PM
35	sgreene@pbcip.org	2/28/2019 12:23 PM
36	manager@parksidertm.com	2/26/2019 4:02 PM
37	jmillgc@gmail.com	2/17/2019 3:27 PM
#	PHONE NUMBER	DATE
1	8568315639	6/18/2019 9:36 AM

Haddon Avenue Concept Development Alternatives Survey

2	9399694628	6/18/2019 9:34 AM
3	856-757-7518	4/15/2019 11:30 AM
4	7328378220	4/9/2019 10:02 AM
5	8566569402	4/4/2019 1:01 PM
6	8569938807	4/3/2019 4:20 PM
7	856-655-3605	4/3/2019 1:47 PM
8	856-630-9699	4/3/2019 1:42 PM
9	856 535 6158	4/3/2019 1:39 PM
10	6096054442	4/3/2019 8:10 AM
11	8568751600	4/1/2019 4:40 PM
12	8562519989 x 260	4/1/2019 4:39 PM
13	856-904-1047	4/1/2019 4:24 PM
14	8564266619	3/30/2019 8:53 PM
15	6093130710	3/29/2019 9:07 PM
16	8569065062	3/29/2019 10:45 AM
17	856-787-6215	3/29/2019 10:24 AM
18	8562837365	3/29/2019 10:22 AM
19	85640913466	3/28/2019 9:10 PM
20	8569049369	3/27/2019 7:42 PM
21	8563131090	3/26/2019 7:51 PM
22	9083771896	3/26/2019 7:33 PM
23	856-757-7520	3/26/2019 2:08 PM
24	856816761&	3/19/2019 8:31 AM
25	6108767226	3/18/2019 12:49 PM
26	6097929552	3/11/2019 6:14 PM
27	6092540350	3/11/2019 3:37 PM
28	8562952611	2/28/2019 12:23 PM
29	973-476-6174	2/26/2019 4:02 PM
30	18562547856	2/17/2019 3:27 PM

APPENDIX J

RESOLUTIONS OF SUPPORT

RESOLUTION MC-19:7221
On Motion Of: Angel Fuentes
APPROVED: November 12th, 2019

R-72

MBS:dh
11-12-19

**RESOLUTION IN SUPPORT OF THE COUNTY OF CAMDEN DEPARTMENT OF
PUBLIC WORKS PREFERRED PRELIMINARY ALTERNATIVE FOR HADDON
AVENUE IMPROVEMENTS FROM EUCLID AVENUE TO NEWTON AVENUE**

WHEREAS, the County of Camden Department of Public Works received a Local Aid Infrastructure Funded (LAIF) grant from the New Jersey Department of Transportation (NJDOT) to complete a concept development study for improvements to Haddon Avenue (CR 561) from Euclid Avenue to Newton Avenue; and

WHEREAS, the goal of the project is to improve County transportation and infrastructure and improve mobility, improve signals, install streetscaping and reconstruct and resurface the intersection; and

WHEREAS, through a public process of two stakeholder meetings a public information center (PIC) meeting and collection of printed and digital surveys in English and Spanish, the Camden City residents and business owners in the project area have participated in a community-driven public process to select a Preferred Preliminary Alternative (PPA); and

WHEREAS, the Preferred Preliminary Alternative (PPA) selected through the community driven process was presented and approved by a panel of Subject Matter Experts at NJDOT; and

WHEREAS, the City of Camden has reviewed and participated in the development of the Preferred Preliminary Alternative that has been selected through the concept development process (Alternative #1); and

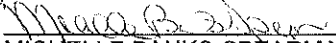
WHEREAS, the City of Camden agrees that the Preferred Preliminary Alternative meets the goals of the concept development study; now, therefore

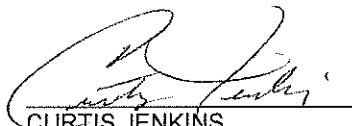
BE IT RESOLVED, that the governing body of the City of Camden endorses the selection of Alternative #1 as the Preferred Preliminary Alternative as proposed by Camden County.

BE IT FURTHER RESOLVED, that pursuant to N.J.S.A. 52:27BBB-23, a true copy of this Resolution shall be forwarded to the State Commissioner of Community Affairs, who shall have ten (10) days from the receipt thereof to veto this Resolution. All notices of veto shall be filed in the Office of the Municipal Clerk.


Date of Introduction: November 12, 2019

The above has been reviewed
and approved as to form.


MICHELLE BANKS-SPEARMAN
City Attorney


CURTIS JENKINS
President, City Council

ATTEST:


LUIS PASTORIZA
Municipal Clerk

RESOLUTION

Res-Pg: 17-1

RESOLUTION OF SUPPORT FOR PREFERRED PRELIMINARY ALTERNATIVE FOR HADDON AVENUE (CR 561) CONCEPT DEVELOPMENT STUDY, EUCLID AVENUE TO NEWTON AVENUE (CR 604), CITY OF CAMDEN

WHEREAS, the County of Camden Department of Public Works (hereinafter referred to as "County") received a Local Aid Infrastructure Funded (LAIF) grant from the New Jersey Department of Transportation (NJDOT) to complete a concept development study for improvements to Haddon Avenue (CR 561) from Euclid Avenue to Newton Avenue, City of Camden, New Jersey; and

WHEREAS, the goal of the project is to improve County transportation and infrastructure and improve mobility, improve signals, install streetscaping and reconstruct and resurface the intersection; and

WHEREAS, through a public process of two stakeholder meetings, a public information center (PIC) meeting and collection of printed and digital surveys in English and in Spanish, the residents of Camden City and business owners in the project area have participated in a community-driven public process to select a Preferred Preliminary Alternative (PPA); and

WHEREAS, the Preferred Preliminary Alternative (PPA) selected through the community-driven public process was presented and approved by a panel of Subject Matter Experts at the NJDOT; and

RESOLUTION

Res-Pg: 17-2

WHEREAS, the County of Camden has reviewed and participated in the development of the Preferred Preliminary Alternative that has been selected through the concept development process (Alternative #1); and

WHEREAS, the County of Camden agrees that the Preferred Preliminary Alternative meets the goals of the concept development study; now, therefore,

BE IT RESOLVED by the Board of Chosen Freeholders of the County of Camden endorses the selection of Alternate #1 as the Preferred Preliminary Alternative as proposed by Camden County.

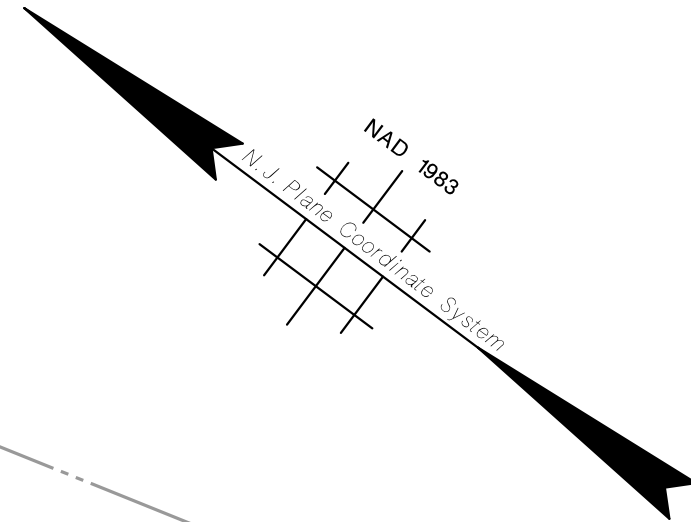
HLG/emc

File #4076 – Highway Dept. Misc. - 2019

Z:Files-General – Highway Dept. – Resolutions 2019 – Resol.supporting Preferred Prelim. Alternative for Haddon Ave. Improvements – 11-14-19

APPENDIX K

CONCEPTUAL ALTERNATIVES



- HADDON AVENUE AND NEWTON AVENUE (MP 50.67)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - RECONSTRUCT CURB RAMP

SIDEWALK REPLACEMENT OUTSIDE OF EXISTING R.O.W. LIKELY REQUIRED

RECENTLY CONSTRUCTED IMPROVEMENTS
HADDON AVENUE GATEWAY PROJECT (TYP.)

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN
CAMDEN COUNTY

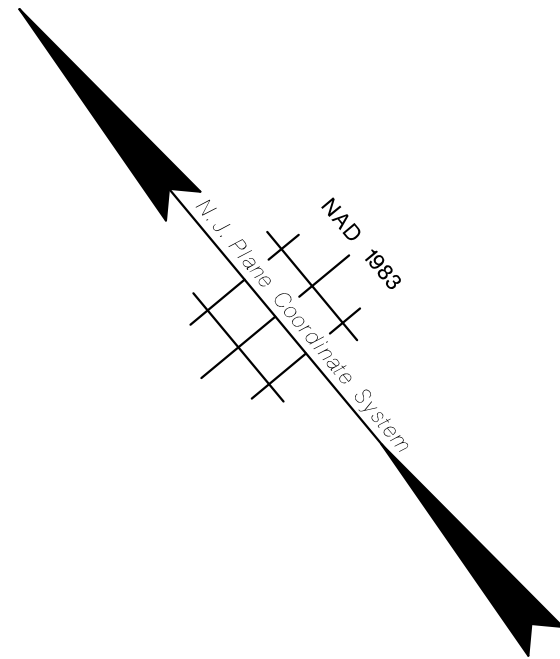
ALTERNATIVE 1



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



MATCH LINE A
SEE SHEET 2 OF 7



SEE SHEET 1 OF 7
MATCH LINE A

MATCH LINE B
SEE SHEET 3 OF 7

HADDON AVENUE AND MT. EPHRAIM AVENUE /LINE STREET (MP 50.54)
• TRAFFIC SIGNAL RECENTLY REMOVED BY OTHERS

HADDON AVENUE AND PINE STREET (MP 50.39)
• TRAFFIC SIGNAL RECENTLY INSTALLED BY OTHERS

RECENTLY CONSTRUCTED IMPROVEMENTS
HADDON AVENUE GATEWAY PROJECT (TYP.)

MEET EXISTING CROSS SECTION
PARTIAL R.O.W. TAKING REQUIRED

LEGEND



- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

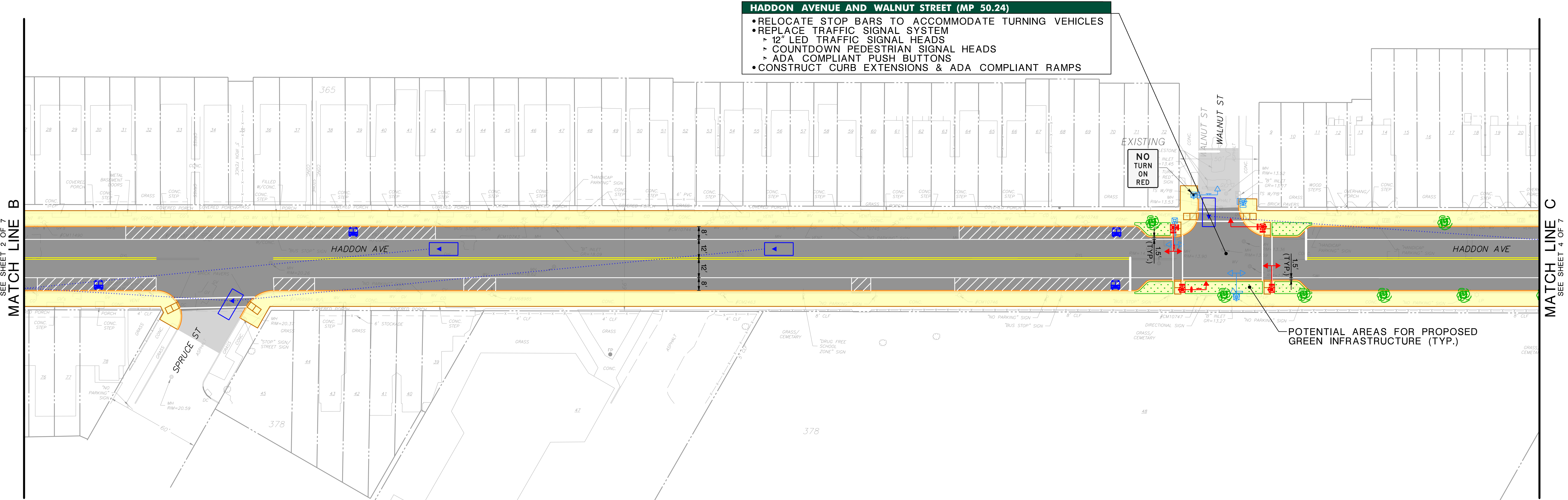
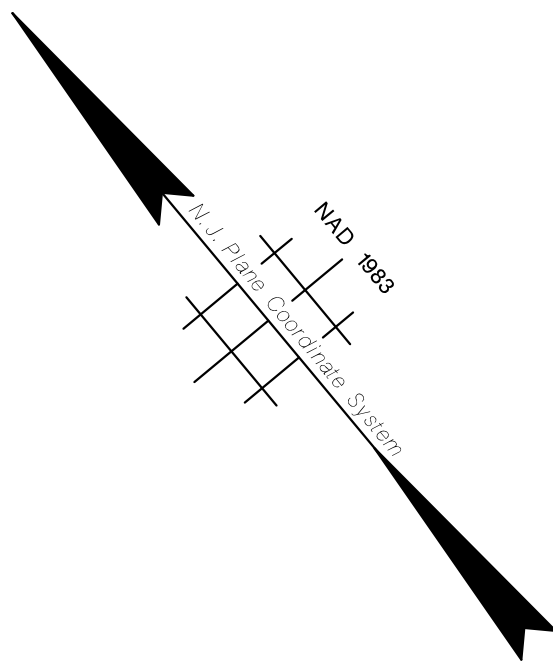
POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE
CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 1


Engineering and Construction Services



- HADDON AVENUE AND WALNUT STREET (MP 50.24)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - CONSTRUCT CURB EXTENSIONS & ADA COMPLIANT RAMPS

NO
TURN
ON
RED

POTENTIAL AREAS FOR PROPOSED
GREEN INFRASTRUCTURE (TYP.)

SEE SHEET 2 OF 7
MATCH LINE B

MATCH LINE C
SEE SHEET 4 OF 7

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE
CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

3

7

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

ALTERNATIVE 1

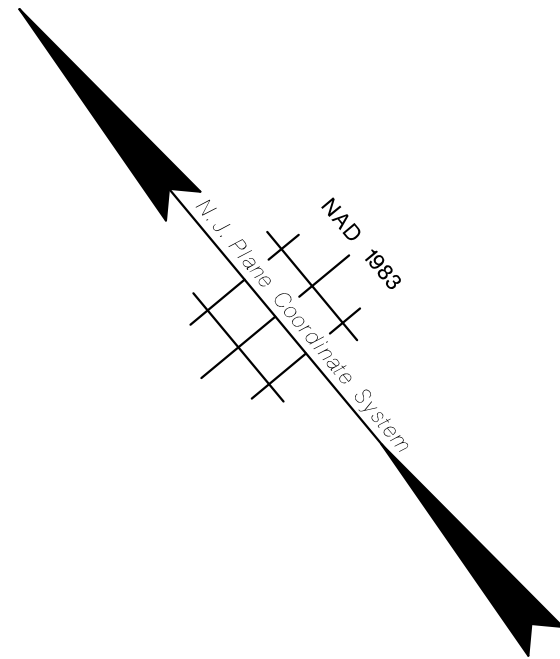


GPI

Greenman-Pedersen, Inc.

Engineering and Construction Services

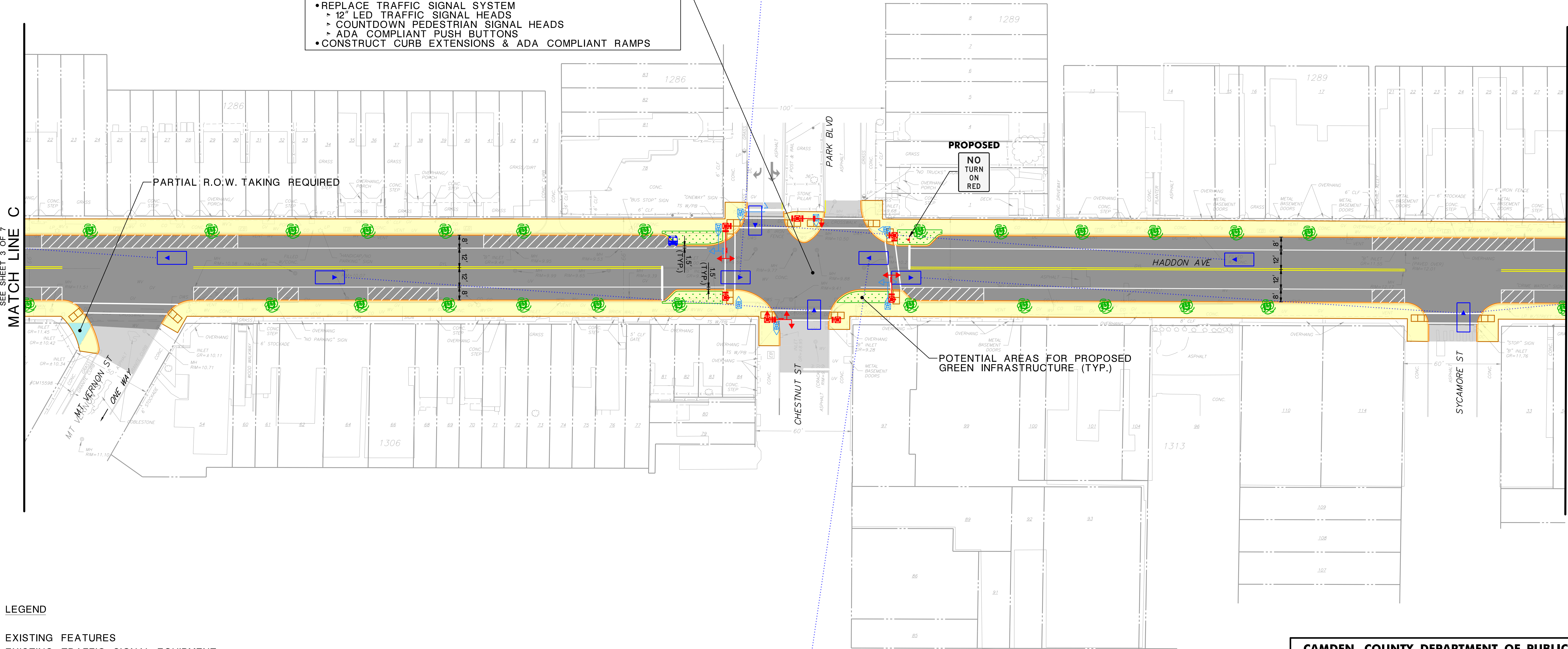
30'030'60'



- HADDON AVENUE AND CHESTNUT STREET /PARK BOULEVARD (MP 50.11)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - CONSTRUCT CURB EXTENSIONS & ADA COMPLIANT RAMPS

SEE SHEET 3 OF 7
MATCH LINE C

MATCH LINE D
SEE SHEET 5 OF 7



LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:

PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 1



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



HADDON AVENUE AND KAIGHN AVENUE (MP 49.92)

- CONSTRUCT CHANNELIZED RIGHT TURNS WITH ISLANDS
- REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
- CONSTRUCT CURB EXTENSIONS & ADA COMPLIANT RAMPS

HADDON AVENUE AND WILDWOOD AVENUE (MP 49.97)

- REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

POTENTIAL AREAS FOR PROPOSED GREEN INFRASTRUCTURE (TYP.)

PARTIAL R.O.W. TAKING REQUIRED

PARTIAL R.O.W. TAKING REQUIRED

SIDEWALK REPLACEMENT OUTSIDE OF EXISTING R.O.W. LIKELY REQUIRED

SEE SHEET 4 OF 7
MATCH LINE D

MATCH LINE E
SEE SHEET 6 OF 7

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE



NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

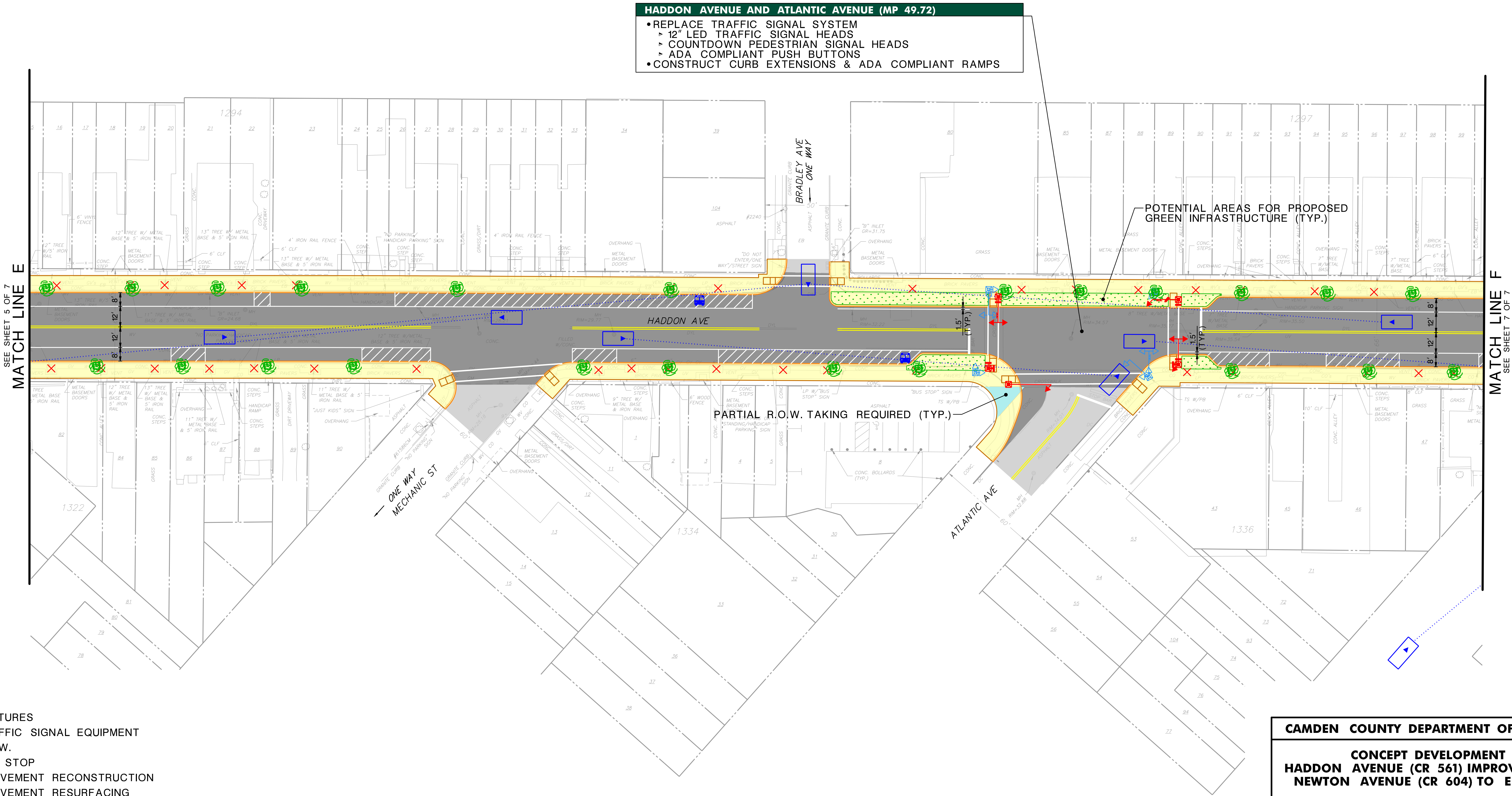
CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE
CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 1



30' 0 30' 60'



LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

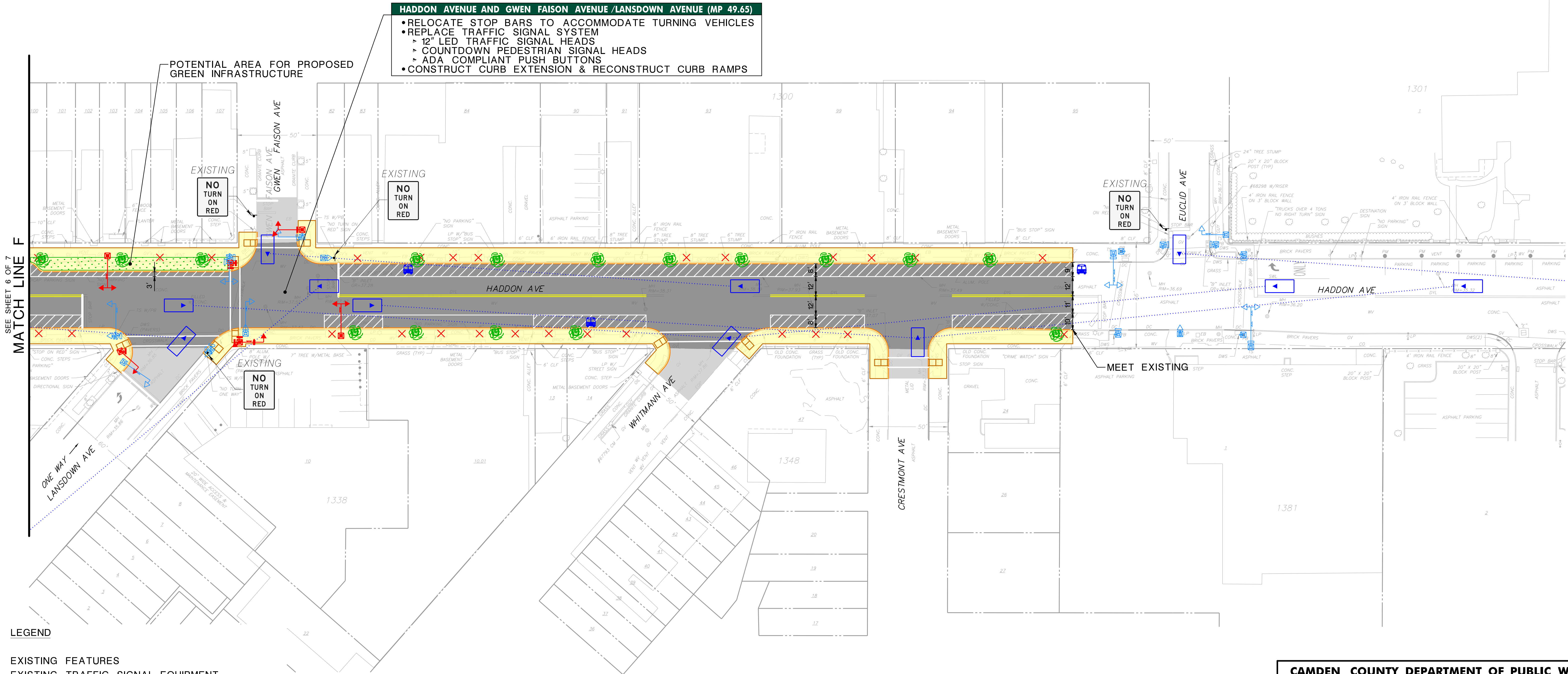
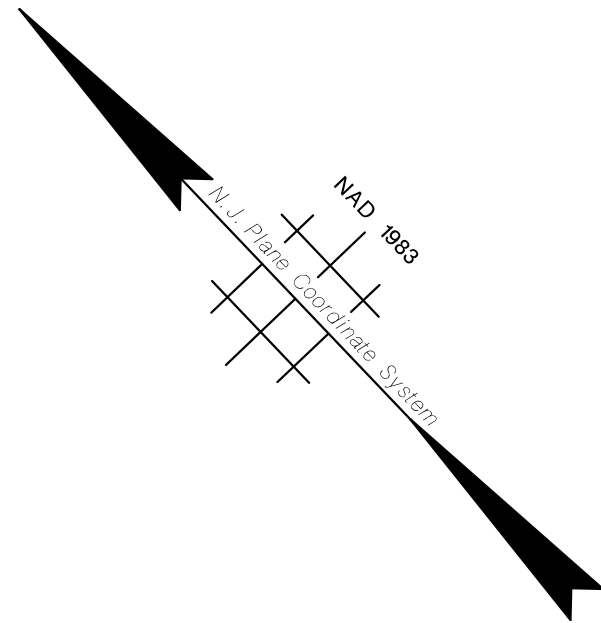
CAMDEN COUNTY

ALTERNATIVE 1

GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

30'030'60'



- LEGEND
- EXISTING FEATURES
 - EXISTING TRAFFIC SIGNAL EQUIPMENT
 - EXISTING R.O.W.
 - EXISTING BUS STOP
 - PROPOSED PAVEMENT RECONSTRUCTION
 - PROPOSED PAVEMENT RESURFACING
 - PROPOSED CURB
 - PROPOSED SIDEWALK
 - PROPOSED STRIPING
 - PROPOSED TRAFFIC SIGNAL EQUIPMENT
 - PROPOSED TREE REMOVAL
 - PROPOSED TREE PLANTING
 - TITLE 39 AND BUS STOP PARKING RESTRICTIONS
 - INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

ALTERNATIVE 1

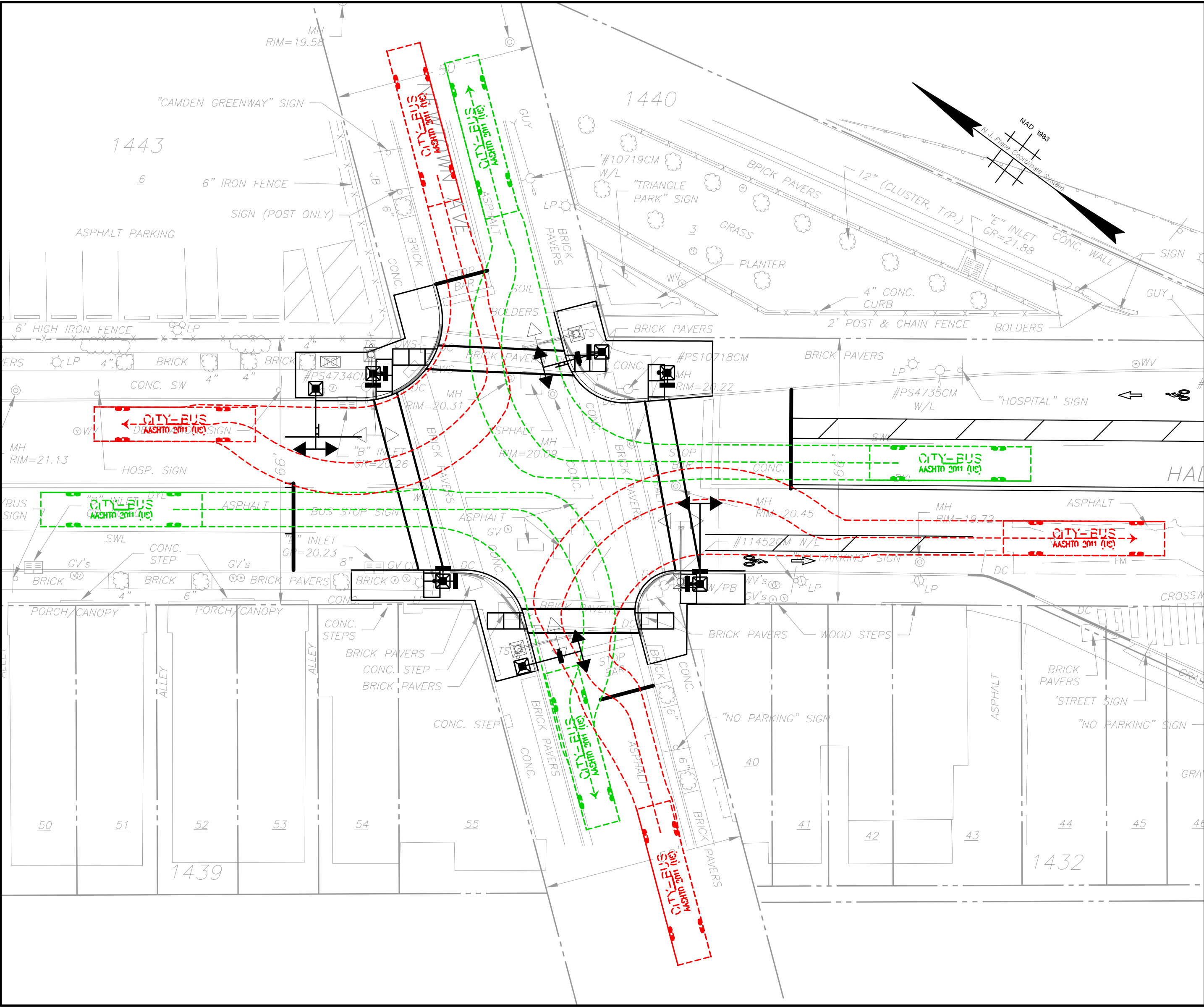


GPI Greenman-Pedersen, Inc.

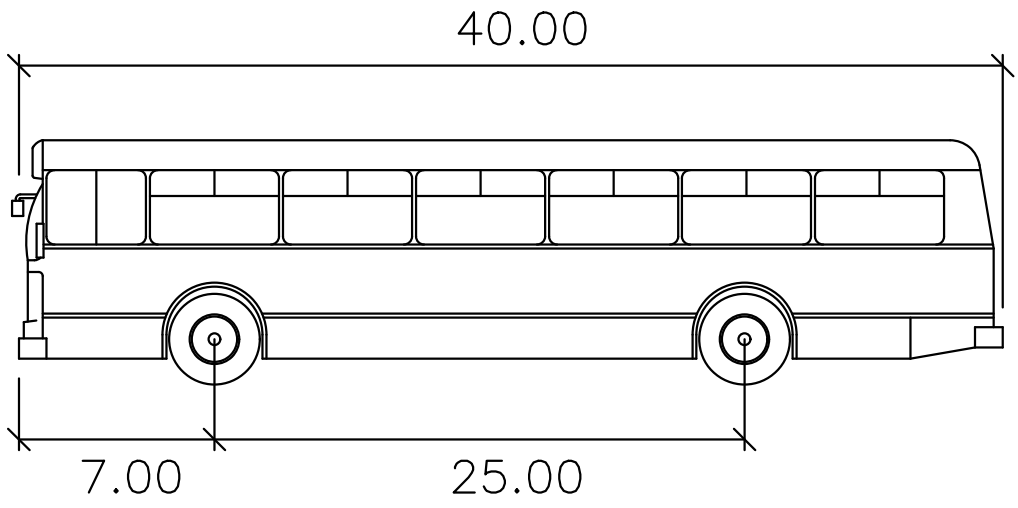
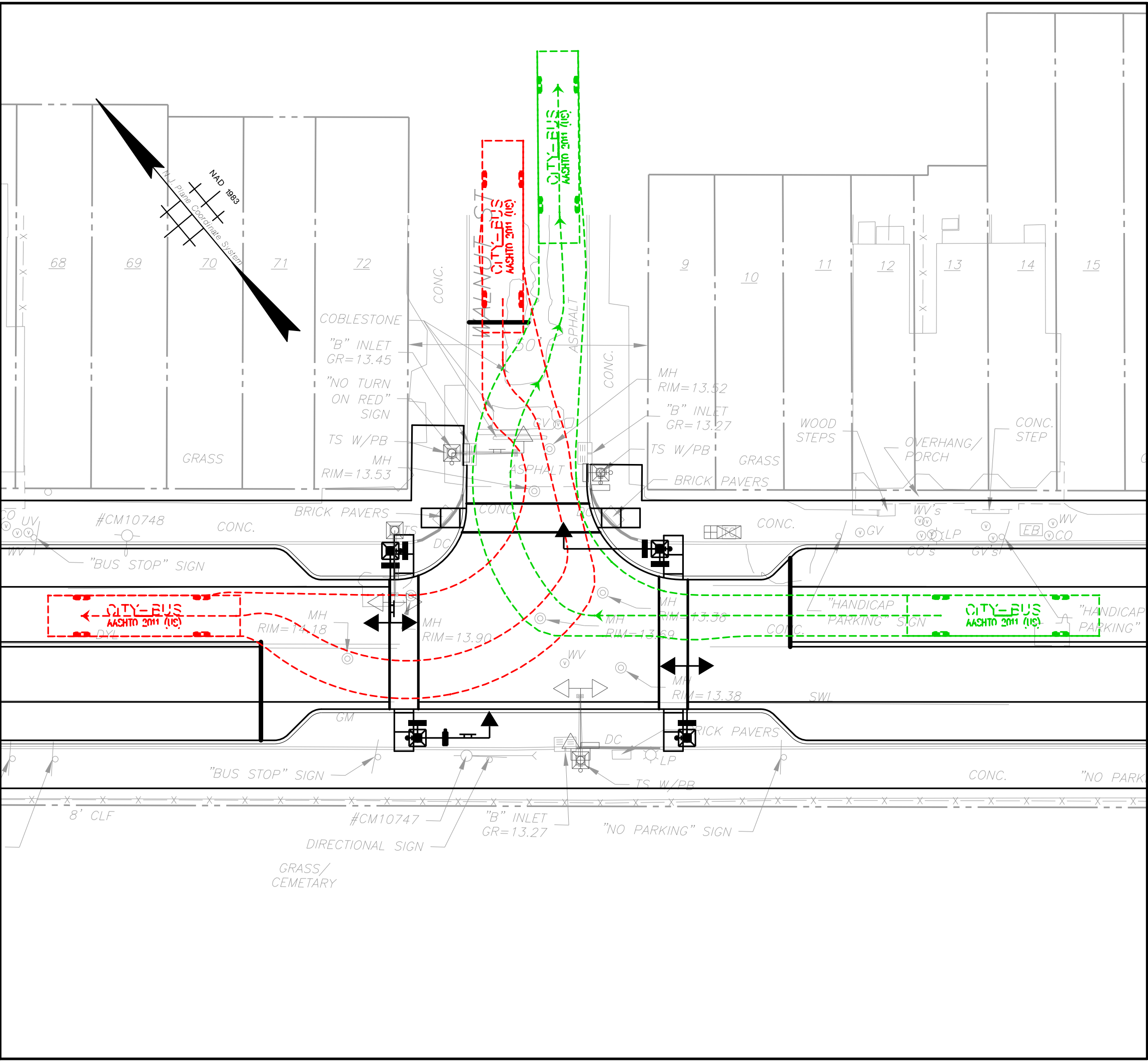
Engineering and Construction Services

30'030'60'

NEWTON AVENUE



WALNUT STREET



CITY-BUS	
feet	
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

- LEGEND
- EXISTING FEATURES
 - PROPOSED FEATURES
 - AUTOTURN TEMPLATE A
 - AUTOTURN TEMPLATE B

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN
CAMDEN COUNTY

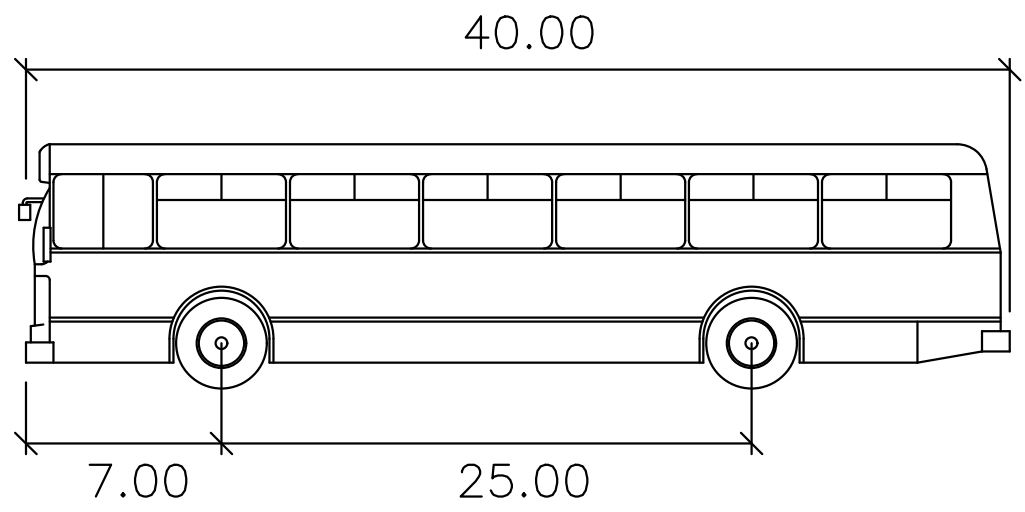
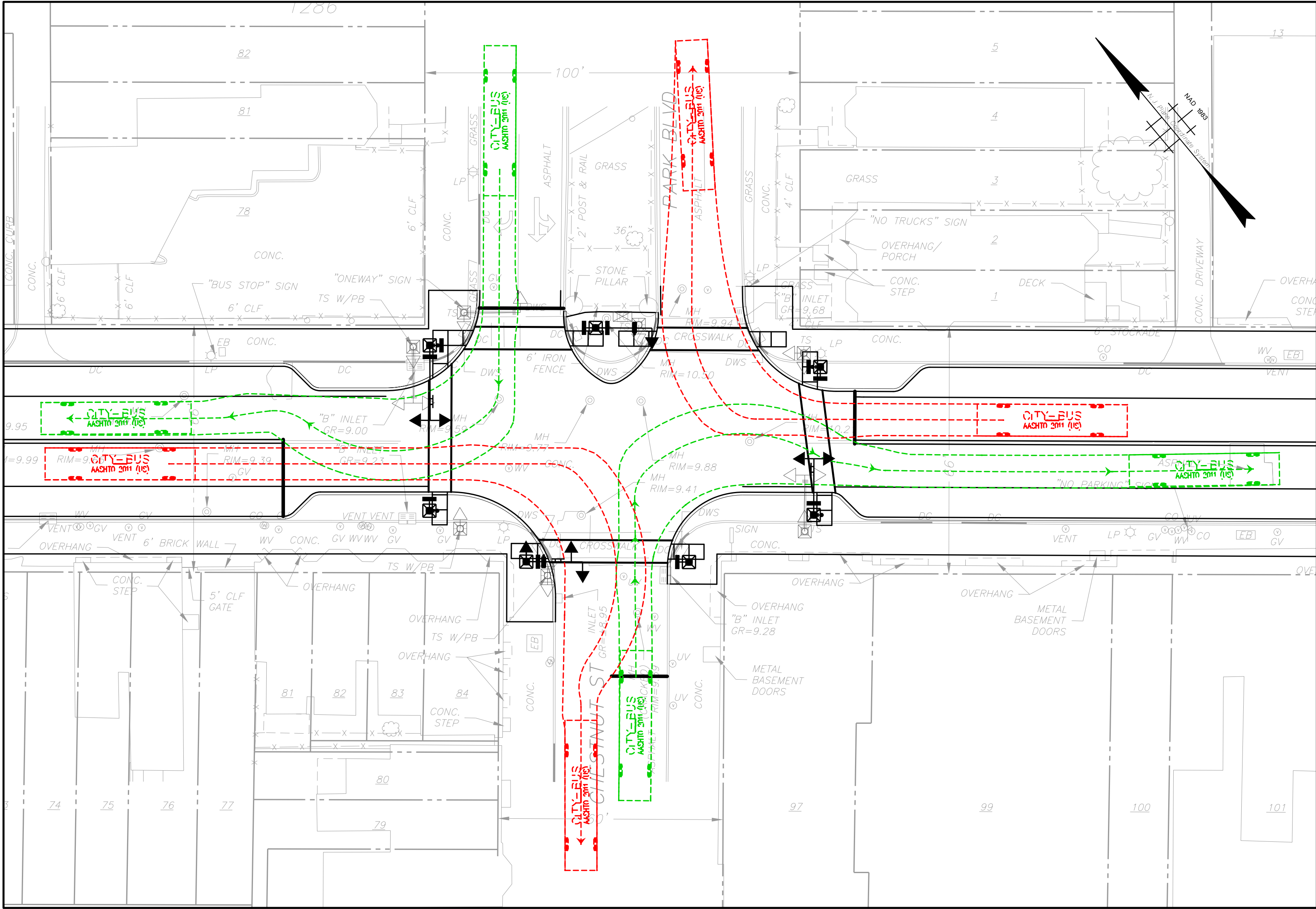
ALTERNATIVE 1 - AUTOTURN



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



PARK BOULEVARD & CHESTNUT STREET



CITY-BUS	
feet	
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

- LEGEND
- EXISTING FEATURES
 - PROPOSED FEATURES
 - AUTOTURN TEMPLATE A
 - AUTOTURN TEMPLATE B

24

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY


ALTERNATIVE 1 - AUTOTURN



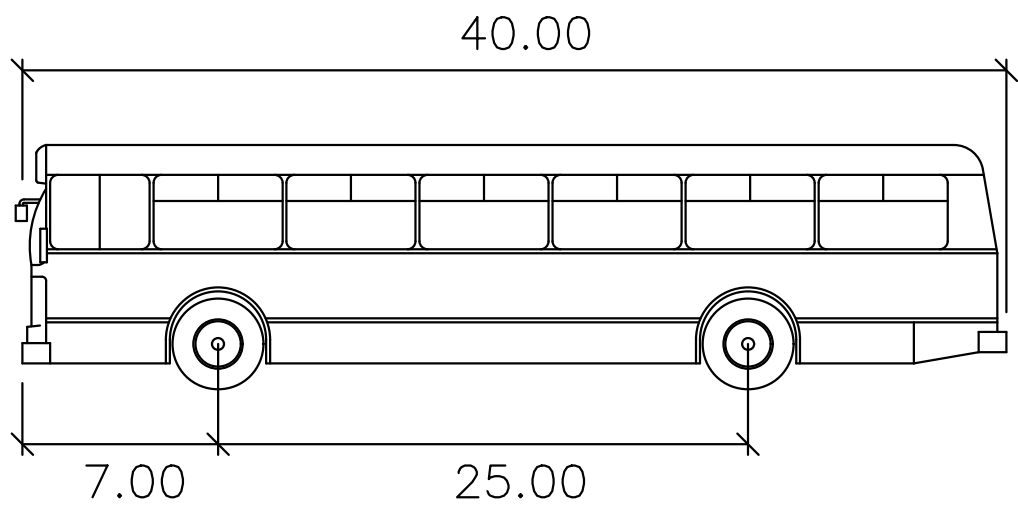
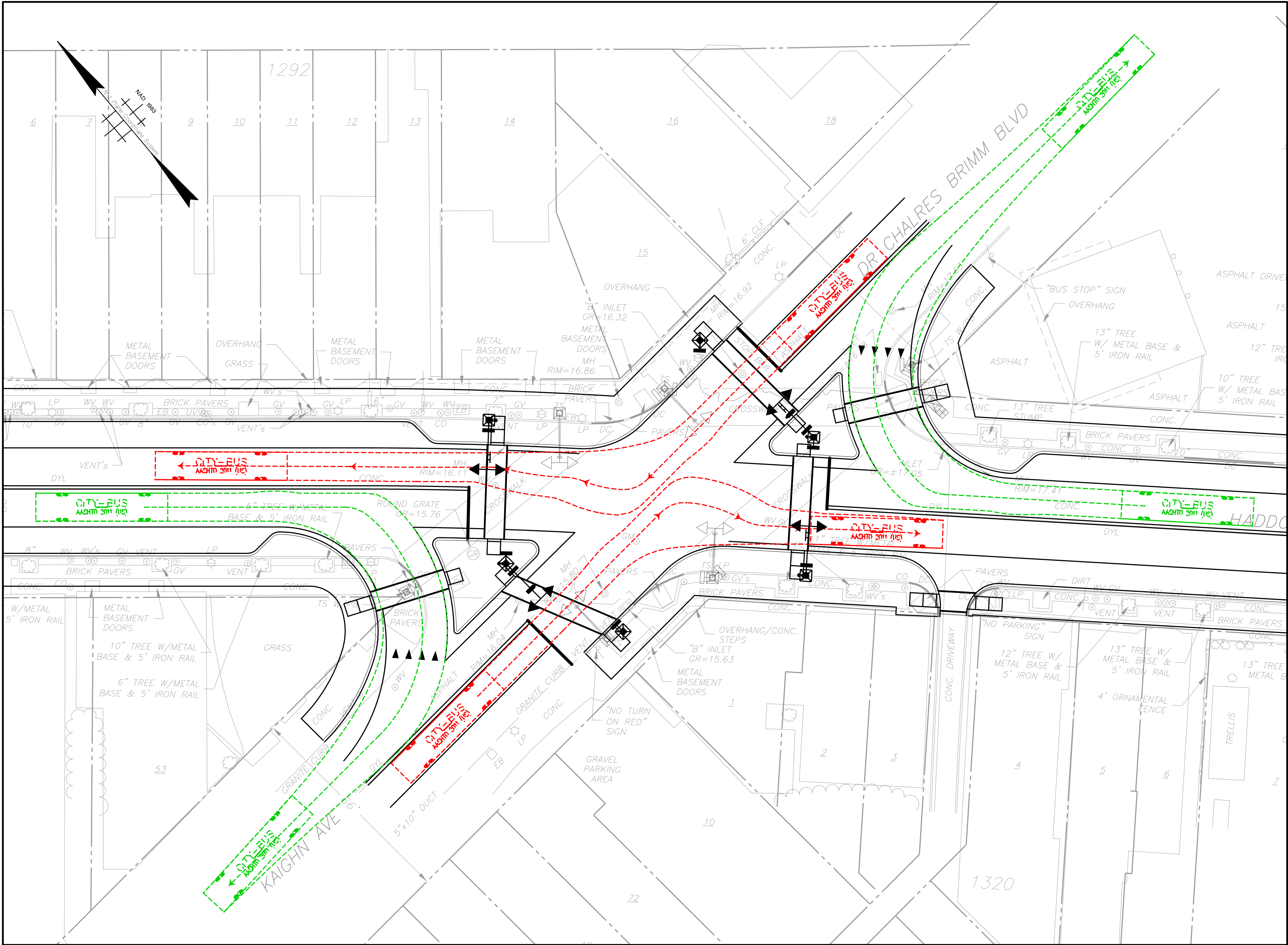
GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

20'020'40'



KAIGHN AVENUE



CITY-BUS	
feet	
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

- LEGEND
- EXISTING FEATURES
 - PROPOSED FEATURES
 - AUTOTURN TEMPLATE A
 - AUTOTURN TEMPLATE B

3

4

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE
CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 1 - AUTOTURN


GPI

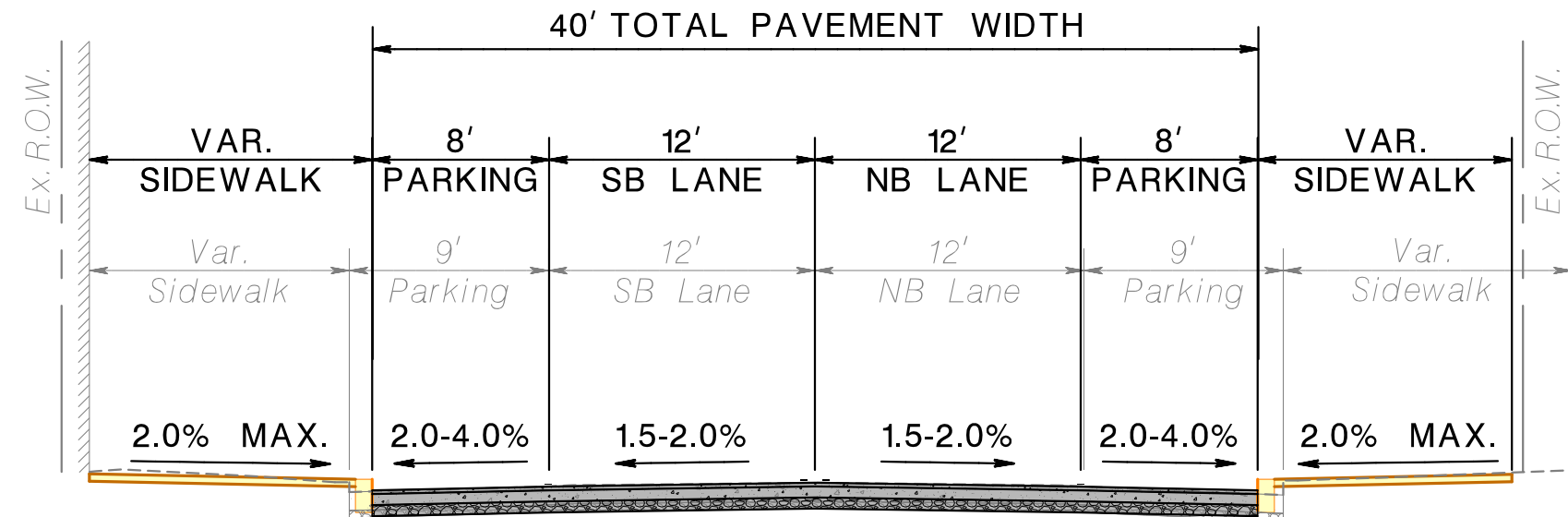
Greenman-Pedersen, Inc.

Engineering and Construction Services

20'020'40'

[illegible]

 EXISTING FEATURES
 PROPOSED FEATURES
 AUTOTURN TEMPLATE A
 AUTOTURN TEMPLATE B




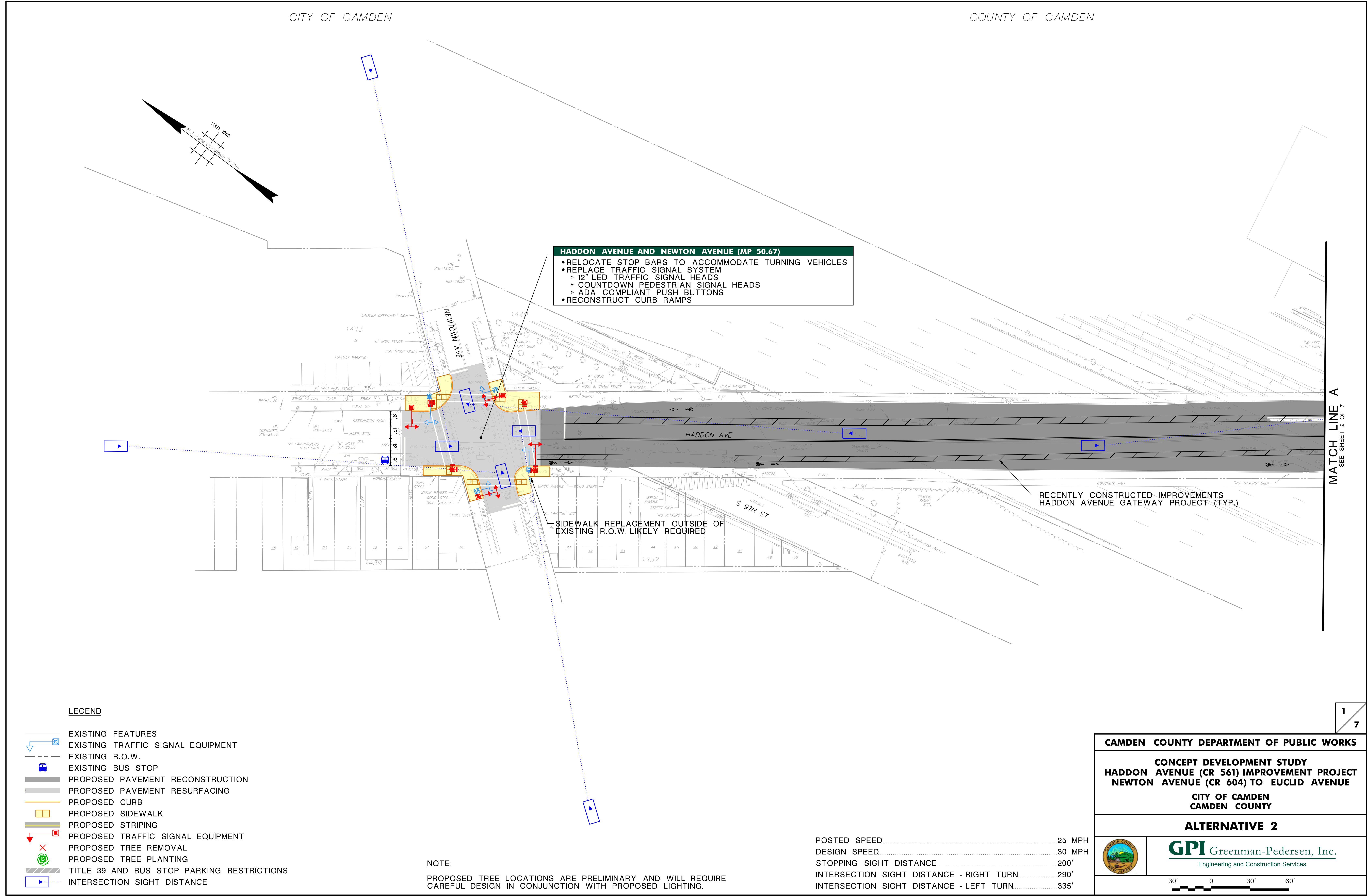
ALTERNATIVE 1

N.T.S.

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- CONSTRUCT SEPARATE STORMWATER SYSTEM
- LINE EXISTING COMBINED SEWER PIPE FOR SANITARY SEWER ONLY

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS	
CONCEPT DEVELOPMENT STUDY HADDON AVENUE (CR 561) IMPROVEMENT PROJECT NEWTON AVENUE (CR 604) TO EUCLID AVENUE CITY OF CAMDEN CAMDEN COUNTY	
ALTERNATIVE 1 CROSS SECTION	
	GPI Greenman-Pedersen, Inc. Engineering and Construction Services
N.T.S.	



LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

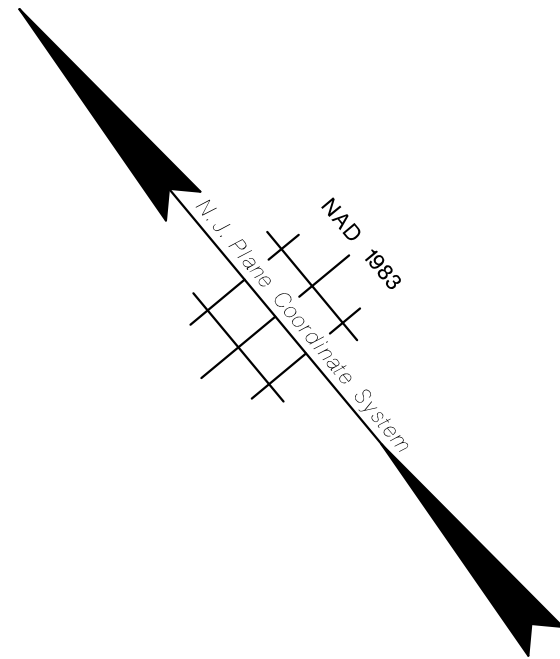
ALTERNATIVE 2

GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

30'030'60'

MATCH LINE A
SEE SHEET 2 OF 7



SEE SHEET 1 OF 7
MATCH LINE A

MATCH LINE B
SEE SHEET 3 OF 7

HADDON AVENUE AND MT. EPHRAIM AVENUE /LINE STREET (MP 50.54)
• TRAFFIC SIGNAL RECENTLY REMOVED BY OTHERS

HADDON AVENUE AND PINE STREET (MP 50.39)
• TRAFFIC SIGNAL RECENTLY INSTALLED BY OTHERS

RECENTLY CONSTRUCTED IMPROVEMENTS
HADDON AVENUE GATEWAY PROJECT (TYP.)

MEET EXISTING CROSS SECTION
PARTIAL R.O.W. TAKING REQUIRED

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:

PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

**CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE**

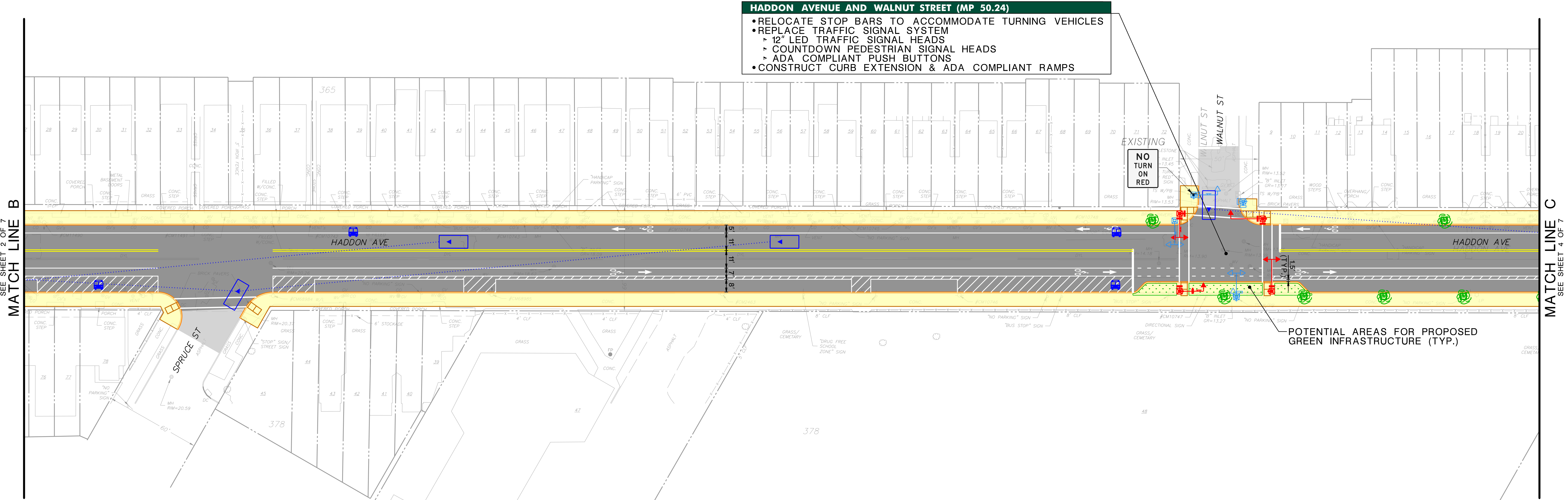
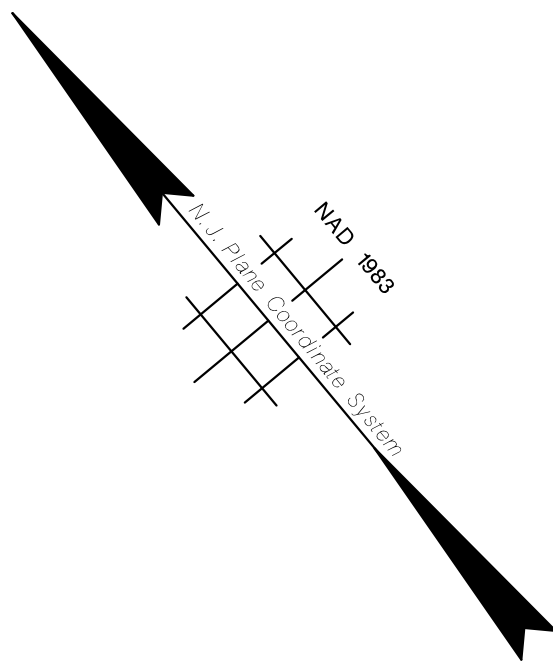
**CITY OF CAMDEN
CAMDEN COUNTY**

ALTERNATIVE 2



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services





LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

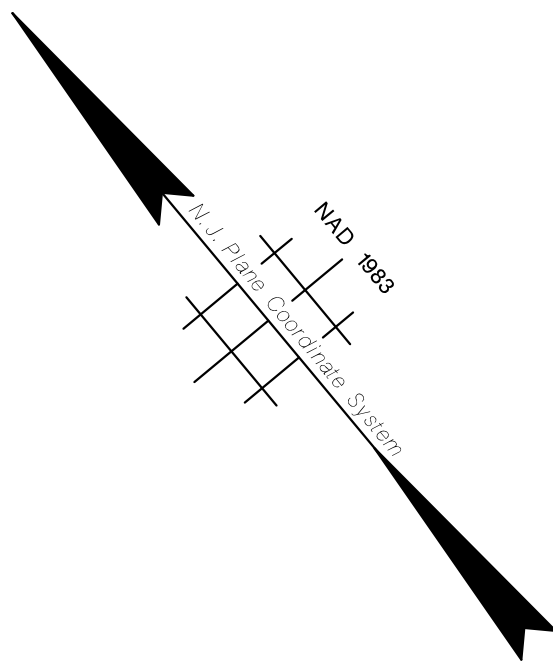
ALTERNATIVE 2



GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

30'030'60'



- HADDON AVENUE AND CHESTNUT STREET /PARK BOULEVARD (MP 50.11)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - CONSTRUCT CURB EXTENSIONS & ADA COMPLIANT RAMPS

SEE SHEET 3 OF 7
MATCH LINE C

MATCH LINE D
SEE SHEET 5 OF 7

- LEGEND**
- EXISTING FEATURES
 - EXISTING TRAFFIC SIGNAL EQUIPMENT
 - EXISTING R.O.W.
 - EXISTING BUS STOP
 - PROPOSED PAVEMENT RECONSTRUCTION
 - PROPOSED PAVEMENT RESURFACING
 - PROPOSED CURB
 - PROPOSED SIDEWALK
 - PROPOSED STRIPING
 - PROPOSED TRAFFIC SIGNAL EQUIPMENT
 - PROPOSED TREE REMOVAL
 - PROPOSED TREE PLANTING
 - TITLE 39 AND BUS STOP PARKING RESTRICTIONS
 - INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

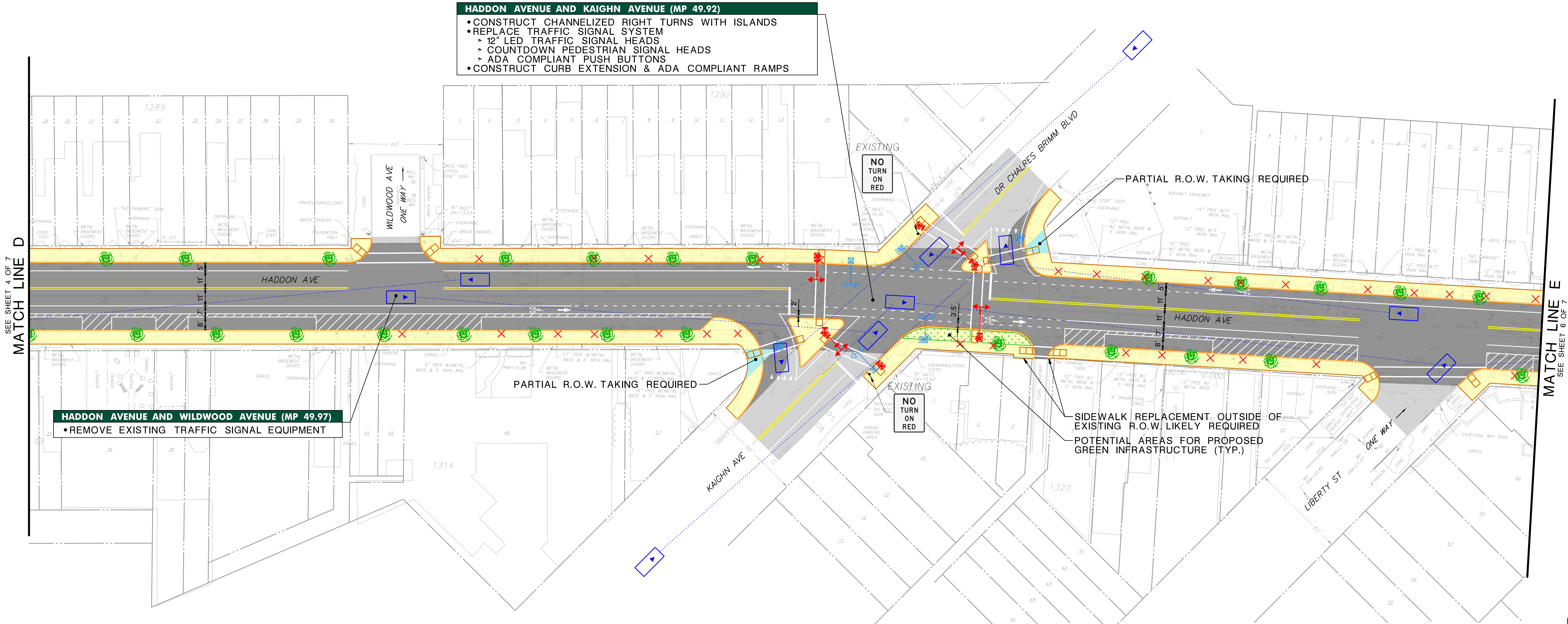
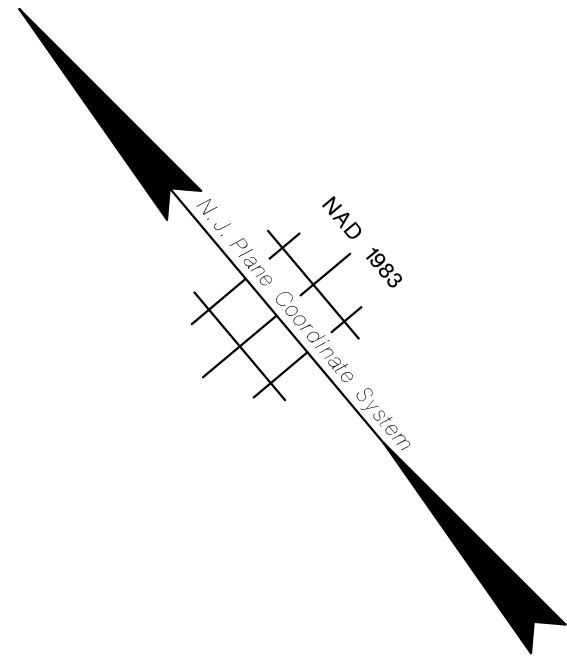
ALTERNATIVE 2



GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

30'030'60'



HADDON AVENUE AND KAIGHN AVENUE (MP 49.92)

- CONSTRUCT CHANNELIZED RIGHT TURNS WITH ISLANDS
- REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
- CONSTRUCT CURB EXTENSION & ADA COMPLIANT RAMPS

HADDON AVENUE AND WILDWOOD AVENUE (MP 49.97)

- REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

NOTE:

PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

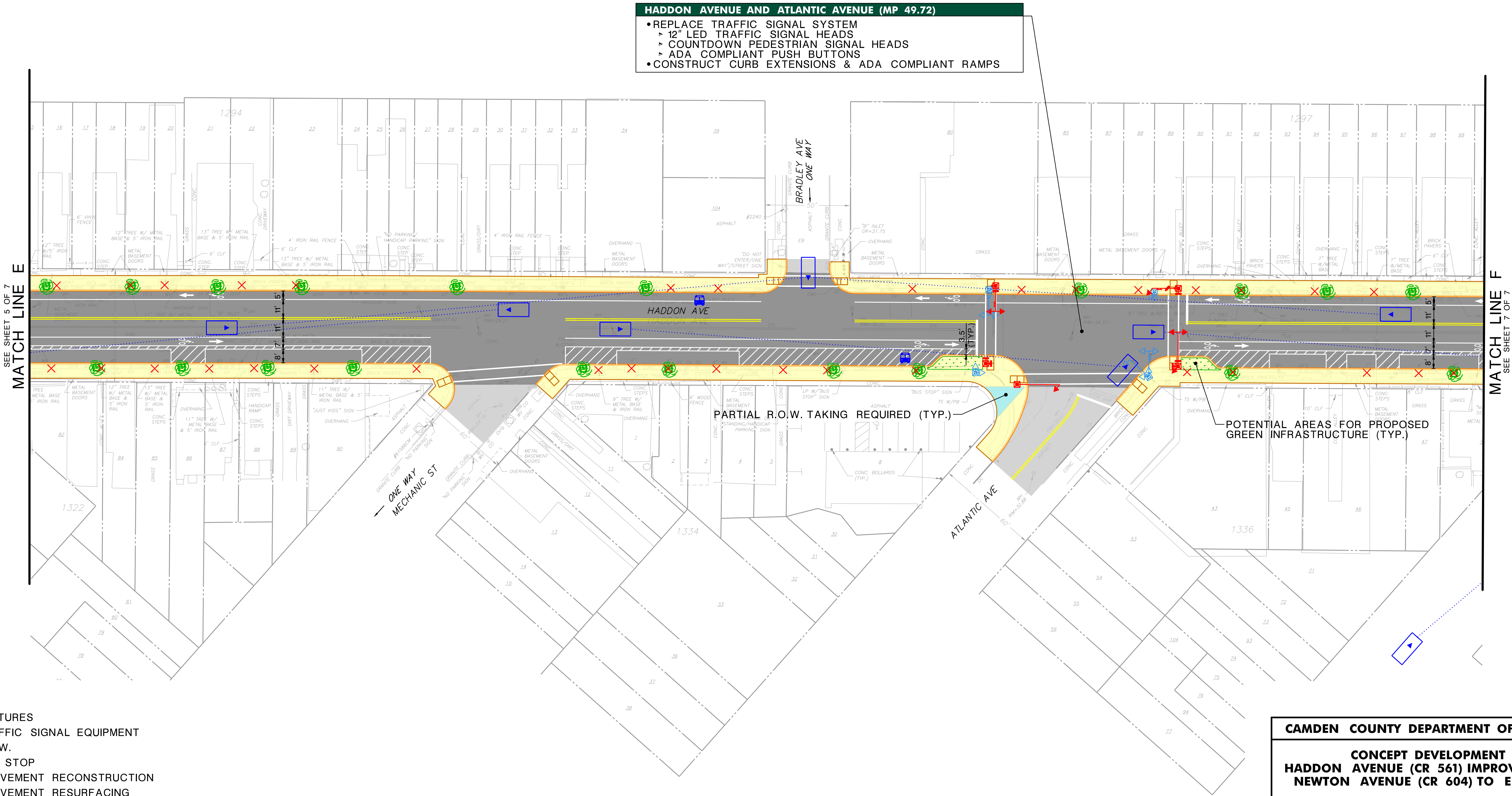
CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 2



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services






CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

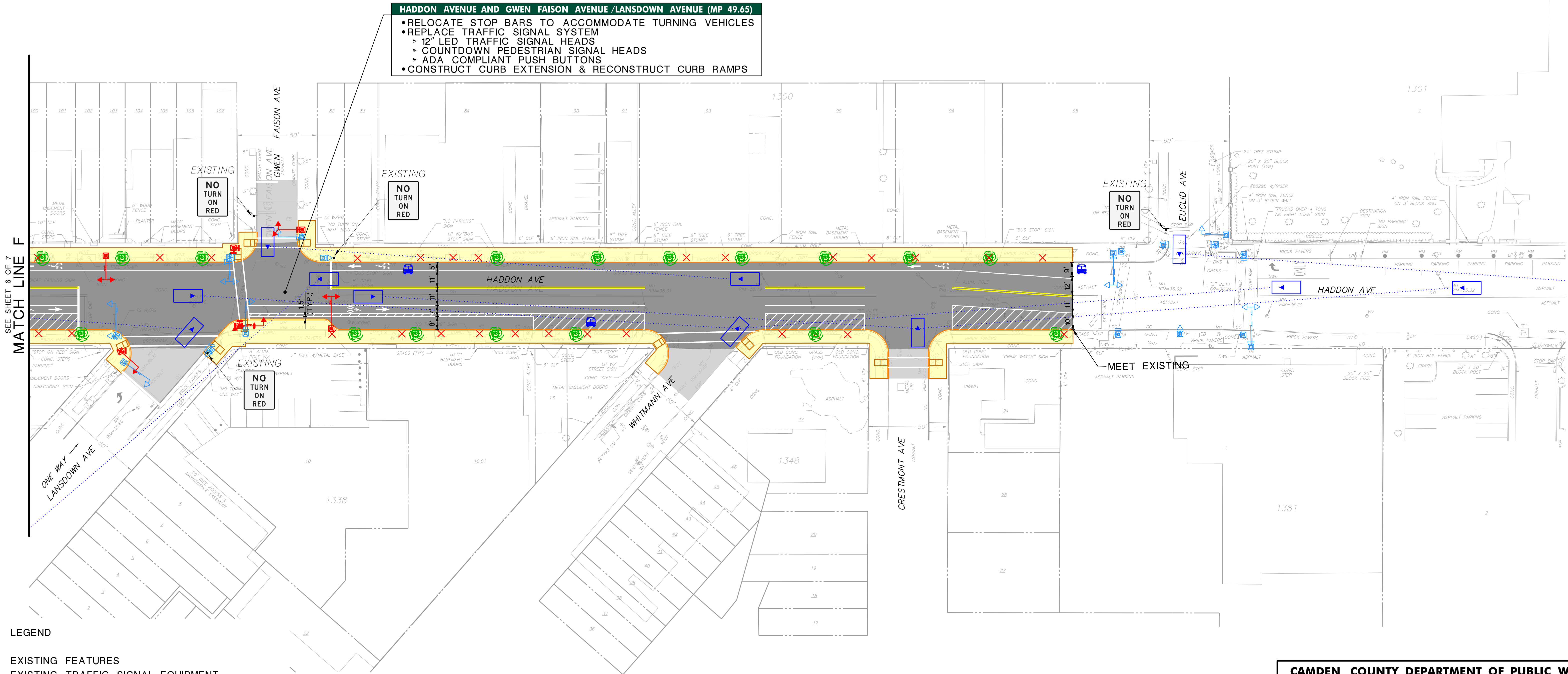
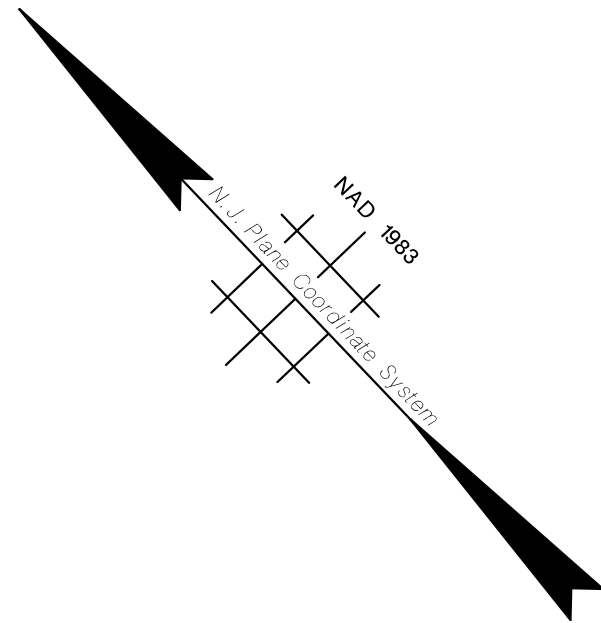
CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 2

 **GPI** Greenman-Pedersen, Inc.
Engineering and Construction Services

30' 0 30' 60'



- LEGEND
- EXISTING FEATURES
 - EXISTING TRAFFIC SIGNAL EQUIPMENT
 - EXISTING R.O.W.
 - EXISTING BUS STOP
 - PROPOSED PAVEMENT RECONSTRUCTION
 - PROPOSED PAVEMENT RESURFACING
 - PROPOSED CURB
 - PROPOSED SIDEWALK
 - PROPOSED STRIPING
 - PROPOSED TRAFFIC SIGNAL EQUIPMENT
 - PROPOSED TREE REMOVAL
 - PROPOSED TREE PLANTING
 - TITLE 39 AND BUS STOP PARKING RESTRICTIONS
 - INTERSECTION SIGHT DISTANCE

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY AND WILL REQUIRE CAREFUL DESIGN IN CONJUNCTION WITH PROPOSED LIGHTING.

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

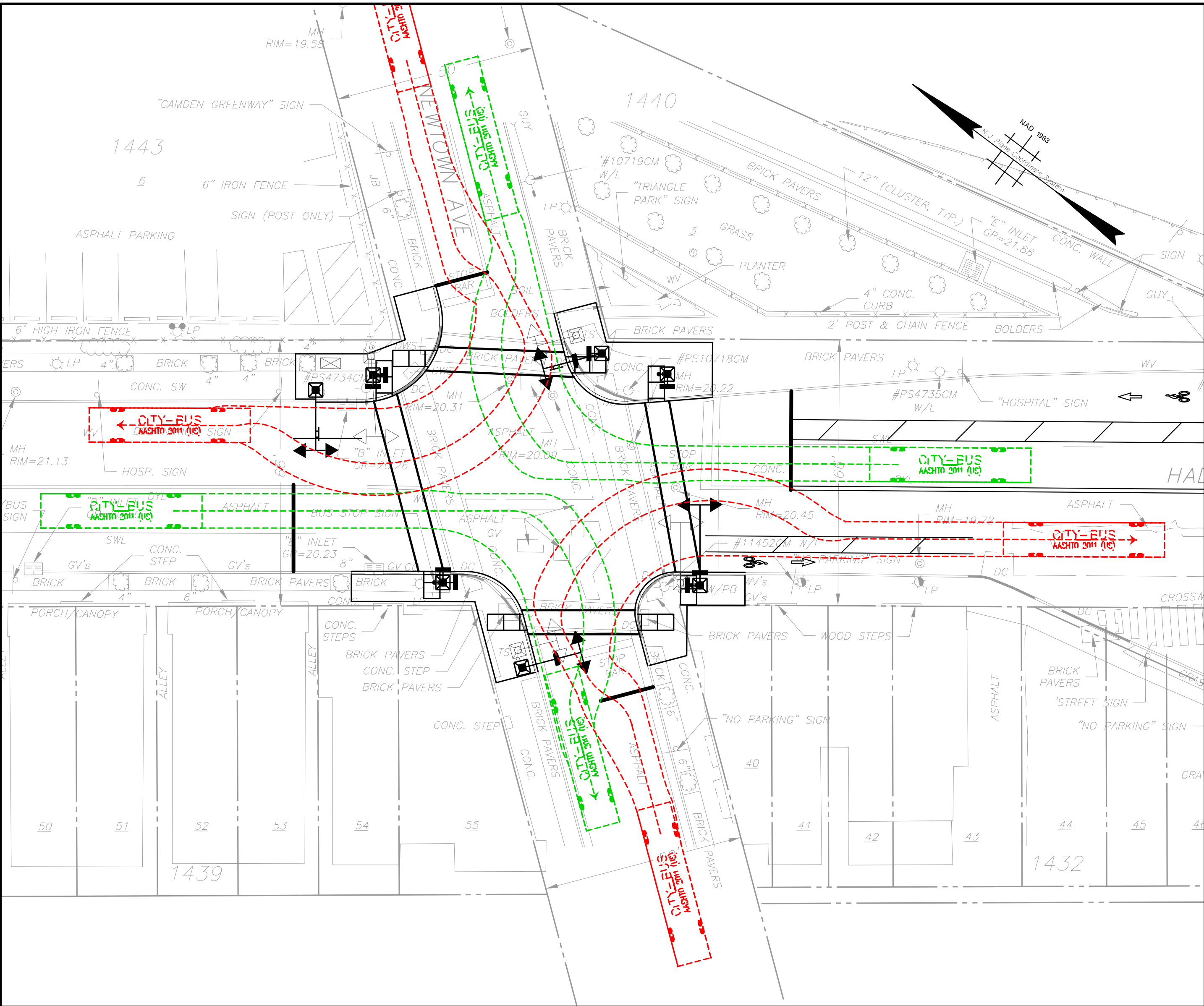
ALTERNATIVE 2

GPI Greenman-Pedersen, Inc.

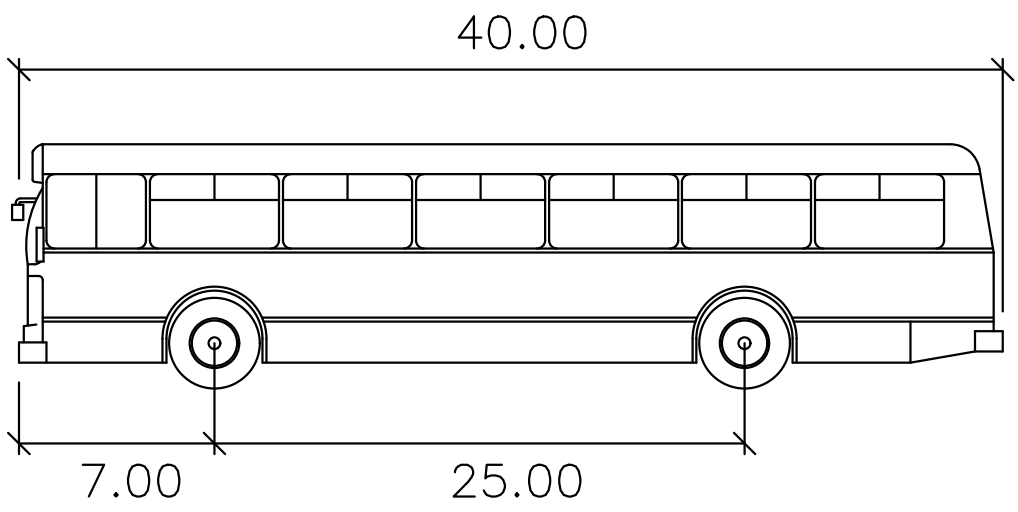
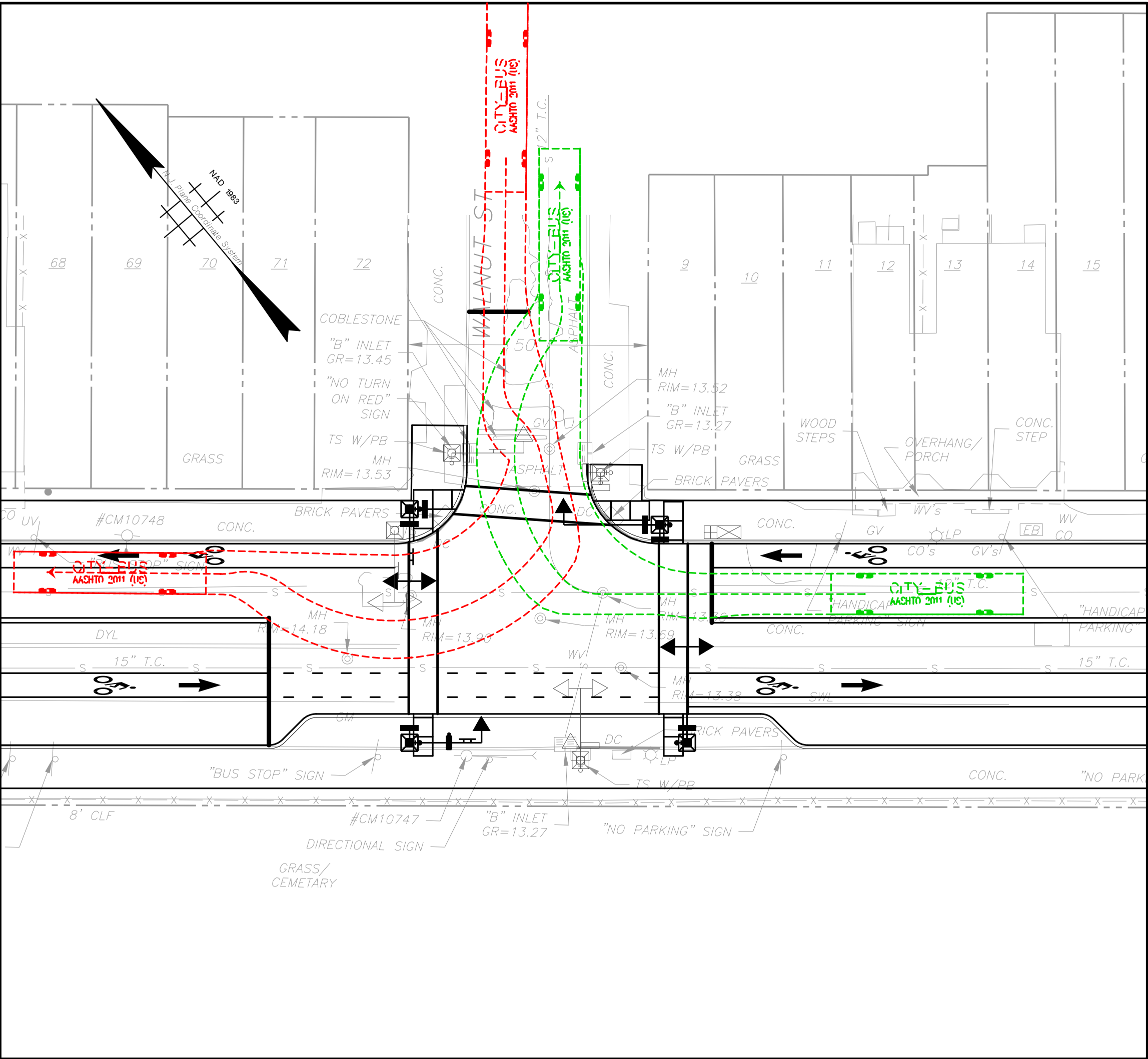
Engineering and Construction Services

30'030'60'

NEWTON AVENUE



WALNUT STREET



CITY-BUS
feet

Width : 8.50
Track : 8.50
Lock to Lock Time : 6.0
Steering Angle : 41.4

LEGEND

- EXISTING FEATURES
- PROPOSED FEATURES
- AUTOTURN TEMPLATE A
- AUTOTURN TEMPLATE B

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN
CAMDEN COUNTY

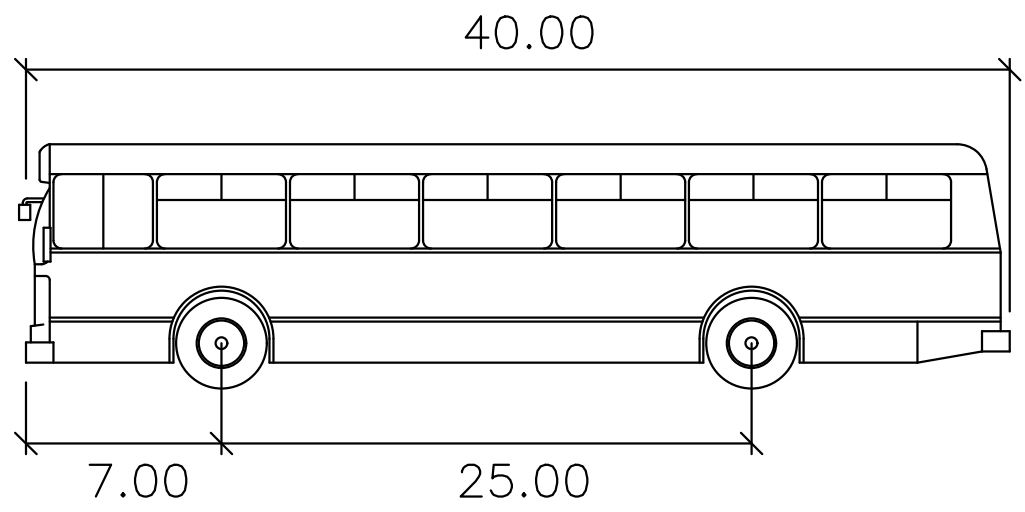
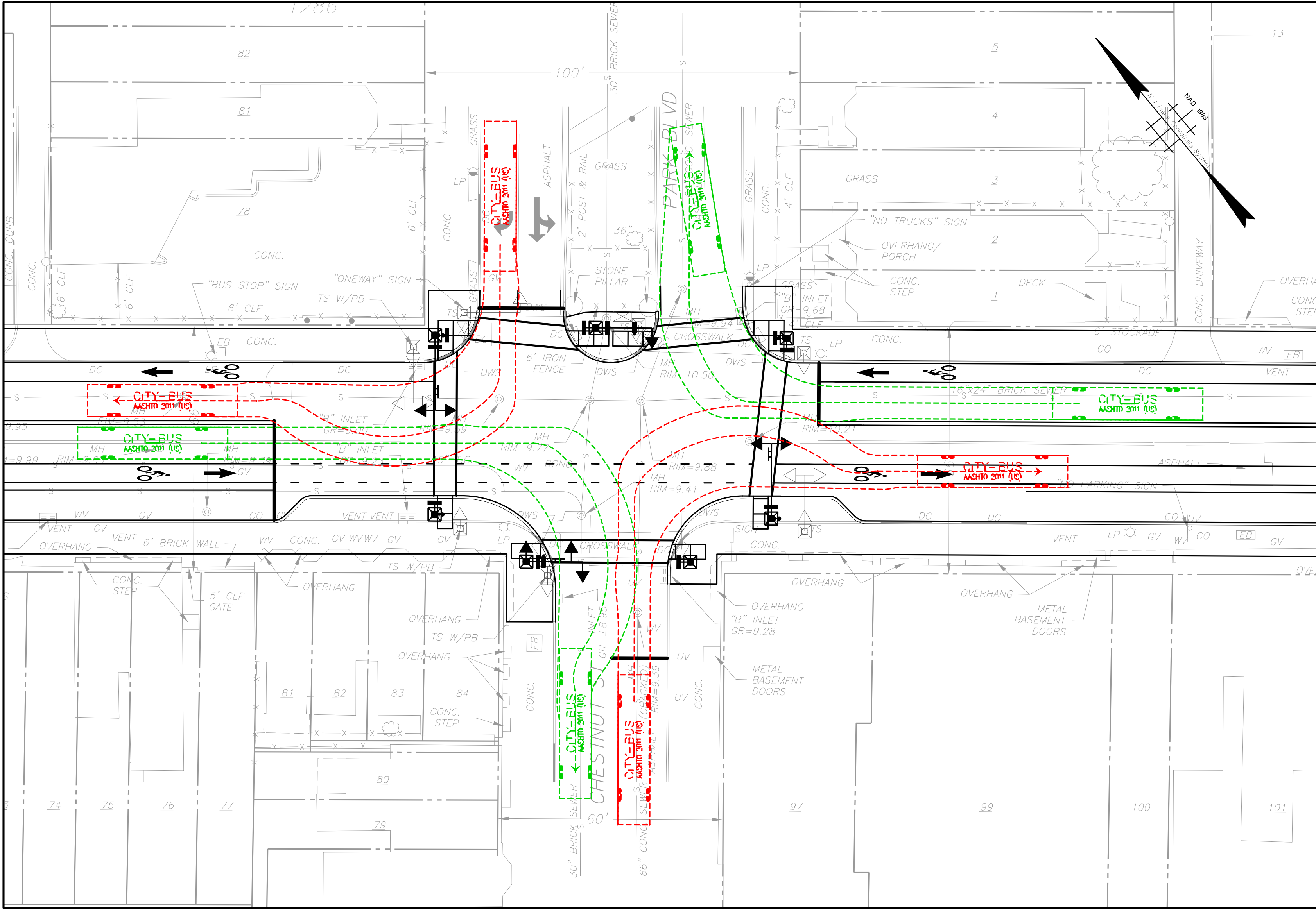
ALTERNATIVE 2 - AUTOTURN



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



PARK BOULEVARD & CHESTNUT STREET



CITY-BUS	
feet	
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

LEGEND	
	EXISTING FEATURES
	PROPOSED FEATURES
	AUTOTURN TEMPLATE A
	AUTOTURN TEMPLATE B


2
4

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE


CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 2 - AUTOTURN

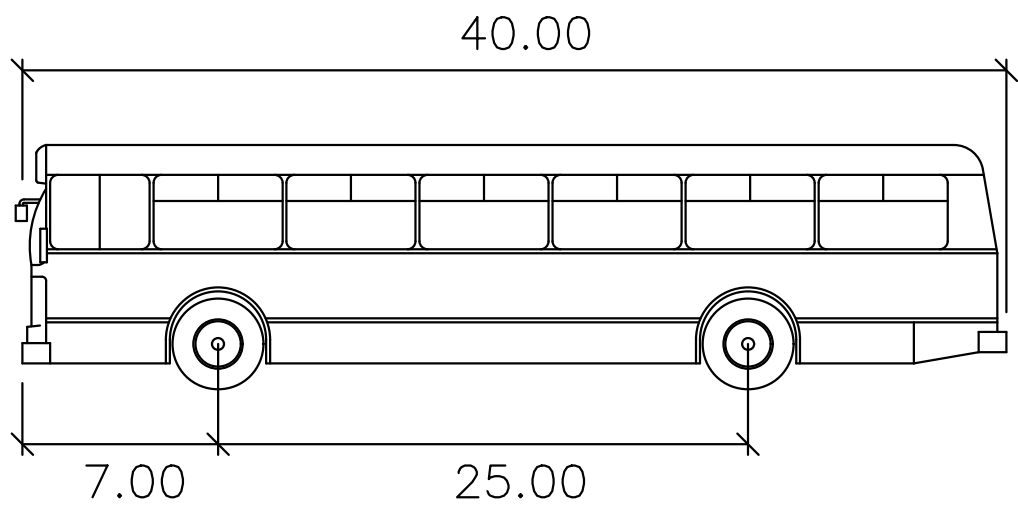
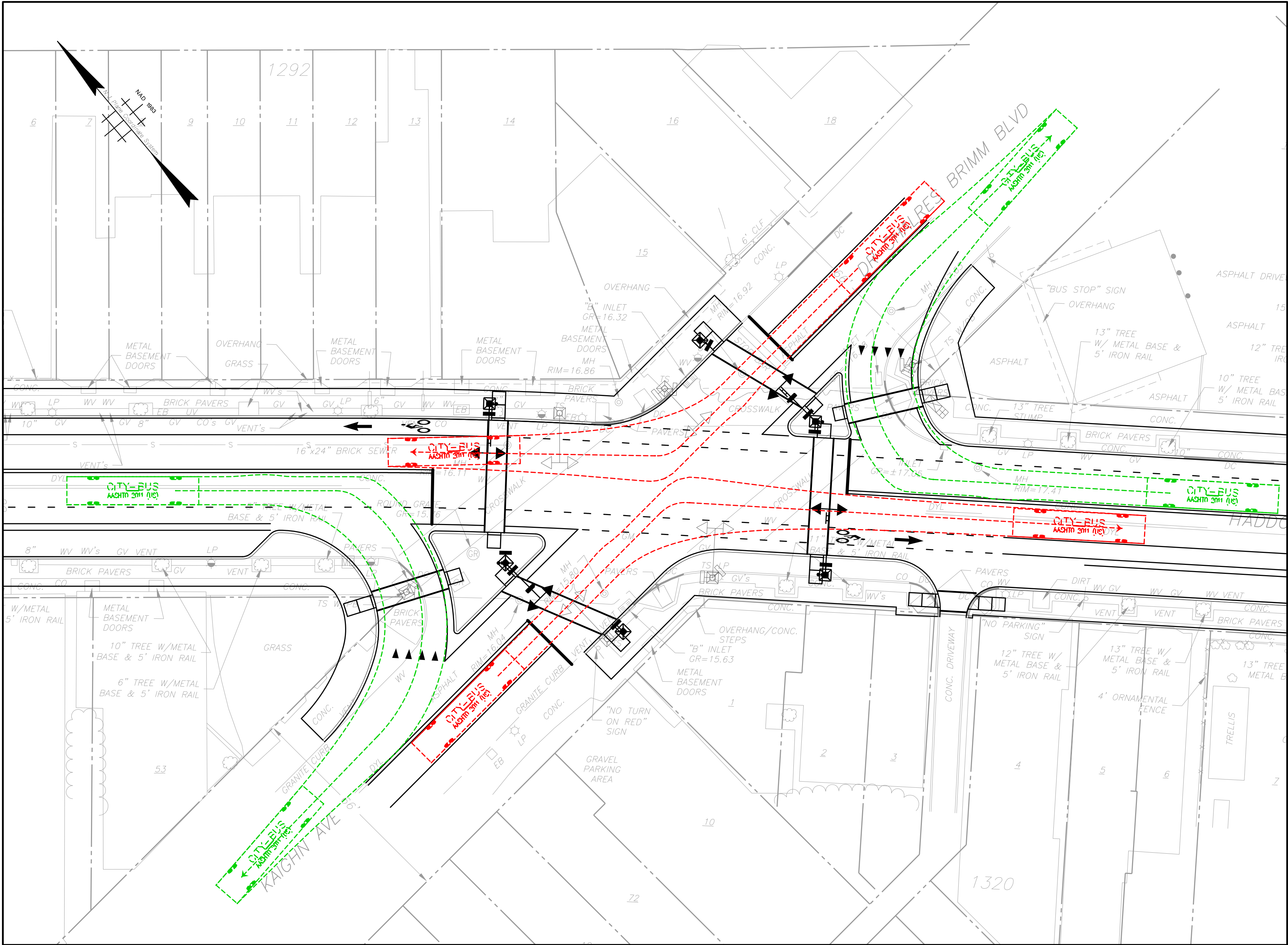


GPI Greenman-Pedersen, Inc.

Engineering and Construction Services



KAIGHN AVENUE



CITY-BUS	
feet	
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

- LEGEND
- EXISTING FEATURES
 - PROPOSED FEATURES
 - AUTOTURN TEMPLATE A
 - AUTOTURN TEMPLATE B

3

4

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

ALTERNATIVE 2 - AUTOTURN

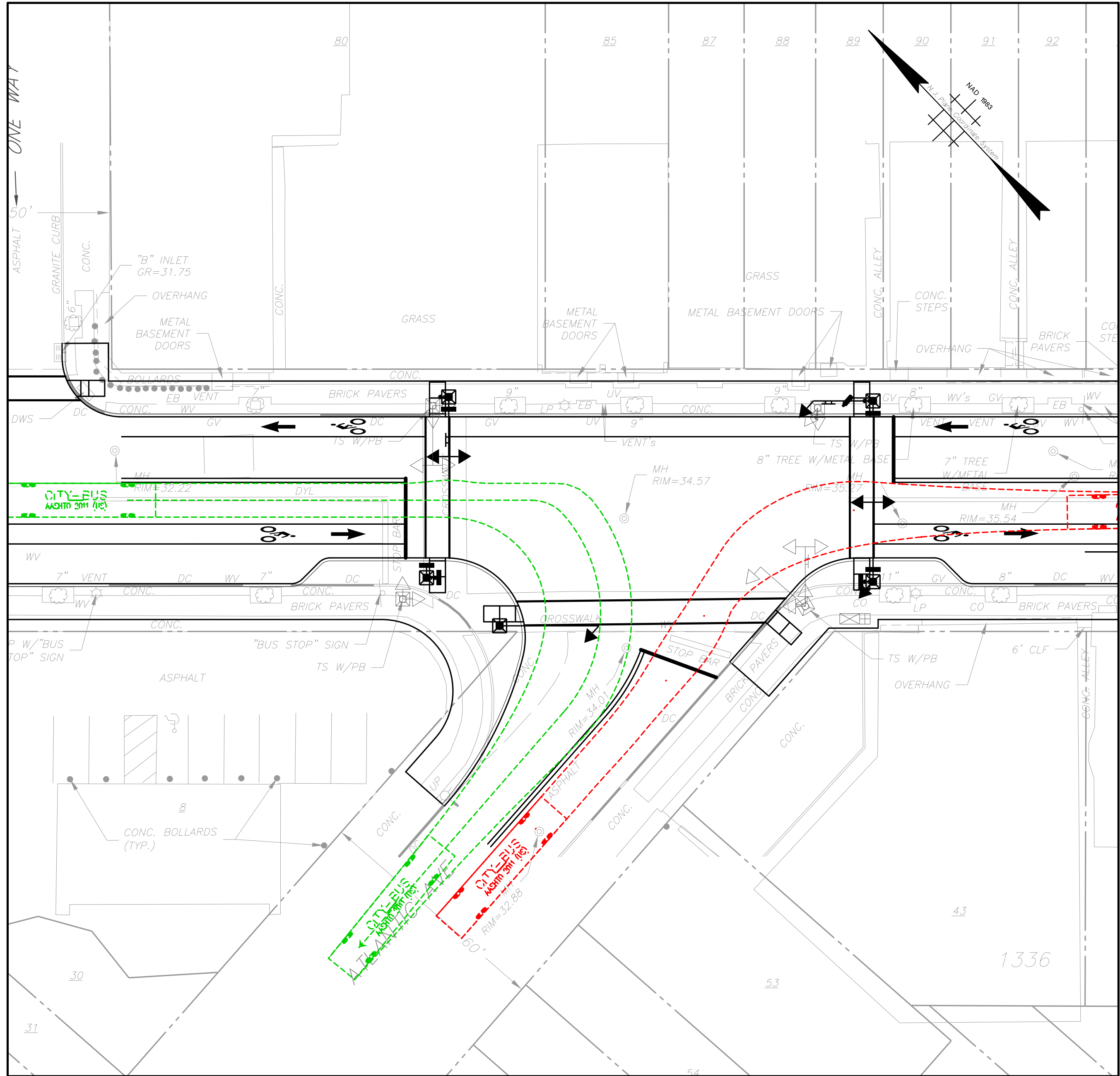
GPI

Greenman-Pedersen, Inc.

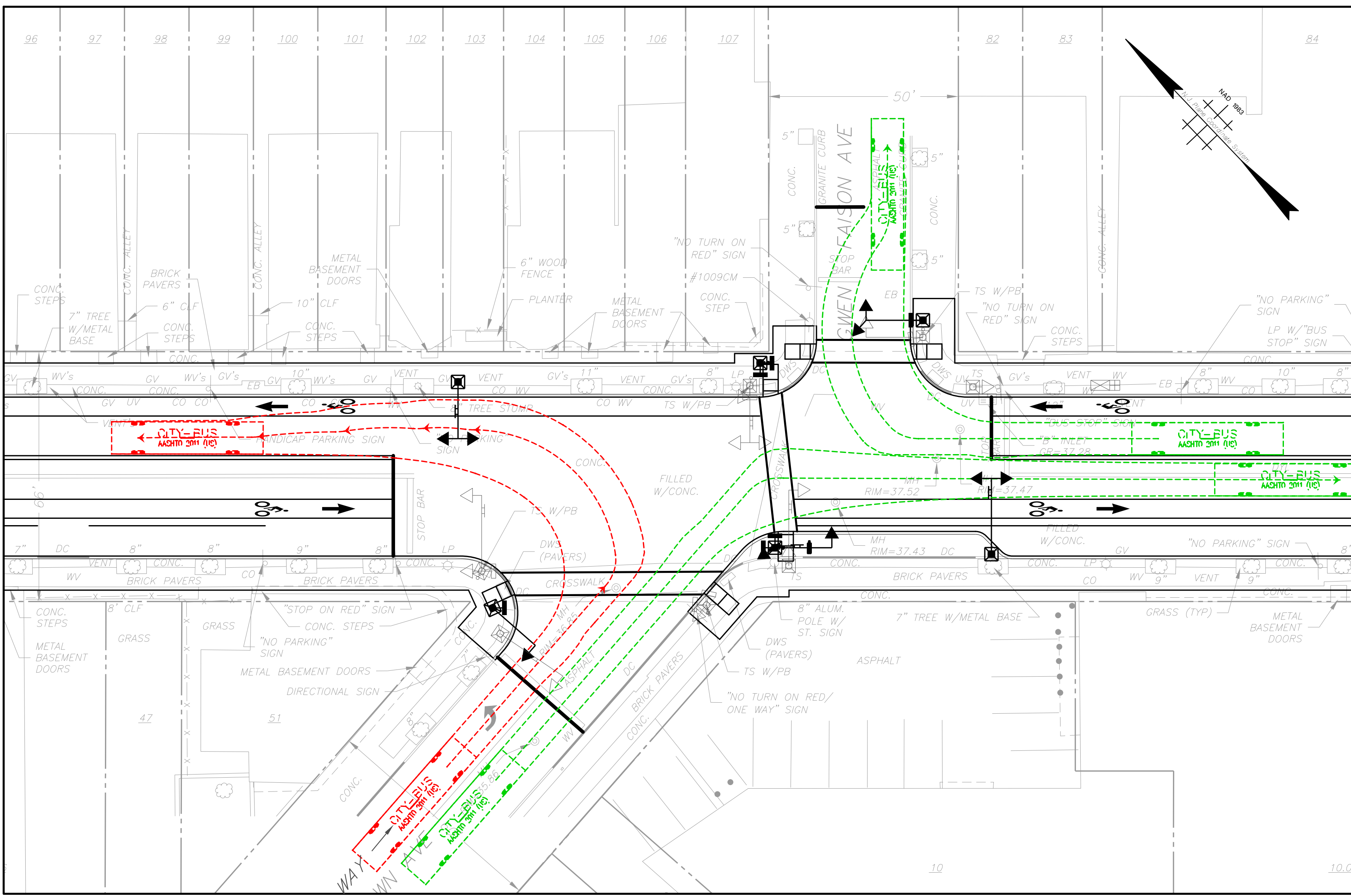
Engineering and Construction Services

20' 0 20' 40'

ATLANTIC AVENUE

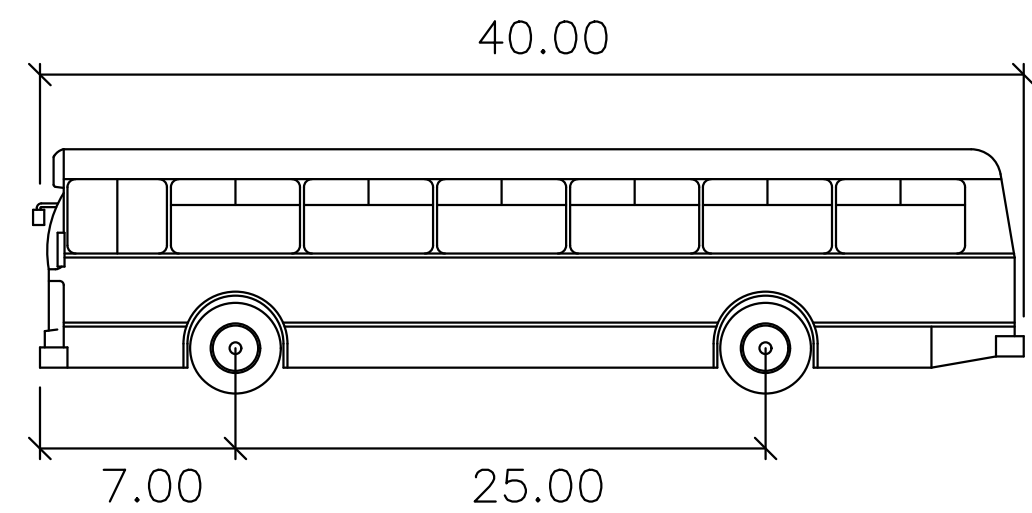


GWEN FAISON AVENUE & LANSDOWN AVENUE



LEGEND

- EXISTING FEATURES
- PROPOSED FEATURES
- AUTOTURN TEMPLATE A
- AUTOTURN TEMPLATE B



CITY-BUS
feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

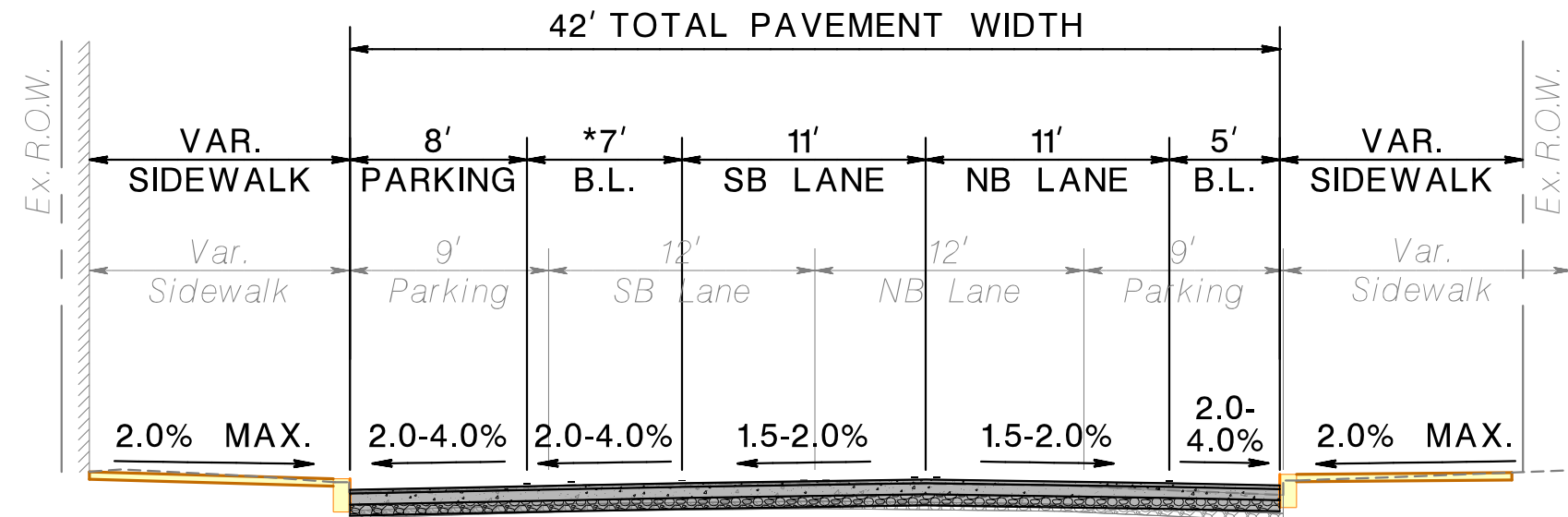
CITY OF CAMDEN
CAMDEN COUNTY

ALTERNATIVE 2 - AUTOTURN



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services






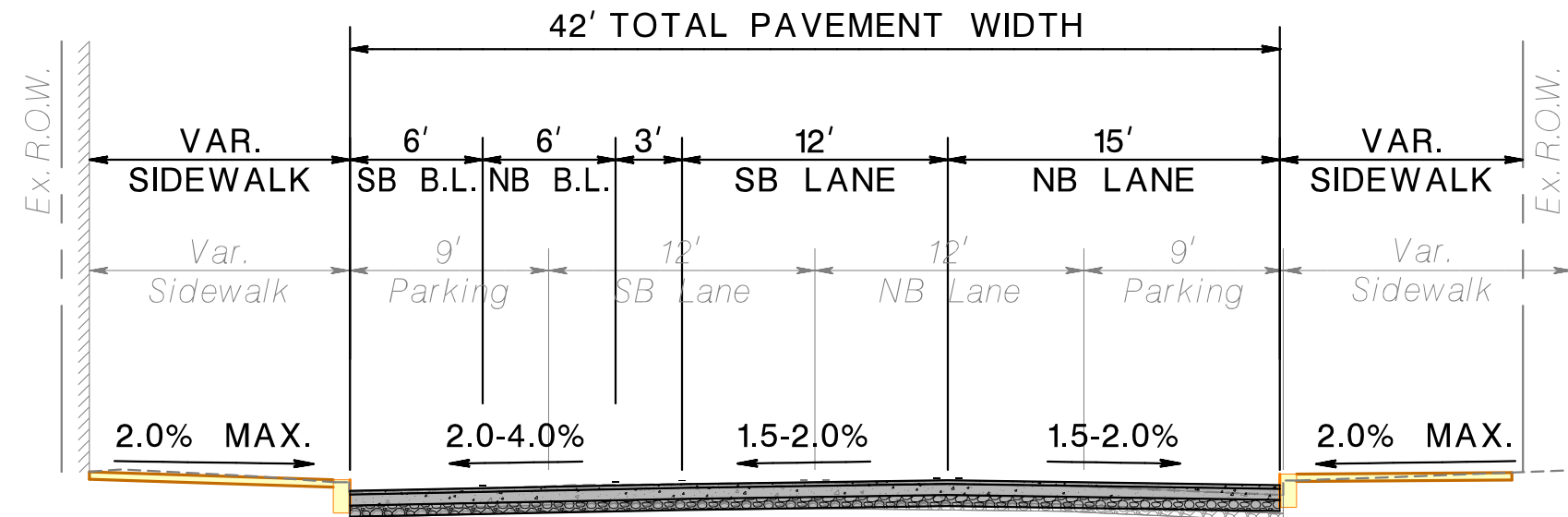
ALTERNATIVE 2

N.T.S.

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- RECONSTRUCT EXISTING SIDEWALK
- CONSTRUCT SEPARATE STORMWATER SYSTEM
- LINE EXISTING COMBINED SEWER PIPE FOR SANITARY SEWER ONLY
- *2-FOOT BUFFER PROVIDED BETWEEN BICYCLE TRAFFIC AND PARKED VEHICLES

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS	
CONCEPT DEVELOPMENT STUDY HADDON AVENUE (CR 561) IMPROVEMENT PROJECT NEWTON AVENUE (CR 604) TO EUCLID AVENUE CITY OF CAMDEN CAMDEN COUNTY	
ALTERNATIVE 2 CROSS SECTION	
	GPI Greenman-Pedersen, Inc. Engineering and Construction Services
N.T.S.	




ALTERNATIVE 3

N.T.S.

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- RECONSTRUCT EXISTING SIDEWALK
- CONSTRUCT SEPARATE STORMWATER SYSTEM
- LINE EXISTING COMBINED SEWER PIPE FOR SANITARY SEWER ONLY

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS	
CONCEPT DEVELOPMENT STUDY HADDON AVENUE (CR 561) IMPROVEMENT PROJECT NEWTON AVENUE (CR 604) TO EUCLID AVENUE CITY OF CAMDEN CAMDEN COUNTY	
ALTERNATIVE 3 CROSS SECTION	
	GPI Greenman-Pedersen, Inc. Engineering and Construction Services
N.T.S.	

STORMWATER PLANTERS



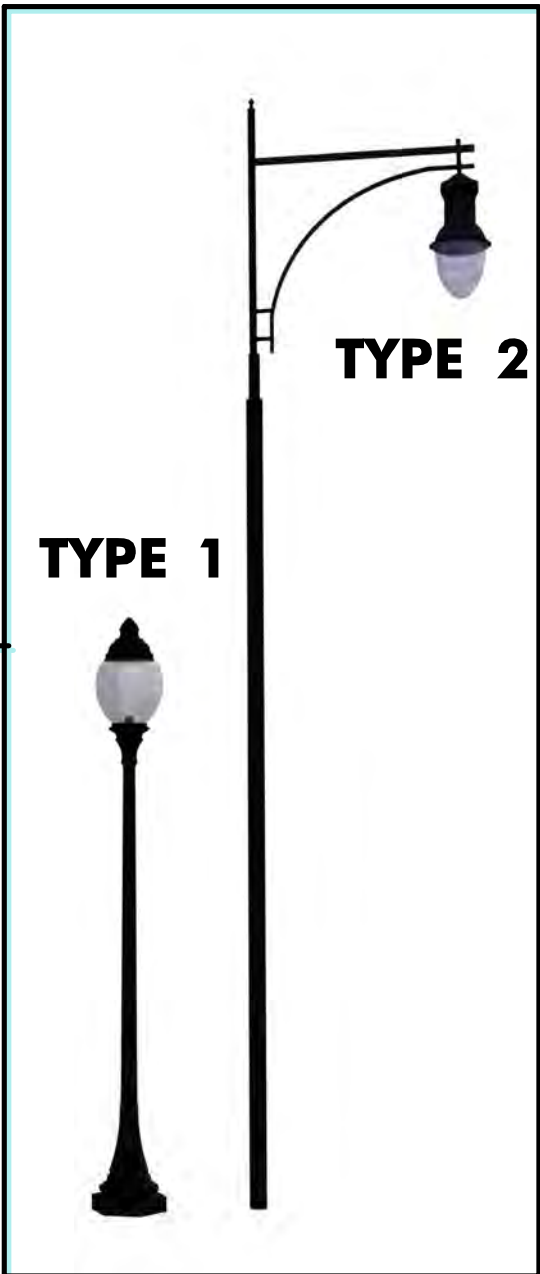
- REDUCES RUNOFF AND POLLUTION INTO THE EXISTING STORMWATER SYSTEM.
- HELPS RECHARGE THE UNDERLAYING WATER TABLE.

STREET FURNITURE



- BENCHES PROVIDE A PLACE FOR REST FOR PEDESTRIANS.
- TRASH BINS HELP KEEP STREET AND SIDEWALK CLEAN.
- OTHER STREET FURNITURE, SUCH AS PLANTERS, BICYCLE RACKS, AND TABLES CAN GREATLY ENHANCE AESTHETICS OF THE CORRIDOR.

ROADWAY AND PEDESTRIAN LIGHTING

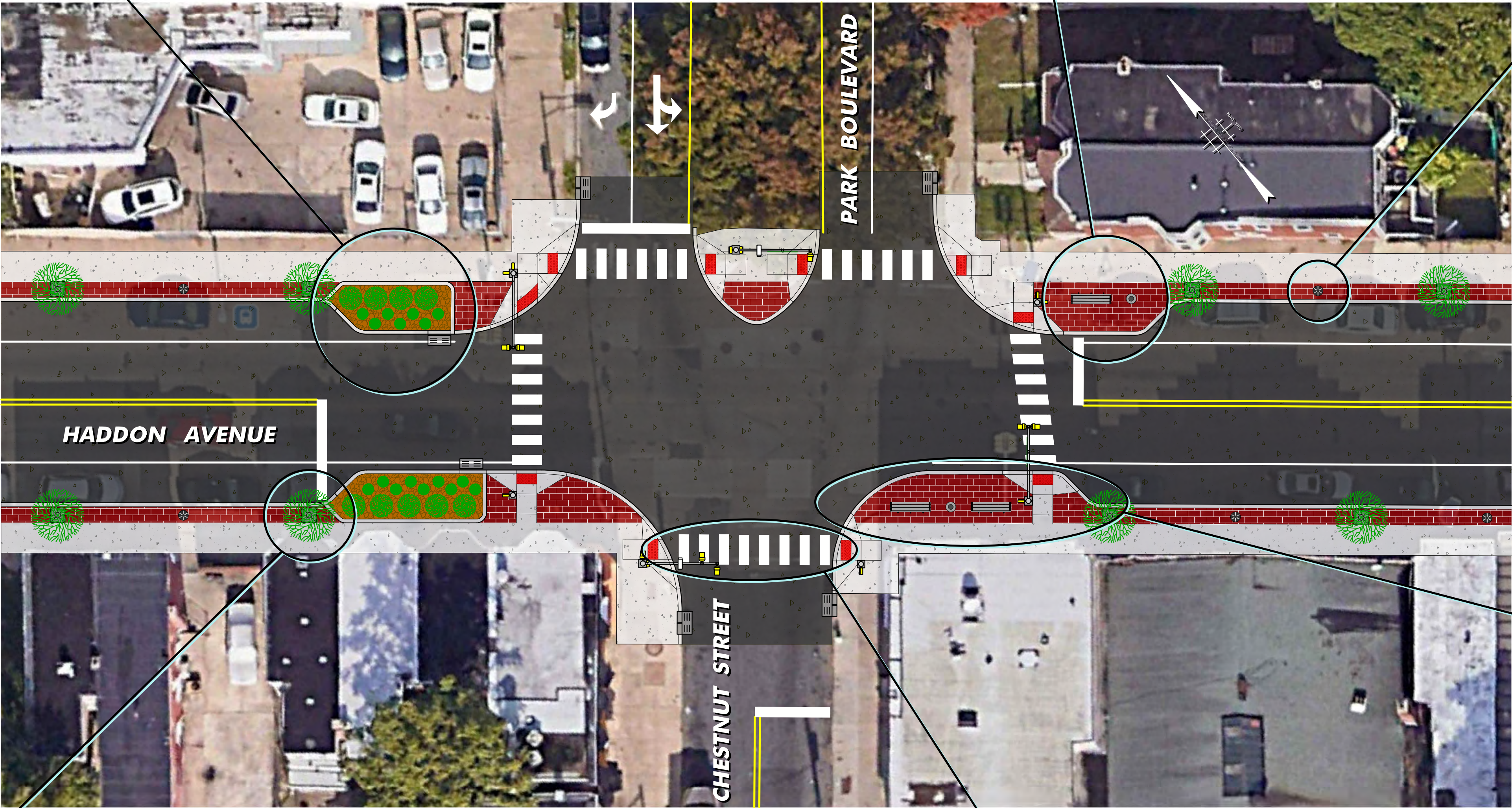


- PROVIDES LIGHTING FOR SIDEWALK, PARKING AREA, AND ROADWAY.
- IMPROVES SAFETY, SECURITY, AND PEDESTRIAN COMFORT.

STREET TREES



- PROVIDES SHADE FOR PEDESTRIANS, ADJACENT BUILDINGS, AND PARKED VEHICLES.
- PROVIDES BUFFER BETWEEN VEHICULAR TRAFFIC AND PEDESTRIANS.
- ABSORBS AIR POLLUTANTS AND GREENHOUSE GASES.
- IMPROVES AESTHETICS OF ROADWAY CORRIDOR.

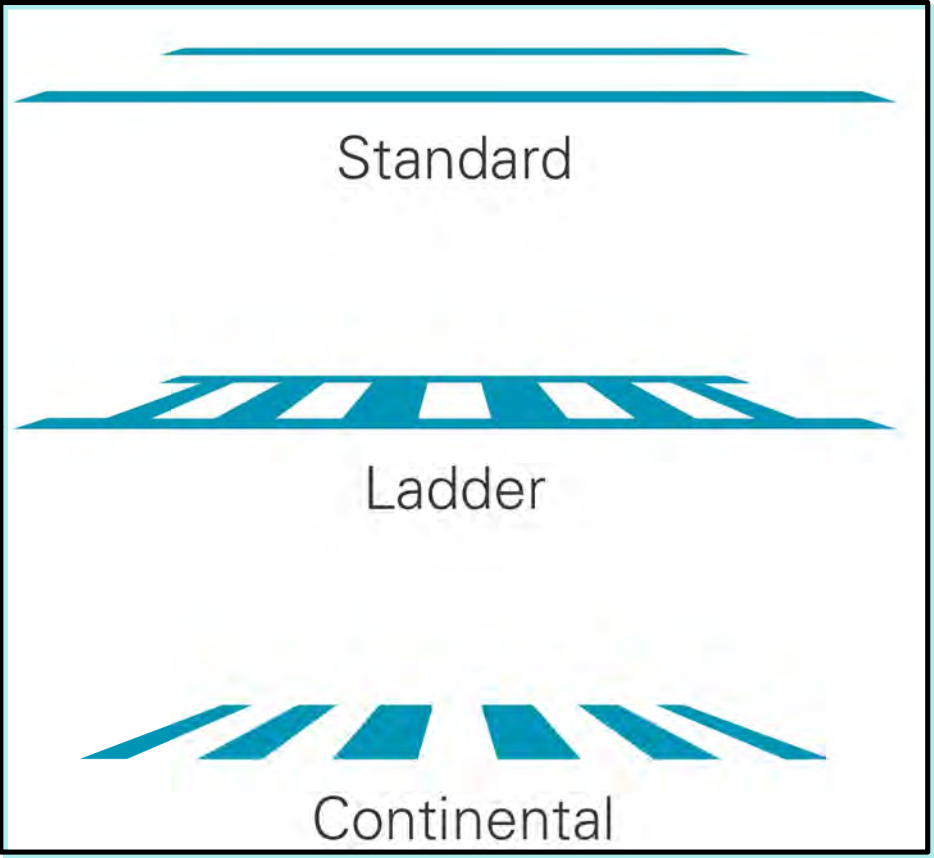


CURB EXTENSIONS



- REDUCES VEHICULAR SPEEDS AT INTERSECTIONS.
- IMPROVES VISIBILITY BETWEEN MOTORISTS AND PEDESTRIANS.
- REDUCES PEDESTRIAN CROSSING DISTANCES.
- PROVIDES ADDITIONAL SPACE FOR STREET FURNITURE AND GREEN INFRASTRUCTURE.

HIGH-VISIBILITY CROSSWALKS



- LADDER AND CONTINENTAL STYLES PROVIDE IMPROVED VISIBILITY OVER STANDARD CROSSWALK MARKINGS.

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

**CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE**

**CITY OF CAMDEN
CAMDEN COUNTY**

STREETSCAPE CONCEPTS



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

N.T.S.

APPENDIX L

ALTERNATIVES ANALYSIS

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604
Concept Development Study
Level of Service (LOS) Comparison
AM

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Gwen Faison Avenue EB L	C	25.3	0.10	28	C	25.0	0.09	30	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26	C	25.0	0.10	26
Gwen Faison Avenue EB TR	C	25.4	0.10	28	C	25.2	0.11	31	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27	C	25.2	0.12	27
Lansdowne Avenue WB LTR	C	25.5	0.08	24	C	25.4	0.09	27	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24	C	25.1	0.10	24
Haddon Avenue (CR 561) NB TR	A	5.2	0.22	144	A	5.3	0.24	161	A	7.0	0.28	168	A	7.1	0.28	170	A	7.2	0.29	172	A	7.2	0.29	172	A	6.8	0.26	163
Haddon Avenue (CR 561) SB LT	A	4.9	0.10	64	A	4.9	0.12	75	A	2.8	0.13	30	A	2.8	0.13	30	A	2.9	0.14	29	A	2.9	0.14	29	A	2.9	0.13	29
Intersection LOS	A	7.4	-	-	A	7.4	-	-	A	7.8	-	-	A	7.8	-	-	A	7.9	-	-	A	7.9	-	-	A	7.6	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	14.3	0.44	68	B	14.7	0.45	78	B	14.8	0.49	72	B	14.8	0.49	72	B	15.2	0.49	74	B	15.2	0.49	74	B	14.8	0.49	72
Haddon Avenue (CR 561) NB LT	A	6.2	0.32	96	A	6.5	0.35	109	A	4.8	0.35	17	A	4.8	0.35	17	A	5.0	0.36	17	A	5.0	0.36	17	A	4.5	0.32	17
Haddon Avenue (CR 561) SB TR	A	3.1	0.09	23	A	3.2	0.10	25	A	2.5	0.10	19	A	2.5	0.10	19	A	3.2	0.11	48	A	3.2	0.11	48	A	2.4	0.10	26
Intersection LOS	A	8.0	-	-	A	8.2	-	-	A	7.1	-	-	A	7.1	-	-	A	7.5	-	-	A	7.5	-	-	A	6.9	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Kaighn Avenue (CR 607) EB LTR	B	14.1	0.28	115	B	14.6	0.32	131	B	14.1	0.35	120	B	14.1	0.35	120	B	14.9	0.36	124	B	14.9	0.36	124	B	14.1	0.35	120
Kaighn Avenue (CR 607) WB LTR	B	15.3	0.38	157	B	16.2	0.45	189	B	15.9	0.49	173	B	15.9	0.49	173	B	16.9	0.51	179	B	16.9	0.51	179	B	15.9	0.49	173
Haddon Avenue (CR 561) NB LTR	B	15.9	0.48	181	B	17.0	0.54	208	A	8.7	0.55	51	A	8.9	0.55	51	A	8.2	0.55	51	A	8.2	0.55	51	A	8.0	0.50	51
Haddon Avenue (CR 561) SB LTR	B	10.9	0.15	50	B	11.1	0.15	55	A	8.8	0.16	31	A	8.9	0.16	31	A	8.5	0.16	27	A	8.5	0.16	27	A	7.9	0.16	27
Intersection LOS	B	14.8	-	-	B	15.7	-	-	B	12.3	-	-	B	12.3	-	-	B	12.6	-	-	B	12.6	-	-	B	12.0	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.22	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0	A	0.0	0.23	0
Haddon Avenue (CR 561) SB LT	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3	A	2.3	0.03	3
Intersection LOS	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Chestnut Street EB LTR	C	26.2	0.48	113	C	26.5	0.50	126	C	21.0	0.46	103	C	21.0	0.46	103	C	21.0	0.46	103	C	21.0	0.46	103	C	20.9	0.46	102
Park Boulevard WB LT	C	30.8	0.58	118	C	31.1	0.59	131	C	24.6	0.54	108	C	24.6	0.54	108	C	24.6	0.54	108	C	24.6	0.54	108	C	24.5	0.54	107
Park Boulevard WB R	A	9.6	0.19	28	A	10.0	0.19	32	A	6.0	0.17	23	A	6.0	0.17	23	A	6.2	0.18	24	A	6.2	0.18	24	A	5.8	0.17	23
Haddon Avenue (CR 561) NB LTR	A	6.6	0.22	90	A	7.0	0.26	108	A	5.0	0.31	86	A	5.0	0.31	84	A	5.4	0.32	64	A	5.4	0.32	64	A	5.0	0.29	103
Haddon Avenue (CR 561) SB LTR	A	6.0	0.14	53	A	6.2	0.16	59	A	7.7	0.19	80	A	7.8	0.19	81	A	9.0	0.20	94	A	9.1	0.20	94	A	9.6	0.19	96
Intersection LOS	B	16.5	-	-	B	16.3	-	-	B	13.1	-	-	B	13.1	-	-	B	13.5	-	-	B	13.5	-	-	B	13.4	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Walnut Street WB LR	C	26.8	0.11	24	C	26.9	0.12	27	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26	C	25.2	0.11	26
Haddon Avenue (CR 561) NB TR	A	1.3	0.18	53	A	1.3	0.20	61	A	0.8	0.20	30	A	0.8	0.20	30	A	0.6	0.21	11	A	0.6	0.21	11	A	0.5	0.18	14
Haddon Avenue (CR 561) SB LT	A	1.2	0.09	26	A	1.2	0.09	29	A	0.5	0.09	10	A	0.5	0.10	10	A	0.8	0.10	5	A	0.8	0.10	5	A	0.5	0.10	7
Intersection LOS	A	2.4	-	-	A	2.4	-	-	A	1.7	-	-	A	1.7	-	-	A	1.7	-	-	A	1.7	-	-	A	1.5	-	-

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR					C	27.0	0.66	121	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120	C	29.5	0.67	120
Pine Street WB LTR					B	15.8	0.17	39	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38	B	16.9	0.17	38
Haddon Avenue (CR 561) NB LTR					A	7.6	0.25	87	A	3.5	0.23	21	A	3.5	0.24	21	A	3.2	0.25	29	A	3.2	0.25	29	A	3.2	0.22	30
Haddon Avenue (CR 561) SB LTR					A	7.8	0.26	88	A	7.1	0.25	m77	A	7.3	0.25	m79	A	7.3	0.25	m79	A	7.3	0.25	m79	A	7.3	0.25	m79
Intersection LOS					B	13.9	-	-	B	13.2	-	-	B	13.3	-	-	B	13.1	-	-	B	13.2	-	-	B	13.3	-	-
					Intersection Not Counted; Improvements Not Yet Constructed and Volumes Not Yet Rerouted																							

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604
Concept Development Study
Level of Service (LOS) Comparison
MD

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Gwen Faison Avenue EB L	C	26.3	0.09	37	C	26.3	0.10	29	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26	C	24.7	0.10	26
Gwen Faison Avenue EB TR	C	26.6	0.13	32	C	26.7	0.13	34	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30	C	25.3	0.13	30
Lansdowne Avenue WB LTR	C	26.4	0.06	19	C	26.4	0.07	22	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19	C	24.6	0.07	19
Haddon Avenue (CR 561) NB TR	A	5.9	0.15	89	A	6.0	0.17	102	A	6.5	0.18	107	A	6.6	0.19	108	A	6.7	0.19	108	A	6.7	0.19	108	A	6.4	0.17	105
Haddon Avenue (CR 561) SB LT	A	5.9	0.12	69	A	5.9	0.13	76	A	4.1	0.13	51	A	4.0	0.13	51	A	4.4	0.14	53	A	4.4	0.14	53	A	4.1	0.13	51
Intersection LOS	A	8.7	-	-	A	8.6	-	-	A	8.0	-	-	A	8.1	-	-	A	8.2	-	-	A	8.2	-	-	A	8.0	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	14.8	0.31	52	B	14.9	0.32	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58	B	16.2	0.37	58
Haddon Avenue (CR 561) NB LT	A	4.4	0.19	56	A	4.5	0.21	63	A	3.6	0.21	16	A	3.6	0.21	16	A	3.4	0.22	16	A	3.4	0.22	16	A	3.2	0.19	16
Haddon Avenue (CR 561) SB TR	A	3.3	0.12	30	A	3.4	0.13	34	A	2.1	0.13	10	A	2.1	0.13	10	A	2.3	0.13	8	A	2.3	0.14	8	A	2.1	0.13	10
Intersection LOS	A	6.4	-	-	A	6.4	-	-	A	5.9	-	-	A	5.9	-	-	A	5.8	-	-	A	5.8	-	-	A	5.7	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Kaighn Avenue (CR 607) EB LTR	B	13.8	0.25	94	B	14.0	0.26	104	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90	B	11.9	0.26	90
Kaighn Avenue (CR 607) WB LTR	B	16.3	0.45	181	B	17.0	0.49	202	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173	B	14.6	0.49	173
Haddon Avenue (CR 561) NB LTR	B	12.8	0.34	113	B	13.5	0.38	127	A	8.2	0.42	39	A	8.3	0.42	39	A	8.5	0.44	44	A	8.5	0.44	44	A	7.9	0.39	41
Haddon Avenue (CR 561) SB LTR	B	11.9	0.18	61	B	11.9	0.19	68	A	8.7	0.21	41	A	8.8	0.21	42	B	10.9	0.22	48	B	10.9	0.22	48	B	10.2	0.21	44
Intersection LOS	B	14.2	-	-	B	14.7	-	-	B	11.5	-	-	B	11.6	-	-	B	11.9	-	-	B	11.9	-	-	B	11.6	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.13	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0	A	0.0	0.15	0
Haddon Avenue (CR 561) SB LT	A	1.6	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2	A	1.7	0.03	2
Intersection LOS	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-	A	0.7	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Chestnut Street EB LTR	C	23.3	0.29	65	C	22.9	0.30	69	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58	B	18.5	0.28	58
Park Boulevard WB LT	C	30.7	0.45	90	C	30.8	0.48	98	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83	C	25.3	0.45	83
Park Boulevard WB R	A	8.9	0.17	25	A	8.5	0.18	25	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22	A	7.3	0.16	22
Haddon Avenue (CR 561) NB LTR	A	4.4	0.14	50	A	4.7	0.15	57	A	4.4	0.17	40	A	4.4	0.17	40	A	4.4	0.18	41	A	4.4	0.18	41	A	4.5	0.16	36
Haddon Avenue (CR 561) SB LTR	A	4.7	0.12	45	A	5.0	0.12	51	A	6.5	0.14	17	A	6.4	0.14	16	A	4.7	0.15	36	A	4.8	0.15	37	A	4.5	0.14	31
Intersection LOS	B	12.9	-	-	B	13.3	-	-	B	11.7	-	-	B	11.6	-	-	B	11.2	-	-	B	11.2	-	-	B	11.2	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Walnut Street WB LR	C	28.9	0.06	17	C	28.9	0.06	18	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15	C	24.4	0.06	15
Haddon Avenue (CR 561) NB TR	A	1.0	0.11	30	A	1.0	0.12	33	A	0.7	0.12	20	A	0.7	0.12	20	A	1.0	0.12	23	A	1.0	0.12	23	A	0.9	0.11	20
Haddon Avenue (CR 561) SB LT	A	1.0	0.09	26	A	1.0	0.10	29	A	0.6	0.10	14	A	0.7	0.10	15	A	0.5	0.10	9	A	0.5	0.10	9	A	0.3	0.10	6
Intersection LOS	A	1.7	-	-	A	1.7	-	-	A	1.3	-	-	A	1.3	-	-	A	1.4	-	-	A	1.4	-	-	A	1.2	-	-

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR	Intersection Not Counted; Improvements Not Yet Constructed and Volumes Not Yet Rerouted				C	28.6	0.63	108	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106	C	30.7	0.64	106
Pine Street WB LTR					B	17.6	0.17	40	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39	B	18.5	0.18	39
Haddon Avenue (CR 561) NB LTR					A	6.5	0.21	73	A	4.2	0.20	23	A	4.3	0.21	24	A	4.2	0.22	31	A	4.2	0.22	31	A	4.0	0.19	33
Haddon Avenue (CR 561) SB LTR					A	7.1	0.29	95	A	6.5	0.27	98	A	6.6	0.27	101	A	4.4	0.27	51	A	4.4	0.27	51	A	4.4	0.27	51
Intersection LOS					B	13.0	-	-	B	12.7	-	-	B	12.8	-	-	B	11.9	-	-	B	11.9	-	-	B	11.8	-	-

Camden County Department of Public Works
Haddon Avenue (CR 561) Improvement Project - Euclid Avenue to Newton Avenue (CR 604
Concept Development Study
Level of Service (LOS) Comparison
PM

1 - Haddon Avenue (CR 561) & Gwen Faison Avenue / Lansdowne Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)							
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)				
Gwen Faison Avenue EB L	C	29.3	0.19	43	C	29.3	0.19	47	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41	C	26.3	0.19	41
Gwen Faison Avenue EB TR	C	29.5	0.19	42	C	29.6	0.20	45	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40	C	26.6	0.20	40
Lansdowne Avenue WB LTR	C	29.3	0.12	30	C	29.4	0.13	32	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27	C	25.4	0.12	27
Haddon Avenue (CR 561) NB TR	A	7.8	0.21	114	A	7.9	0.22	128	A	6.7	0.22	127	A	6.7	0.22	128	A	6.8	0.23	130	A	6.8	0.23	130	A	6.5	0.20	125	A	6.5	0.20	125
Haddon Avenue (CR 561) SB LT	A	8.1	0.24	144	A	8.5	0.28	171	A	3.0	0.28	82	A	3.0	0.28	82	A	3.1	0.29	82	A	3.1	0.29	84	A	3.0	0.28	82	A	3.0	0.28	82
Intersection LOS	B	11.1	-	-	B	11.2	-	-	A	7.6	-	-	A	7.6	-	-	A	7.7	-	-	A	7.7	-	-	A	7.5	-	-	A	7.5	-	-

2 - Haddon Avenue (CR 561) & Atlantic Avenue (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Atlantic Avenue EB LR	B	17.2	0.47	82	B	17.5	0.48	93	B	17.1	0.51	85	B	17.1	0.51	85	B	17.3	0.51	86	B	17.3	0.51	86	B	17.1	0.51	85
Haddon Avenue (CR 561) NB LT	A	6.1	0.30	86	A	6.3	0.32	98	A	4.7	0.33	16	A	4.7	0.33	16	A	4.8	0.34	16	A	4.8	0.34	16	A	4.4	0.30	16
Haddon Avenue (CR 561) SB TR	A	5.3	0.29	86	A	5.6	0.32	99	A	2.5	0.32	21	A	2.6	0.33	21	A	2.8	0.34	24	A	2.8	0.34	24	A	2.7	0.33	19
Intersection LOS	A	8.3	-	-	A	8.6	-	-	A	6.6	-	-	A	6.6	-	-	A	6.8	-	-	A	6.8	-	-	A	6.6	-	-

3 - Haddon Avenue (CR 561) & Kaighn Avenue (CR 607) (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)							
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)				
Kaighn Avenue (CR 607) EB LTR	B	15.0	0.35	138	B	15.4	0.38	152	B	11.6	0.35	121	B	11.6	0.35	121	B	12.4	0.37	126	B	12.4	0.37	126	B	11.6	0.35	121	B	11.6	0.35	121
Kaighn Avenue (CR 607) WB LTR	B	18.5	0.58	246	C	20.8	0.67	299	B	15.5	0.62	238	B	15.5	0.62	238	B	16.8	0.64	247	B	16.8	0.64	247	B	15.5	0.62	238	B	15.5	0.62	238
Haddon Avenue (CR 561) NB LTR	B	14.5	0.45	146	B	14.9	0.47	166	B	13.1	0.56	75	B	13.2	0.57	75	B	12.4	0.56	69	B	12.4	0.56	69	B	11.8	0.52	74	B	11.8	0.52	74
Haddon Avenue (CR 561) SB LTR	B	15.6	0.43	150	B	15.9	0.45	168	B	13.0	0.54	86	B	13.1	0.54	87	B	12.5	0.53	84	B	12.6	0.53	84	B	13.5	0.54	84	B	13.5	0.54	84
Intersection LOS	B	16.2	-	-	B	17.3	-	-	B	13.6	-	-	B	13.7	-	-	B	14.0	-	-	B	14.0	-	-	B	13.5	-	-	B	13.5	-	-

4 - Haddon Avenue (CR 561) & Wildwood Avenue (Unsignalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (No Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Haddon Avenue (CR 561) NB TR	A	0.0	0.16	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0	A	0.0	0.18	0
Haddon Avenue (CR 561) SB LT	A	1.3	0.03	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3	A	1.3	0.04	3
Intersection LOS	A	0.7	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-	A	0.8	-	-

5 - Haddon Avenue (CR 561) & Chestnut Street / Park Boulevard (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (NB Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)							
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)				
Chestnut Street EB LTR	C	22.5	0.38	92	C	22.6	0.39	102	B	17.5	0.36	82	B	17.5	0.36	82	B	17.9	0.36	84	B	17.9	0.36	84	B	17.5	0.36	82	B	17.5	0.36	82
Park Boulevard WB LT	C	33.0	0.64	130	C	33.6	0.66	146	C	25.4	0.58	117	C	25.4	0.58	117	C	26.1	0.59	121	C	26.1	0.59	121	C	25.4	0.58	117	C	25.4	0.58	117
Park Boulevard WB R	B	10.1	0.19	30	B	10.4	0.19	35	A	6.7	0.17	25	A	6.7	0.17	25	A	7.1	0.18	27	A	7.1	0.18	27	A	6.7	0.17	25	A	6.7	0.17	25
Haddon Avenue (CR 561) NB LTR	A	5.8	0.20	62	A	5.9	0.20	69	A	5.7	0.25	m56	A	5.7	0.25	m56	A	5.8	0.25	m68	A	5.8	0.25	m68	A	5.4	0.23	m70	A	5.4	0.23	m70
Haddon Avenue (CR 561) SB LTR	A	7.9	0.32	125	A	8.2	0.34	139	A	3.1	0.41	30	A	3.0	0.41	30	A	3.2	0.42	29	A	3.1	0.42	29	A	3.1	0.41	29	A	3.1	0.41	29
Intersection LOS	B	15.1	-	-	B	15.3	-	-	B	10.7	-	-	B	10.7	-	-	B	11.0	-	-	B	11.0	-	-	B	11.0	-	-	B	10.7	-	-

6 - Haddon Avenue (CR 561) & Walnut Street (Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - Alt 1 (No Bus Blockages)				2045 Build - Alt 1 (Full Bus Blockages)				2045 Build - Alt 2 (N8 Bus Blockages Only)				2045 Build - Alt 2 (Full Bus Blockages)				2045 Build - Alt 3 (Full Bus Blockages)							
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)				
Walnut Street WB LR	C	27.5	0.14	28	C	27.4	0.14	31	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29	C	25.4	0.13	29
Haddon Avenue (CR 561) NB TR	A	1.9	0.13	35	A	2.0	0.14	39	A	1.7	0.14	35	A	1.7	0.14	35	A	1.8	0.15	36	A	1.8	0.15	36	A	2.0	0.13	42	A	2.0	0.13	42
Haddon Avenue (CR 561) SB LT	A	2.2	0.21	63	A	2.3	0.23	70	A	1.4	0.24	28	A	1.5	0.24	29	A	1.2	0.24	10	A	1.3	0.25	11	A	1.1	0.24	5	A	1.1	0.24	5
Intersection LOS	A	3.2	-	-	A	3.3	-	-	A	2.5	-	-	A	2.6	-	-	A	2.5	-	-	A	2.5	-	-	A	2.4	-	-	A	2.4	-	-

7A - Haddon Avenue (CR 561) & Pine Street (2018 - Unsignalized, 2045 - Signalized)

Lane Group	2018 Existing				2045 No-Build				2045 Build - AH 1 (No Bus Blockages)				2045 Build - AH 1 (Full Bus Blockages)				2045 Build - AH 2 (NB Bus Blockages Only)				2045 Build - AH 2 (Full Bus Blockages)				2045 Build - AH 3 (Full Bus Blockages)			
	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)	LOS	Delay (sec.)	V/C Ratio	95% Queue (ft.)
Pine Street EB LTR					C	32.5	0.65	130	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120	C	32.2	0.67	120
Pine Street WB LTR					C	22.2	0.29	66	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61	C	21.0	0.29	61
Haddon Avenue (CR 561) NB LTR					A	6.3	0.14	58	A	8.3	0.14	57	A	8.3	0.15	56	A	8.5	0.15	56	A	8.5	0.15	56	A	8.2	0.13	50
Haddon Avenue (CR 561) SB LTR					A	9.8	0.53	236	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82	A	5.2	0.53	82
Intersection LOS					B	14.8	-	-	B	12.5	-	-	B	12.5	-	-	B	12.5	-	-	B	12.5	-	-	B	12.4	-	-

APPENDIX M

ALTERNATIVES MATRIX

ALT.	ALTERNATIVE DESCRIPTION	MEETS PURPOSE	RIGHT OF WAY IMPACTS ¹	ACCESS IMPACTS		NEW DESIGN EXCEPTION	COMMUNITY IMPACTS (ENV. JUSTICE)	ENVIRONMENTAL & HISTORIC IMPACTS	STORMWATER MANAGEMENT	UTILITY IMPACTS	ADVANTAGES	DISADVANTAGES
			(No. of Parcels) Type	# Dwys	Type							
1	Widen the sidewalk area on each side of the roadway by 1' and provide 12' lanes and 8' shoulders in each direction. Replace the existing concrete pavement with full depth bituminous pavement and separate the CSO. Add curb extensions at signalized intersections where feasible.	Yes	(5) Partial taking or permanent sidewalk easement	TBD	--	No Existing Only	None identified	None identified	Net increase impervious < ¼ ac; Disturbance > 1 ac Compliance may be required	OH utility poles may require relocation for ADA ramps; separating CSO may impact adjacent underground facilities	<ul style="list-style-type: none">• Maintains parking on both sides of Haddon Avenue.• Curb extensions improve visibility of/for pedestrians, help enforce Title 39, and provide space for green infrastructure, benches, etc.• Addresses poor pavement conditions and CSO	<ul style="list-style-type: none">• Does not provide the separate lanes for multi-modal use of the roadway (alternate bike routes required)
2	Maintain the existing pavement and sidewalk widths and provide 11' lanes in each direction, a 5' wide bicycle lane in the NB direction, a 7' wide bicycle lane in the SB direction, and 8' parking area along the SB curbline. Replace the existing concrete pavement with full depth bituminous pavement and separate the CSO. Add curb extensions at signalized intersections along the SB side where feasible.	Yes	(5) Partial taking or permanent sidewalk easement	TBD	--	No Existing Only	None identified	None identified	Net increase impervious < ¼ ac; Disturbance > 1 ac Compliance may be required	OH utility poles may require relocation for ADA ramps; separating CSO may impact adjacent underground facilities	<ul style="list-style-type: none">• Curb extensions improve visibility of/for pedestrians, help enforce Title 39, and provide space for green infrastructure, benches, etc.• Maintaining parking on SB side improves side street turning movements• Provides multi-modal use of the roadway• Addresses poor pavement conditions and CSO	<ul style="list-style-type: none">• Maintains parking on one side of Haddon Avenue• The centerline must deflect approximately 5.5' to/from the north to tie into the existing cross section at each end of the project limits
3	Maintain the existing pavement and sidewalk widths and provide a 12' wide area for 2-way separated bicycle lanes along the southerly curb lines, a 3' wide buffer, 12' wide SB lane, and a 15' wide NB lane. Replace the existing concrete pavement with full depth bituminous pavement and separate the CSO.	Yes	(TBD) Partial taking or permanent sidewalk easement	TBD	--	No Existing Only	None identified	None identified	Net increase impervious < ¼ ac; Disturbance > 1 ac Compliance may be required	OH utility poles may require relocation for ADA ramps; separating CSO may impact adjacent underground facilities	<ul style="list-style-type: none">• Provides multi-modal use of the roadway• Addresses poor pavement conditions and CSO	<ul style="list-style-type: none">• Requires removal of all parking along Haddon Avenue• Would not allow for the addition of curb extensions as the entire pavement width is utilized for vehicular or bicycle lanes• The centerline must deflect approximately 5.5' to/from the north to tie into the existing cross section at each end of the project limits• Two-way separated bicycle lanes are better suited to roadways with few driveways or cross street conflicts
No-Build	No-Build	No	0	N/A	--	N/A	None	None	None	None	<ul style="list-style-type: none">• No cost	<ul style="list-style-type: none">• Does not address the project purpose and need.

¹ Based on tax maps and GIS data

APPENDIX N

REASONABLE ASSURANCE OF CONTROLLING SUBSTANDARD DESIGN ELEMENTS

**Department of
Public Works**

Barbara Holcomb
Freeholder, Liaison

John Wolick
Director



Department of Public Works
Charles J. DePalma Complex
2311 Egg Harbor Road
Lindenwold, NJ 08021
Phone: (856) 566.2980
Fax: (856) 566.2988
highway@camdencounty.com
CamdenCounty.com

March 27, 2020

Bernie Boerchers
Greenman Pedersen, Inc. 100 Corporate Drive
Suite 301
Lebanon, NJ 08833

**Subject: Response to Request for Reasonable Assurance of
Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study,
Euclid Avenue to Newton Avenue,
City of Camden, Camden County**

Dear Mr. Boerchers:

Greenman Pedersen, Inc has requested reasonable assurance of Camden County's approval of four (4) Controlling Substandard Design Elements (CSDEs) along Haddon Avenue (CR 561) from Euclid Avenue to Newton Avenue in the City of Camden. Camden County is agreeable to providing Greenman Pedersen, Inc. (GPI) reasonable assurance of approval for the following four (4) design exceptions for the subject project.

- A. Stopping Sight Distance (SSD) at Non-Signalized Intersections**
- B. Vertical Clearance under Structures**
- C. Cross Slope**
- D. Shoulder Width**

The overall purpose of this Concept Design project is to reconstruct Haddon Avenue from Euclid Avenue to Newton Avenue, making Haddon Avenue safer for pedestrians, bicyclists, and motorists; improving traffic flow through the area and bringing the infrastructure to a state of good repair.

The PPA consists of the following improvements:

- Full depth HMA in accordance with Camden County Development Regulations. The proposed pavement will consist of a 6-inch thick Dense Graded Aggregate Base Course, 6-inch thick HMA, 19M64, Base Course, and a 2-inch thick HMA, 12.5M64, Surface Course. Dimensions may be increased during design if structural capacity of the proposed HMA section is required.

**Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County**

- The existing alignment of Haddon Avenue will be maintained. The cross-section will consist of a 12-foot lane, 8-foot shoulder/parking lane in each direction on Haddon Avenue.
- Curb extensions will be implemented at signalized intersections where feasible and can accommodate local fire department trucks and transit buses.
- Sidewalks on each side of the road will be widened up to 1 foot.
- ADA curb ramps will be brought into compliance.
- Pedestrian signals, signing, lighting, and crosswalks will be upgraded to meet ADA standards.
- No bicycle lanes are proposed.
- NJ Transit Bus boarding and alighting will occur from curb level. Consideration will be given to bus bulbs. Bus bulbs are elongated curb extensions that would allow curb level boarding/alighting without requiring a bus to enter a turnout.

In 2018, the Camden City Police Department (CCPD) provided vehicular crash reports for Haddon Avenue within the study limits, for the three-year period from January 2015 through December 2017. Collision diagrams and a DE crash analysis were prepared by GPI from these reports. No fatal crashes occurred during the three-year period. The statewide crash rate shown is for State roadways with similar cross sections (two lanes, undivided with no shoulders). CCPD also provided pedestrian crash reports for Haddon Avenue for the five-year period from January 2013 through December 2017. Seventeen (17) pedestrian or bicyclist crashes occurred over this period. The majority of these crashes resulted in injuries, however, no fatalities occurred. Crash data is summarized below.

Crash Summary

Total Crashes	Actual Crash Rate	2017 Statewide Crash Rate	Overrepresentations		
			Crash Type	Severity	Surface/Light Conditions
81	6.32	4.17	Parked vehicle, left/U-turn, Fixed Object, Pedestrian/Bicyclist, At intersection	Injury (predominately minor)	Dry/Day and Night

Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County

A. Stopping Sight Distance (SSD) at Non-Signalized Intersections

The following table indicates the existing substandard stopping sight distance at non-signalized intersections for Haddon Avenue based on field observations and as-built plans along with the minimum requirements per AASHTO.

CSDE No.	Location (Station/Milepost)	S (feet)			V _{CALC} (mph)		V _{POST} /V _{DES} (mph)
		Exist.	Prop.	Std.	Exist.	Prop.	
1	Whitman Avenue (19+50/49.59)	171	171	200	N/A	N/A	25/30
2	Bradley Avenue (28+00/49.75)	70	70	200	N/A	N/A	25/30
3	Liberty Street (33+00/49.85)	140	140	200	N/A	N/A	25/30
4	Sycamore Street (42+70/50.03)	82	82	200	N/A	N/A	25/30
5	Spruce Street (59+75/50.35)	119	119	200	N/A	N/A	25/30
6	Division Street (61+75/50.39)	94	94	200	N/A	N/A	25/30
7	Mt Ephraim Avenue (68+50/50.52)	86	86	200	N/A	N/A	25/30

- Stopping Sight Distance-Proposed Safety Measures**

The proposed improvements within the project limits include new signing, striping, new improved lighting, and curb extensions where appropriate to improve visibility and encourage driver awareness.

- Stopping Sight Distance-Crash Analysis**

Indicator crash types for substandard stopping sight distances include same direction rear end, right angle, and left turn. The primary sight distance obstruction is also noted.

CSDE No.	Location (Station/Milepost)	Indicator Crashes	Primary SSD Obstruction
1	Whitman Avenue (19+50/49.59)	1	Parked cars
2	Bradley Avenue (28+00/49.75)	2	Parked cars
3	Liberty Street (33+00/49.85)	0	Parked cars
4	Sycamore Street (42+70/50.03)	3	Parked cars
5	Spruce Street (59+75/50.35)	1	Parked cars
6	Division Street (61+75/50.39)	2	Parked cars
7	Mt Ephraim Avenue (68+50/50.52)	1	PATCO rail bridge piers

More than two indicator crashes in a year is considered statistically significant by NJDOT. None of these locations had two crashes or more in a given year, therefore, GPI's opinion is that these occurrences are not attributable to the substandard design element.

**Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County**

- **Stopping Sight Distance-Impact(s)**

Based on the lack of or statistically insignificant amount of indicator crashes for Locations 1 through 7, maintaining the existing substandard design values will not result in degrading the relative safety of the roadway. However, curb extensions or bump-outs are proposed at some of the above locations in the PPA.

Curb extensions provide an effective additional visual queue for motorized vehicles approaching an intersection, reduce crossing distances for pedestrians, and prohibit parking close to crossing locations. Where curb extensions cannot be provided, striping, signing, and lighting can be implemented to alert motorists of non-signalized intersections.

B. Vertical Clearance under Structures

Two bridges exist within the Haddon Avenue project limits. They are I-676 over Haddon Avenue and the DRPA/PATCO Rail Bridge over Haddon Avenue. This study does not contemplate impacting either of these bridges. However, it is noted that vertical clearance under both structures is substandard. In addition, the existing piers of the DRPA/PATCO Rail Bridge lack adequate protection and suffer substandard horizontal clearances.

Location Number	Location and Direction (Station/Milepost)	Bridge Clearance (feet)		
		<i>Exist.*</i>	<i>Prop.</i>	<i>Std.</i>
8	PATCO rail bridge over Haddon Avenue	12'-9"	12'-9"	16'-6"
9	I-676 over Haddon Avenue (Str. No. 0430-151)	14'-6"	14'-6"	16'-6"

* Based on field observations and survey measurements. As-built plans not available.

- **Vertical Clearance-Proposed Safety Measures**

No vertical clearance safety measures are proposed as part of this project. Additional warning signs may be appropriate.

- **Vertical Clearance-Crash Analysis**

Four (4) indicator crashes occurred at this location, however no more than two indicator crashes occurred per year, therefore these crashes are considered statistically insignificant by NJDOT. GPI does however, consider the substandard design element to be a contributor to these crashes.

- **Vertical Clearance-Impact(s)**

Correcting the vertical clearance would require either replacing the structures (by the respective bridge owner) or lowering Haddon Avenue by approximately 4 feet. Lowering the roadway would have significant impacts to the surrounding cross streets and neighborhood. Both are outside the scope of the project and would be a substantial cost.

Vertical Clearance crashes are still at risk and this risk is accepted until the structures are replaced.

Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County

C. Cross Slope

Based on survey information collected during CD, the Haddon Avenue travel lane and shoulder cross slopes varies throughout its length. AASHTO states that the minimum plane cross slope for travel lanes and shoulders should be 1.5 percent and 2.0 percent, respectively.

Location Number	Location and Direction (Station/Milepost)	Cross Slope (%)		
		<i>Existing</i>	<i>Proposed</i>	<i>Standard</i>
10	Haddon Avenue Entire Length	Variable	1.5-2.0% in travel lane	1.5-2.0% in travel lane

- Cross Slope-Proposed Safety Measures**

It is anticipated that the cross section be normalized during full depth pavement reconstruction.

- Cross Slope-Crash Analysis**

The indicator crash type for substandard cross slope (below minimum) is wet surface. According to the DE crash analysis 24 indicator crashes occurred during the time period of 2015-2017. These crashes equate to the statewide average for county roads and may be attributable to the substandard design element.

- Cross Slope-Impact(s)**

A normalized section throughout the length of the project along with a new uniform riding surface is expected to improve wet weather conditions. It may also help to reduce same direction rear-end crashes.

D. Shoulder Width

No marked shoulders are present along Haddon Avenue within the project limits. Pavement beyond the traveled way is utilized for on-street parking. This does not meet the minimum width of eight (8) feet per Table 7-3 of AASHTO for an arterial street with design volume over 2,000 vehicles per day. The table below outlines the substandard condition at Location 11, under the PATCO and I-676 Bridges.

Location Number	Location and Direction (Station/Milepost)	Shoulder Type	Width (feet)		
			<i>Exist.</i>	<i>Prop.</i>	<i>Std.</i>
11	Haddon Ave NB & SB under PATCO and I-676 (69+15 - 70+55/50.53 - 50.56)	Paved	0	0	8

**Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County**

- **Shoulder Width-Proposed Safety Measures**

The recent Camden Gateway project has provided for a travel lane in each direction, inside the bridge piers and a bicycle lane outside the bridge piers with no shoulders. A delineated buffer area lies between the travel lanes and bicycle lanes. The bridge piers are contained within the delineated buffer area. The Haddon Avenue PPA proposes that this configuration remain at this time.

Regarding the remaining project limits, while the shoulder width/parking area is not expected to change significantly, the conceptual plans anticipate delineating and restrict parking in areas where not permitted under Title 39 requirements. Additionally, curb extensions at intersections will help to prevent parked vehicle crashes and fixed object crashes in the vicinity of intersections.

- **Shoulder Width-Crash Analysis**

Indicator crash types for substandard outside shoulder width include fixed object, struck parked vehicle, and overturned vehicle, as well as same direction rear end on two lane roadways. According to the DE crash analysis, 1 fixed object indicator crash occurred within the project limits and 1 struck parked vehicle indicator crash occurred, 0 overturned vehicles occurred, and 0 same direction rear end crashes occurred on Haddon Avenue under I-676. Fixed object and struck parked vehicle crashes exceed the statewide averages, however an average of less than two crashes per year occurred for each crash type.

- **Shoulder Width-Impact(s)**

Conditions that reduce same direction rear-end crashes will not be improved in terms of shoulder width; however, a new pavement surface may help to reduce these crashes.

Conclusion

While the Preliminary Preferred Alternative (PPA) will maintain the substandard stopping sight distance at seven intersections, maintain the substandard vertical clearance under the DRPA/PATCO and I676 bridge structures, maintain the substandard cross slope of the roadway and maintain the substandard shoulder width under the DRPA/PATCO and I676 Bridges, the PPA will improve the overall safety of the roadway by improving the roadway surface, line striping, traffic signals, handicap ramps and crosswalks throughout the corridor. In addition, providing curb extensions for crosswalks and bus stops at locations within the corridor will improve pedestrian and vehicular safety and meet Camden County's Complete Streets Policy. In conclusion, *maintaining the existing substandard design values will not result in degrading the relative safety of the roadway.*

**Reasonable Assurance of Design Exception Approval
Haddon Avenue (CR 561) Concept Development Study
Euclid Avenue to Newton Avenue,
City of Camden, Camden County**

If you have any questions regarding this matter, please do not hesitate to contact me at kevin.becica@camdencounty.com or (856) 566-2971.

Very Truly Yours,



**Ms. Kevin Becica, PE, PP, CME
Camden County Public Works**

KB/kb

Cc: John Wolick, Director of Camden County Public Works Department, via email
Barbara Holcomb, Freeholder Liaison to the Camden County Public Works Department, via email
Dominic Vesper, Jr., Deputy County Administrator, via email
Kathy Cullen, Cooper's Ferry Partnership, via email
Joseph Myers, Cooper's Ferry Partnership, via email
Nenebert Gonzales, NJDOT Local Aid, via email
Lauren Coe, NJDOT Local Aid, via email
\\10.1.7.85\company2\public works\highway\engineering\current projects\561 haddonfield berlin rd_s egg
harbor\561;8;laif.cd.2018\correspondence\haddon.ave.cd.design exeptions.kb.appr.docx

APPENDIX O

PRELIMINARY COST ESTIMATES



100 Corporate Drive,
Suite 301
Lebanon, NJ 08833
(908) 236-9001

Project: 2018674 - Haddon Avenue CD
Sheet No: 1 of 1
Created by: MJC Date: 4/30/2019
Checked By: RMB Date: 5/3/2019
Updated: JS (Rev. 2) Date: 12/11/19, 6/16/20

Haddon Avenue (CR 561) Concept Development Study - Preliminary Preferred Alternative (PPA)

ENGINEER'S ESTIMATE - CD REPORT					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL	\$ 75,000.00	\$ 75,000.00
152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL	\$ 20,000.00	\$ 20,000.00
152015P	POLLUTION LIABILITY	DOLL	DOLL	\$ 6,500.00	\$ 6,500.00
153003P	PROGRESS SCHEDULE	LS	LS	\$ 15,000.00	\$ 15,000.00
153005M	PROGRESS SCHEDULE UPDATE	UNIT	12	\$ 500.00	\$ 6,000.00
154003P	MOBILIZATION	LS	LS	\$ 1,400,000.00	\$ 1,400,000.00
155006M	FIELD OFFICE TYPE B SET UP	UNIT	1	\$ 30,000.00	\$ 30,000.00
155024M	FIELD OFFICE TYPE B MAINTENANCE	MO	27	\$ 2,500.00	\$ 67,500.00
157004M	CONSTRUCTION LAYOUT	DOLL	DOLL	\$ 160,000.00	\$ 160,000.00
159005M	TRAFFIC CONTROL	LS	LS	\$ 820,000.00	\$ 820,000.00
161003P	FINAL CLEANUP	LS	LS	\$ 17,500.00	\$ 17,500.00
201003P	CLEARING SITE	LS	LS	\$ 220,000.00	\$ 220,000.00
	Subtotal Lump Sum and Field Office				\$ 2,837,500.00
202015P	EXCAVATION, REGULATED MATERIAL	CY	4,662	\$ 30.00	\$ 139,860.00
202021P	REMOVAL OF PAVEMENT	SY	27,968	\$ 20.00	\$ 559,360.00
202024M	DISPOSAL OF REGULATED MATERIAL	TON	8,496	\$ 50.00	\$ 424,800.00
302036P	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	27,968	\$ 12.00	\$ 335,616.00
401009P	HMA MILLING, 3" OR LESS	SY	3,644	\$ 10.00	\$ 36,440.00
401027M	POLYMERIZED JOINT ADHESIVE	LF	36,625	\$ 1.00	\$ 36,625.00
401030M	TACK COAT	GAL	4,745	\$ 3.00	\$ 14,235.00
401036M	PRIME COAT	GAL	9,790	\$ 1.00	\$ 9,790.00
401054M	HOT MIX ASPHALT 12.5 M 64 SURFACE COURSE	TON	3,636	\$ 105.00	\$ 381,780.00
401096M	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON	9,649	\$ 100.00	\$ 964,900.00
	Subtotal Pavement				\$ 2,903,406.00
606012P	CONCRETE SIDEWALK, 4" THICK	SY	11,183	\$ 65.00	\$ 726,895.00
607018P	9" X 16" CONCRETE VERTICAL CURB	LF	9,860	\$ 30.00	\$ 295,800.00
	Subtotal Sidewalk and Curb				\$ 1,022,695.00
610003M	TRAFFIC STRIPES, 4"	LF	23,270	\$ 1.00	\$ 23,270.00
610007M	TRAFFIC STRIPES, 8"	LF	2,735	\$ 1.00	\$ 2,735.00
610009M	TRAFFIC MARKINGS	SF	24	\$ 30.00	\$ 720.00
610011M	TRAFFIC MARKINGS, LINES	LF	455	\$ 6.00	\$ 2,730.00
	Subtotal Striping				\$ 29,455.00
601120P	12" REINFORCED CONCRETE PIPE	LF	972	\$ 100.00	\$ 97,200.00
601122P	15" REINFORCED CONCRETE PIPE	LF	2,188	\$ 120.00	\$ 262,560.00
601124P	18" REINFORCED CONCRETE PIPE	LF	3,822	\$ 110.00	\$ 420,420.00
601126P	21" REINFORCED CONCRETE PIPE	LF	3,552	\$ 130.00	\$ 461,760.00
601128P	24" REINFORCED CONCRETE PIPE	LF	2,865	\$ 160.00	\$ 458,400.00
601130P	27" REINFORCED CONCRETE PIPE	LF	791	\$ 230.00	\$ 181,930.00
601132P	30" REINFORCED CONCRETE PIPE	LF	514	\$ 200.00	\$ 102,800.00
601134P	36" REINFORCED CONCRETE PIPE	LF	1,191	\$ 270.00	\$ 321,570.00
	STORMWATER PIPE LINING, 20"	LF	93	\$ 170.00	\$ 15,810.00
	STORMWATER PIPE LINING, 27"	LF	3	\$ 240.00	\$ 720.00
	STORMWATER PIPE LINING, 36"	LF	45	\$ 330.00	\$ 14,850.00
602012M	INLET, TYPE B	UNIT	91	\$ 6,000.00	\$ 546,000.00
602057M	MANHOLE, 5' DIAMETER	UNIT	26	\$ 7,000.00	\$ 182,000.00
602060M	MANHOLE, 6' DIAMETER	UNIT	27	\$ 8,500.00	\$ 229,500.00
652417M	SANITARY SEWER SERVICE CONNECTION	UNIT	274	\$ 2,650.00	\$ 726,100.00
	Subtotal CSO Separation				\$ 4,021,620.00
-	TREE PLANTINGS	UNIT	97	\$ 300.00	\$ 29,100.00
-	GREEN INFRASTRUCTURE AREAS	SF	5775	\$ 320.00	\$ 1,848,000.00
-	SIGNALIZED INTERSECTIONS	LS	6	\$ 250,000.00	\$ 1,500,000.00
-	DECORATIVE LIGHTING	LS	1	\$ 890,000.00	\$ 890,000.00
	MURAL RESTORATION, HADDON AVE AT MT EPHRAIM AVE	LS	1	\$ 75,000.00	\$ 75,000.00
	Subtotal Other				\$ 4,342,100.00
	Subtotal - All Items				\$ 15,156,776.00
	Contingencies (10%)				\$ 1,515,677.60
	TOTAL				\$ 16,672,453.60

Cost Estimate Summary

Haddon Avenue, Euclid Avenue to Newton Avenue

Camden City, Camden County

Preliminary Preferred Alternative (PPA)

CLASSIFICATION NO. 1 - NEW CONSTRUCTION/MAJOR RECONSTRUCTION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		4.00	
\$16,672,454	1.015	1.10	
Project Total (NJDOT 2017 Bids)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$18,614,794

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3
Over 50	1.5%	4

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	28.40%
1.0 to 5.0	17.60%
5.0 to 10.0	12.20%
10.0 & above	9.50%
CONSTRUCTION ENGINEERING AMOUNT = \$1,768,405	

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$0
---------------------------------	---	-----

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$18,614,794	0
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)
UTILITIES RELOCATION COST	
=	\$0

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
-------------------	---	--------------

If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$18,614,794
Construction Engineering (CE)	\$1,768,405
Construction Change Order Contingencies	\$0
Utilities Relocation Cost	\$0
Total Construction Cost	\$20,383,200
Right of Way Cost	Not Included



100 Corporate Drive,
Suite 301
Lebanon, NJ 08833
(908) 236-9001

Project: 2018674 - Haddon Avenue CD
Sheet No: 1 of 1
Created by: MJC Date: 4/30/2019
Checked By: RMB Date: 5/3/2019
Updated: JS (Rev. 3) Date: 9/10/19, 12/11/19, 6/22/20

Haddon Avenue (CR 561) Concept Development Study - Alternative 1

ENGINEER'S ESTIMATE - CD REPORT					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL	\$ 75,000.00	\$ 75,000.00
152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL	\$ 20,000.00	\$ 20,000.00
152015P	POLLUTION LIABILITY	DOLL	DOLL	\$ 6,500.00	\$ 6,500.00
153003P	PROGRESS SCHEDULE	LS	LS	\$ 15,000.00	\$ 15,000.00
153005M	PROGRESS SCHEDULE UPDATE	UNIT	12	\$ 500.00	\$ 6,000.00
154003P	MOBILIZATION	LS	LS	\$ 1,400,000.00	\$ 1,400,000.00
155006M	FIELD OFFICE TYPE B SET UP	UNIT	1	\$ 30,000.00	\$ 30,000.00
155024M	FIELD OFFICE TYPE B MAINTENANCE	MO	27	\$ 2,500.00	\$ 67,500.00
157004M	CONSTRUCTION LAYOUT	DOLL	DOLL	\$ 160,000.00	\$ 160,000.00
159005M	TRAFFIC CONTROL	LS	LS	\$ 820,000.00	\$ 820,000.00
161003P	FINAL CLEANUP	LS	LS	\$ 17,500.00	\$ 17,500.00
201003P	CLEARING SITE	LS	LS	\$ 220,000.00	\$ 220,000.00
	Subtotal Lump Sum and Field Office				\$ 2,837,500.00
202015P	EXCAVATION, REGULATED MATERIAL	CY	4,662	\$ 30.00	\$ 139,860.00
202021P	REMOVAL OF PAVEMENT	SY	27,968	\$ 20.00	\$ 559,360.00
202024M	DISPOSAL OF REGULATED MATERIAL	TON	8,496	\$ 50.00	\$ 424,800.00
302036P	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	27,968	\$ 12.00	\$ 335,616.00
401009P	HMA MILLING, 3" OR LESS	SY	3,644	\$ 10.00	\$ 36,440.00
401027M	POLYMERIZED JOINT ADHESIVE	LF	36,625	\$ 1.00	\$ 36,625.00
401030M	TACK COAT	GAL	4,745	\$ 3.00	\$ 14,235.00
401036M	PRIME COAT	GAL	9,790	\$ 1.00	\$ 9,790.00
401054M	HOT MIX ASPHALT 12.5 M 64 SURFACE COURSE	TON	3,636	\$ 105.00	\$ 381,780.00
401096M	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON	9,649	\$ 100.00	\$ 964,900.00
	Subtotal Pavement				\$ 2,903,406.00
606012P	CONCRETE SIDEWALK, 4" THICK	SY	11,183	\$ 65.00	\$ 726,895.00
607018P	9" X 16" CONCRETE VERTICAL CURB	LF	9,860	\$ 30.00	\$ 295,800.00
	Subtotal Sidewalk and Curb				\$ 1,022,695.00
610003M	TRAFFIC STRIPES, 4"	LF	23,270	\$ 1.00	\$ 23,270.00
610007M	TRAFFIC STRIPES, 8"	LF	2,735	\$ 1.00	\$ 2,735.00
610009M	TRAFFIC MARKINGS	SF	24	\$ 30.00	\$ 720.00
610011M	TRAFFIC MARKINGS, LINES	LF	455	\$ 6.00	\$ 2,730.00
	Subtotal Striping				\$ 29,455.00
601120P	12" REINFORCED CONCRETE PIPE	LF	972	\$ 100.00	\$ 97,200.00
601122P	15" REINFORCED CONCRETE PIPE	LF	2,188	\$ 120.00	\$ 262,560.00
601124P	18" REINFORCED CONCRETE PIPE	LF	3,822	\$ 110.00	\$ 420,420.00
601126P	21" REINFORCED CONCRETE PIPE	LF	3,552	\$ 130.00	\$ 461,760.00
601128P	24" REINFORCED CONCRETE PIPE	LF	2,865	\$ 160.00	\$ 458,400.00
601130P	27" REINFORCED CONCRETE PIPE	LF	791	\$ 230.00	\$ 181,930.00
601132P	30" REINFORCED CONCRETE PIPE	LF	514	\$ 200.00	\$ 102,800.00
601134P	36" REINFORCED CONCRETE PIPE	LF	1,191	\$ 270.00	\$ 321,570.00
	STORMWATER PIPE LINING, 20"	LF	93	\$ 170.00	\$ 15,810.00
	STORMWATER PIPE LINING, 27"	LF	3	\$ 240.00	\$ 720.00
	STORMWATER PIPE LINING, 36"	LF	45	\$ 330.00	\$ 14,850.00
602012M	INLET, TYPE B	UNIT	91	\$ 6,000.00	\$ 546,000.00
602057M	MANHOLE, 5' DIAMETER	UNIT	26	\$ 7,000.00	\$ 182,000.00
602060M	MANHOLE, 6' DIAMETER	UNIT	27	\$ 8,500.00	\$ 229,500.00
652417M	SANITARY SEWER SERVICE CONNECTION	UNIT	274	\$ 2,650.00	\$ 726,100.00
	Subtotal CSO Separation				\$ 4,021,620.00
-	TREE PLANTINGS	UNIT	97	\$ 300.00	\$ 29,100.00
-	GREEN INFRASTRUCTURE AREAS	SF	5775	\$ 320.00	\$ 1,848,000.00
-	SIGNALIZED INTERSECTIONS	LS	6	\$ 250,000.00	\$ 1,500,000.00
-	DECORATIVE LIGHTING	LS	1	\$ 890,000.00	\$ 890,000.00
	MURAL RESTORATION, HADDON AVE AT MT EPHRAIM AVE	LS	1	\$ 75,000.00	\$ 75,000.00
	Subtotal Other				\$ 4,342,100.00
	Subtotal - All Items				\$ 15,156,776.00
	Contingencies (10%)				\$ 1,515,677.60
	TOTAL				\$ 16,672,453.60

Cost Estimate Summary

Haddon Avenue, Euclid Avenue to Newton Avenue

Camden City, Camden County

Alternative No. 1

CLASSIFICATION NO. 1 - NEW CONSTRUCTION/MAJOR RECONSTRUCTION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		4.00	
\$16,672,454	1.015	1.10	
Project Total (NJDOT 2017 Bids)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$18,614,794

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3
Over 50	1.5%	4

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	28.40%
1.0 to 5.0	17.60%
5.0 to 10.0	12.20%
10.0 & above	9.50%
CONSTRUCTION ENGINEERING AMOUNT	
	= \$1,768,405

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$0
---------------------------------	---	-----

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$18,614,794	0
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)
UTILITIES RELOCATION COST	
	= \$0

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
If there is no ROW cost on the project indicate "No ROW" the box		

SUMMARY

Construction Cost Estimate	\$18,614,794
Construction Engineering (CE)	\$1,768,405
Construction Change Order Contingencies	\$0
Utilities Relocation Cost	\$0
Total Construction Cost	\$20,383,200
Right of Way Cost	Not Included
Total Project Cost	\$20,383,200



100 Corporate Drive,
Suite 301
Lebanon, NJ 08833
(908) 236-9001

Project: 2018674 - Haddon Avenue CD
Sheet No: 1 of 1
Created by: MJC Date: 4/30/2019
Checked By: RMB Date: 5/3/2019
Updated: JS (Rev. 2) Date: 12/11/19, 6/22/20

Haddon Avenue (CR 561) Concept Development Study - Alternative 2

ENGINEER'S ESTIMATE - CD REPORT					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL	\$ 75,000.00	\$ 75,000.00
152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL	\$ 20,000.00	\$ 20,000.00
152015P	POLLUTION LIABILITY	DOLL	DOLL	\$ 6,500.00	\$ 6,500.00
153003P	PROGRESS SCHEDULE	LS	LS	\$ 15,000.00	\$ 15,000.00
153005M	PROGRESS SCHEDULE UPDATE	UNIT	12	\$ 500.00	\$ 6,000.00
154003P	MOBILIZATION	LS	LS	\$ 1,400,000.00	\$ 1,400,000.00
155006M	FIELD OFFICE TYPE B SET UP	UNIT	1	\$ 30,000.00	\$ 30,000.00
155024M	FIELD OFFICE TYPE B MAINTENANCE	MO	27	\$ 2,500.00	\$ 67,500.00
157004M	CONSTRUCTION LAYOUT	DOLL	DOLL	\$ 160,000.00	\$ 160,000.00
159005M	TRAFFIC CONTROL	LS	LS	\$ 820,000.00	\$ 820,000.00
161003P	FINAL CLEANUP	LS	LS	\$ 17,500.00	\$ 17,500.00
201003P	CLEARING SITE	LS	LS	\$ 220,000.00	\$ 220,000.00
	Subtotal Lump Sum and Field Office				\$ 2,837,500.00
202015P	EXCAVATION, REGULATED MATERIAL	CY	4,843	\$ 30.00	\$ 145,290.00
202021P	REMOVAL OF PAVEMENT	SY	29,056	\$ 20.00	\$ 581,120.00
202024M	DISPOSAL OF REGULATED MATERIAL	TON	8,826	\$ 50.00	\$ 441,300.00
302036P	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	29,056	\$ 12.00	\$ 348,672.00
401009P	HMA MILLING, 3" OR LESS	SY	2,784	\$ 10.00	\$ 27,840.00
401027M	POLYMERIZED JOINT ADHESIVE	LF	36,625	\$ 1.00	\$ 36,625.00
401030M	TACK COAT	GAL	4,780	\$ 3.00	\$ 14,340.00
401036M	PRIME COAT	GAL	10,170	\$ 1.00	\$ 10,170.00
401054M	HOT MIX ASPHALT 12.5 M 64 SURFACE COURSE	TON	3,662	\$ 105.00	\$ 384,510.00
401096M	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON	10,025	\$ 100.00	\$ 1,002,500.00
	Subtotal Pavement				\$ 2,992,367.00
606012P	CONCRETE SIDEWALK, 4" THICK	SY	10,048	\$ 65.00	\$ 653,120.00
607018P	9" X 16" CONCRETE VERTICAL CURB	LF	9,789	\$ 30.00	\$ 293,670.00
	Subtotal Sidewalk and Curb				\$ 946,790.00
610003M	TRAFFIC STRIPES, 4"	LF	26,325	\$ 1.00	\$ 26,325.00
610007M	TRAFFIC STRIPES, 8"	LF	3,002	\$ 1.00	\$ 3,002.00
610009M	TRAFFIC MARKINGS	SF	604	\$ 30.00	\$ 18,120.00
610011M	TRAFFIC MARKINGS, LINES	LF	431	\$ 6.00	\$ 2,586.00
	Subtotal Striping				\$ 50,033.00
601120P	12" REINFORCED CONCRETE PIPE	LF	972	\$ 100.00	\$ 97,200.00
601122P	15" REINFORCED CONCRETE PIPE	LF	2,188	\$ 120.00	\$ 262,560.00
601124P	18" REINFORCED CONCRETE PIPE	LF	3,822	\$ 110.00	\$ 420,420.00
601126P	21" REINFORCED CONCRETE PIPE	LF	3,552	\$ 130.00	\$ 461,760.00
601128P	24" REINFORCED CONCRETE PIPE	LF	2,865	\$ 160.00	\$ 458,400.00
601130P	27" REINFORCED CONCRETE PIPE	LF	791	\$ 230.00	\$ 181,930.00
601132P	30" REINFORCED CONCRETE PIPE	LF	514	\$ 200.00	\$ 102,800.00
601134P	36" REINFORCED CONCRETE PIPE	LF	1,191	\$ 270.00	\$ 321,570.00
	STORMWATER PIPE LINING, 20"	LF	93	\$ 170.00	\$ 15,810.00
	STORMWATER PIPE LINING, 27"	LF	3	\$ 240.00	\$ 720.00
	STORMWATER PIPE LINING, 36"	LF	45	\$ 330.00	\$ 14,850.00
602012M	INLET, TYPE B	UNIT	91	\$ 6,000.00	\$ 546,000.00
602057M	MANHOLE, 5' DIAMETER	UNIT	26	\$ 7,000.00	\$ 182,000.00
602060M	MANHOLE, 6' DIAMETER	UNIT	27	\$ 8,500.00	\$ 229,500.00
652417M	SANITARY SEWER SERVICE CONNECTION	UNIT	274	\$ 2,650.00	\$ 726,100.00
	Subtotal CSO Separation				\$ 4,021,620.00
-	TREE PLANTINGS	UNIT	97	\$ 300.00	\$ 29,100.00
-	GREEN INFRASTRUCTURE AREAS	SF	5775	\$ 320.00	\$ 1,848,000.00
-	SIGNALIZED INTERSECTIONS	LS	6	\$ 250,000.00	\$ 1,500,000.00
-	DECORATIVE LIGHTING	LS	1	\$ 890,000.00	\$ 890,000.00
	MURAL RESTORATION, HADDON AVE AT MT EPHRAIM AVE	LS	1	\$ 75,000.00	\$ 75,000.00
	Subtotal Other				\$ 4,342,100.00
	Subtotal - All Items				\$ 15,190,410.00
	Contingencies (25%)				\$ 3,797,602.50
	TOTAL				\$ 18,988,012.50

Cost Estimate Summary

Haddon Avenue, Euclid Avenue to Newton Avenue

Camden City, Camden County

Alternative No. 2

CLASSIFICATION NO. 1 - NEW CONSTRUCTION/MAJOR RECONSTRUCTION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		4.00	
\$18,988,013	1.015	1.10	
Project Total (NJDOT 2017 Bids)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$21,200,116

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3
Over 50	1.5%	4

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	28.40%
1.0 to 5.0	17.60%
5.0 to 10.0	12.20%
10.0 & above	9.50%
CONSTRUCTION ENGINEERING AMOUNT = \$2,014,011	

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$0
---------------------------------	---	-----

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$21,200,116	0
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)
UTILITIES RELOCATION COST	
	= \$0

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
If there is no ROW cost on the project indicate "No ROW" the box		

SUMMARY

Construction Cost Estimate	\$21,200,116
Construction Engineering (CE)	\$2,014,011
Construction Change Order Contingencies	\$0
Utilities Relocation Cost	\$0
Total Construction Cost	\$23,214,127
Right of Way Cost	Not Included
Total Project Cost	\$23,214,127



100 Corporate Drive,
Suite 301
Lebanon, NJ 08833
(908) 236-9001

Project: 2018674 - Haddon Avenue CD
Sheet No: 1 of 1
Created by: MJC Date: 4/30/2019
Checked By: RMB Date: 5/3/2019
Updated: JS (Rev. 2) Date: 12/11/19, 6/22/20

Haddon Avenue (CR 561) Concept Development Study - Alternative 3

ENGINEER'S ESTIMATE - CD REPORT					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL	\$ 75,000.00	\$ 75,000.00
152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL	\$ 20,000.00	\$ 20,000.00
152015P	POLLUTION LIABILITY	DOLL	DOLL	\$ 6,500.00	\$ 6,500.00
153003P	PROGRESS SCHEDULE	LS	LS	\$ 15,000.00	\$ 15,000.00
153005M	PROGRESS SCHEDULE UPDATE	UNIT	12	\$ 500.00	\$ 6,000.00
154003P	MOBILIZATION	LS	LS	\$ 1,400,000.00	\$ 1,400,000.00
155006M	FIELD OFFICE TYPE B SET UP	UNIT	1	\$ 30,000.00	\$ 30,000.00
155024M	FIELD OFFICE TYPE B MAINTENANCE	MO	27	\$ 2,500.00	\$ 67,500.00
157004M	CONSTRUCTION LAYOUT	DOLL	DOLL	\$ 160,000.00	\$ 160,000.00
159005M	TRAFFIC CONTROL	LS	LS	\$ 820,000.00	\$ 820,000.00
161003P	FINAL CLEANUP	LS	LS	\$ 17,500.00	\$ 17,500.00
201003P	CLEARING SITE	LS	LS	\$ 220,000.00	\$ 220,000.00
	Subtotal Lump Sum and Field Office				\$ 2,837,500.00
202015P	EXCAVATION, REGULATED MATERIAL	CY	4,843	\$ 30.00	\$ 145,290.00
202021P	REMOVAL OF PAVEMENT	SY	29,056	\$ 20.00	\$ 581,120.00
202024M	DISPOSAL OF REGULATED MATERIAL	TON	8,826	\$ 50.00	\$ 441,300.00
302036P	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	29,056	\$ 12.00	\$ 348,672.00
401009P	HMA MILLING, 3" OR LESS	SY	2,784	\$ 10.00	\$ 27,840.00
401027M	POLYMERIZED JOINT ADHESIVE	LF	36,625	\$ 1.00	\$ 36,625.00
401030M	TACK COAT	GAL	4,780	\$ 3.00	\$ 14,340.00
401036M	PRIME COAT	GAL	10,170	\$ 1.00	\$ 10,170.00
401054M	HOT MIX ASPHALT 12.5 M 64 SURFACE COURSE	TON	3,662	\$ 105.00	\$ 384,510.00
401096M	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON	10,025	\$ 100.00	\$ 1,002,500.00
	Subtotal Pavement				\$ 2,992,367.00
606012P	CONCRETE SIDEWALK, 4" THICK	SY	10,048	\$ 65.00	\$ 653,120.00
607018P	9" X 16" CONCRETE VERTICAL CURB	LF	9,789	\$ 30.00	\$ 293,670.00
	Subtotal Sidewalk and Curb				\$ 946,790.00
610003M	TRAFFIC STRIPES, 4"	LF	19,039	\$ 1.00	\$ 19,039.00
610007M	TRAFFIC STRIPES, 8"	LF	3,002	\$ 1.00	\$ 3,002.00
610009M	TRAFFIC MARKINGS	SF	604	\$ 30.00	\$ 18,120.00
610011M	TRAFFIC MARKINGS, LINES	LF	431	\$ 6.00	\$ 2,586.00
	Subtotal Striping				\$ 42,747.00
601120P	12" REINFORCED CONCRETE PIPE	LF	972	\$ 100.00	\$ 97,200.00
601122P	15" REINFORCED CONCRETE PIPE	LF	2,188	\$ 120.00	\$ 262,560.00
601124P	18" REINFORCED CONCRETE PIPE	LF	3,822	\$ 110.00	\$ 420,420.00
601126P	21" REINFORCED CONCRETE PIPE	LF	3,552	\$ 130.00	\$ 461,760.00
601128P	24" REINFORCED CONCRETE PIPE	LF	2,865	\$ 160.00	\$ 458,400.00
601130P	27" REINFORCED CONCRETE PIPE	LF	791	\$ 230.00	\$ 181,930.00
601132P	30" REINFORCED CONCRETE PIPE	LF	514	\$ 200.00	\$ 102,800.00
601134P	36" REINFORCED CONCRETE PIPE	LF	1,191	\$ 270.00	\$ 321,570.00
	STORMWATER PIPE LINING, 20"	LF	93	\$ 170.00	\$ 15,810.00
	STORMWATER PIPE LINING, 27"	LF	3	\$ 240.00	\$ 720.00
	STORMWATER PIPE LINING, 36"	LF	45	\$ 330.00	\$ 14,850.00
602012M	INLET, TYPE B	UNIT	91	\$ 6,000.00	\$ 546,000.00
602057M	MANHOLE, 5' DIAMETER	UNIT	26	\$ 7,000.00	\$ 182,000.00
602060M	MANHOLE, 6' DIAMETER	UNIT	27	\$ 8,500.00	\$ 229,500.00
652417M	SANITARY SEWER SERVICE CONNECTION	UNIT	274	\$ 2,650.00	\$ 726,100.00
	Subtotal CSO Separation				\$ 4,021,620.00
-	TREE PLANTINGS	UNIT	97	\$ 300.00	\$ 29,100.00
-	GREEN INFRASTRUCTURE AREAS	SF	5775	\$ 320.00	\$ 1,848,000.00
-	SIGNALIZED INTERSECTIONS	LS	6	\$ 250,000.00	\$ 1,500,000.00
-	DECORATIVE LIGHTING	LS	1	\$ 890,000.00	\$ 890,000.00
	MURAL RESTORATION, HADDON AVE AT MT EPHRAIM AVE	LS	1	\$ 75,000.00	\$ 75,000.00
	Subtotal Other				\$ 4,342,100.00
	Subtotal - All Items				\$ 15,183,124.00
	Contingencies (25%)				\$ 3,795,781.00
	TOTAL				\$ 18,978,905.00

Cost Estimate Summary

Haddon Avenue, Euclid Avenue to Newton Avenue

Camden City, Camden County

Alternative No. 3

CLASSIFICATION NO. 1 - NEW CONSTRUCTION/MAJOR RECONSTRUCTION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		4.00	
\$18,978,905	1.015	1.10	
Project Total (NJDOT 2017 Bids)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$21,189,947

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3
Over 50	1.5%	4

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	28.40%
1.0 to 5.0	17.60%
5.0 to 10.0	12.20%
10.0 & above	9.50%
CONSTRUCTION ENGINEERING AMOUNT = \$2,013,045	

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$0
---------------------------------	---	-----

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$21,189,947	0
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)
UTILITIES RELOCATION COST	
=	\$0

If there are no utility relocations on the project indicate "No Utilities" in the box above.

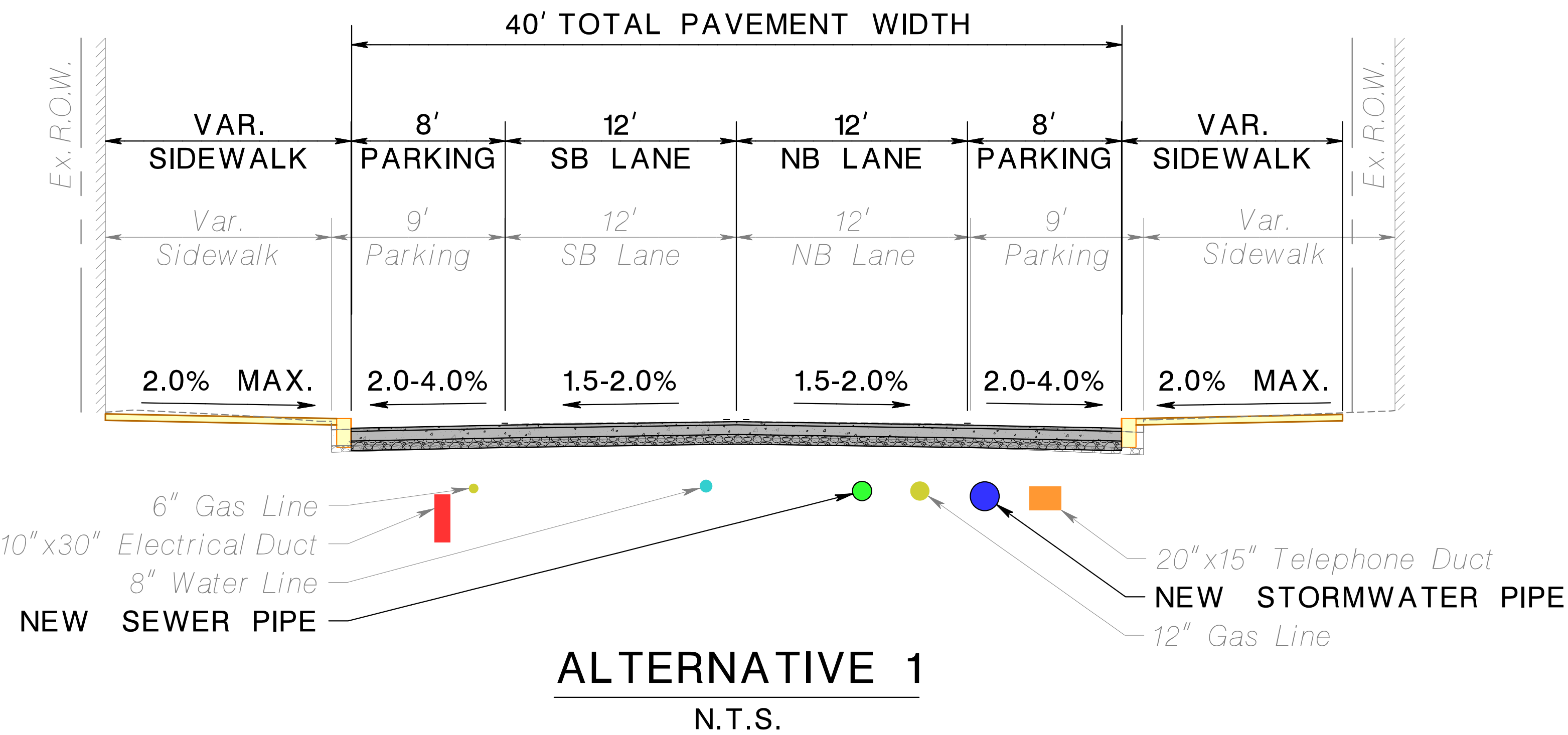
RIGHT OF WAY COST	=	Not Included
If there is no ROW cost on the project indicate "No ROW" the box		

SUMMARY

Construction Cost Estimate	\$21,189,947
Construction Engineering (CE)	\$2,013,045
Construction Change Order Contingencies	\$0
Utilities Relocation Cost	\$0
Total Construction Cost	\$23,202,992
Right of Way Cost	Not Included
Total Project Cost	\$23,202,992

APPENDIX P

CONCEPTUAL PLANS FOR PPA





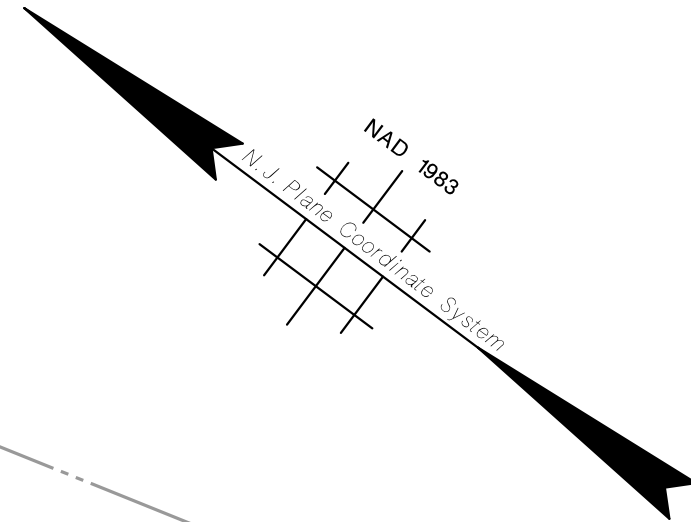
PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

TYPICAL SECTION

1
8

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS	
CONCEPT DEVELOPMENT STUDY HADDON AVENUE (CR 561) IMPROVEMENT PROJECT NEWTON AVENUE (CR 604) TO EUCLID AVENUE CITY OF CAMDEN CAMDEN COUNTY	
PRELIMINARY PREFERRED ALTERNATIVE	
	 Greenman-Pedersen, Inc. Engineering and Construction Services



- HADDON AVENUE AND NEWTON AVENUE (MP 50.67)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - RECONSTRUCT CURB RAMPS

SIDEWALK REPLACEMENT OUTSIDE OF EXISTING R.O.W. LIKELY REQUIRED

RECENTLY CONSTRUCTED IMPROVEMENTS
HADDON AVENUE GATEWAY PROJECT (TYP.)

MATCH LINE A
SEE SHEET 2 OF 7

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

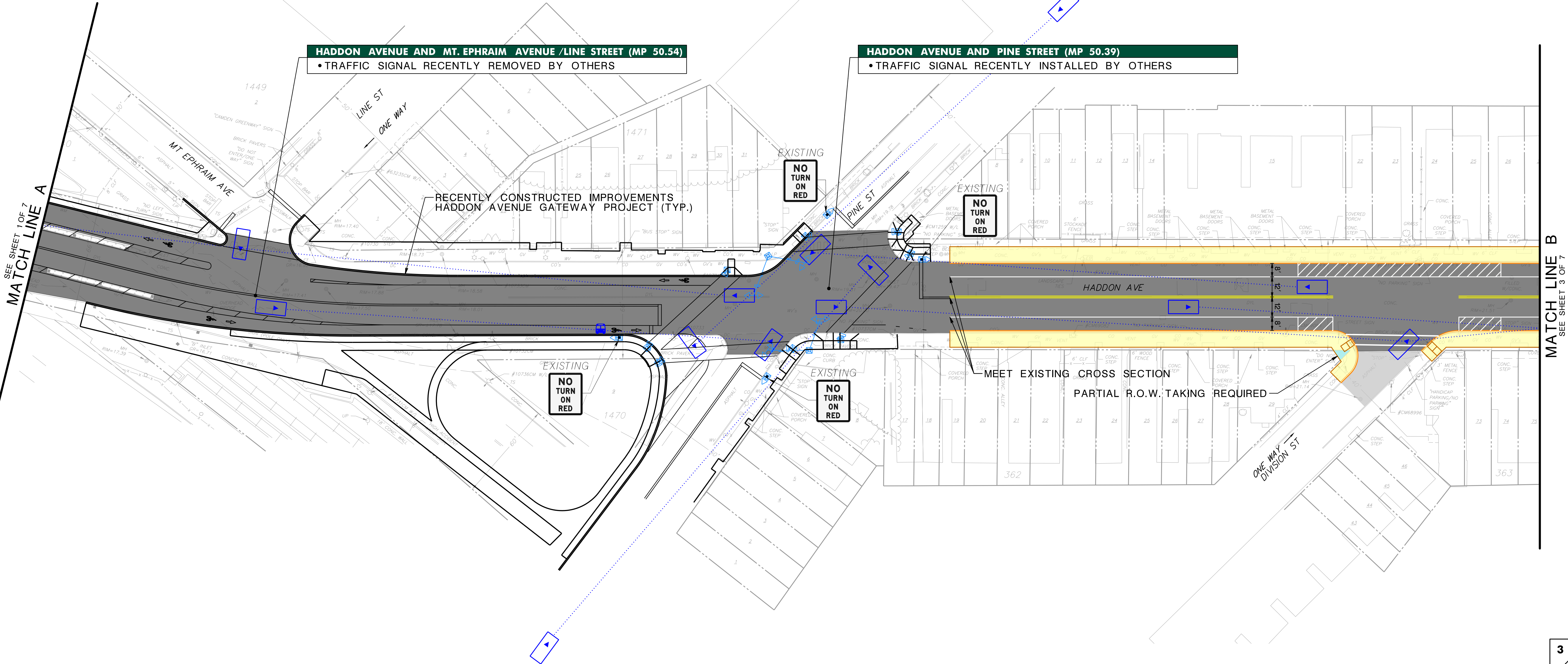
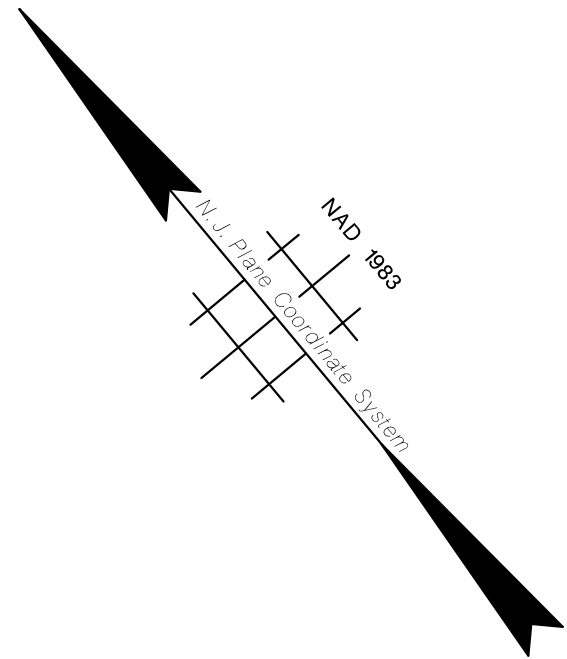
CITY OF CAMDEN
CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services





LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

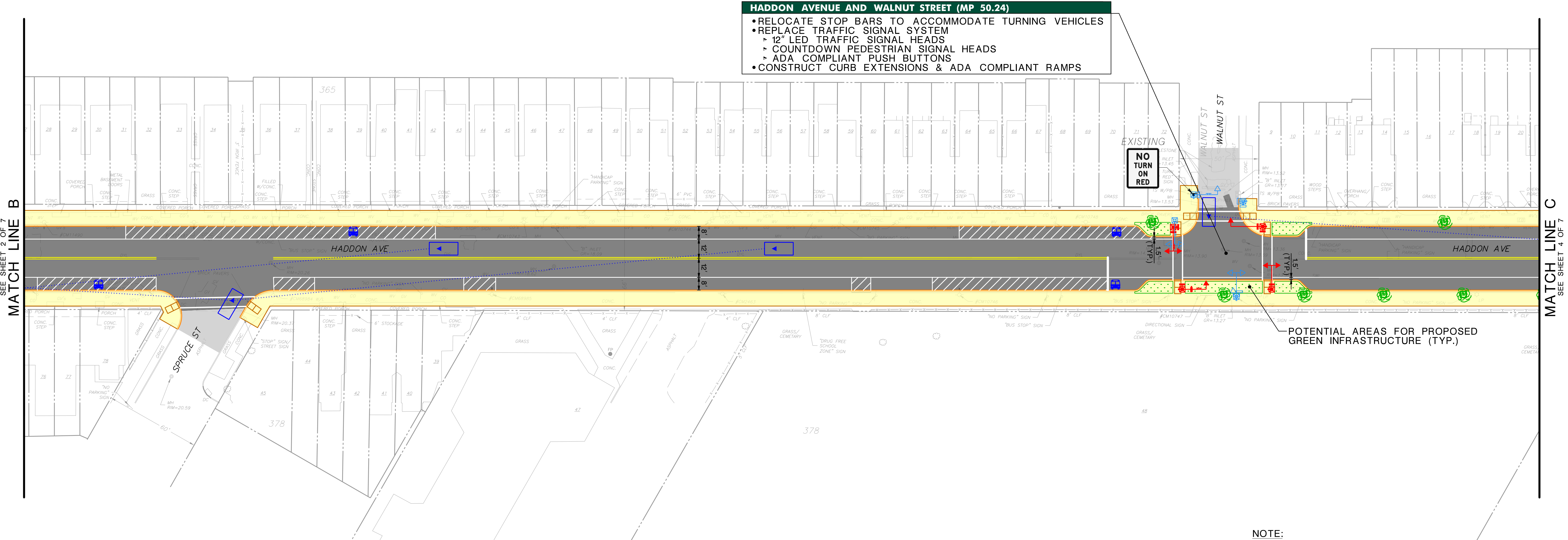
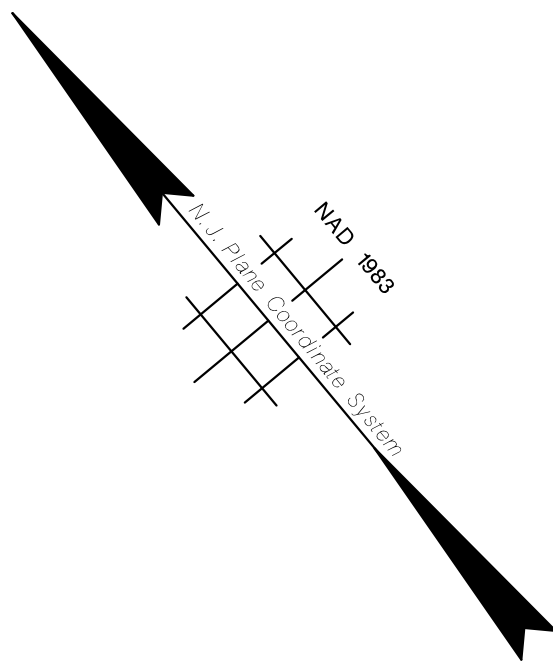
CITY OF CAMDEN
CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services





LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY
AND WILL REQUIRE CAREFUL DESIGN IN
CONJUNCTION WITH PROPOSED LIGHTING.

4

8

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI

Greenman-Pedersen, Inc.

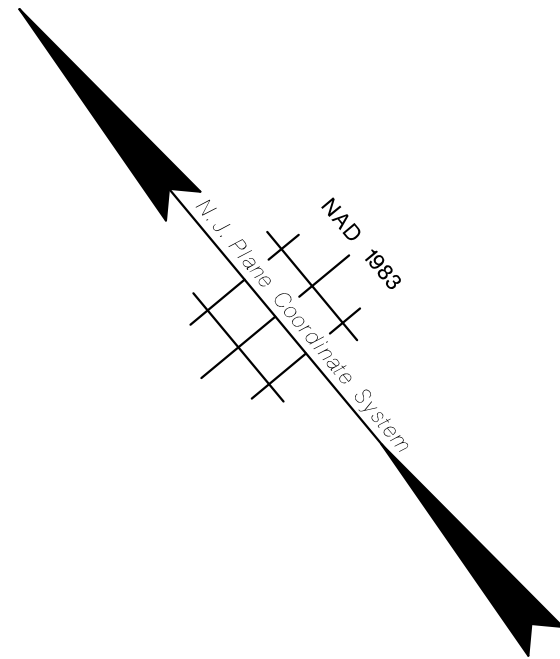
Engineering and Construction Services

30'

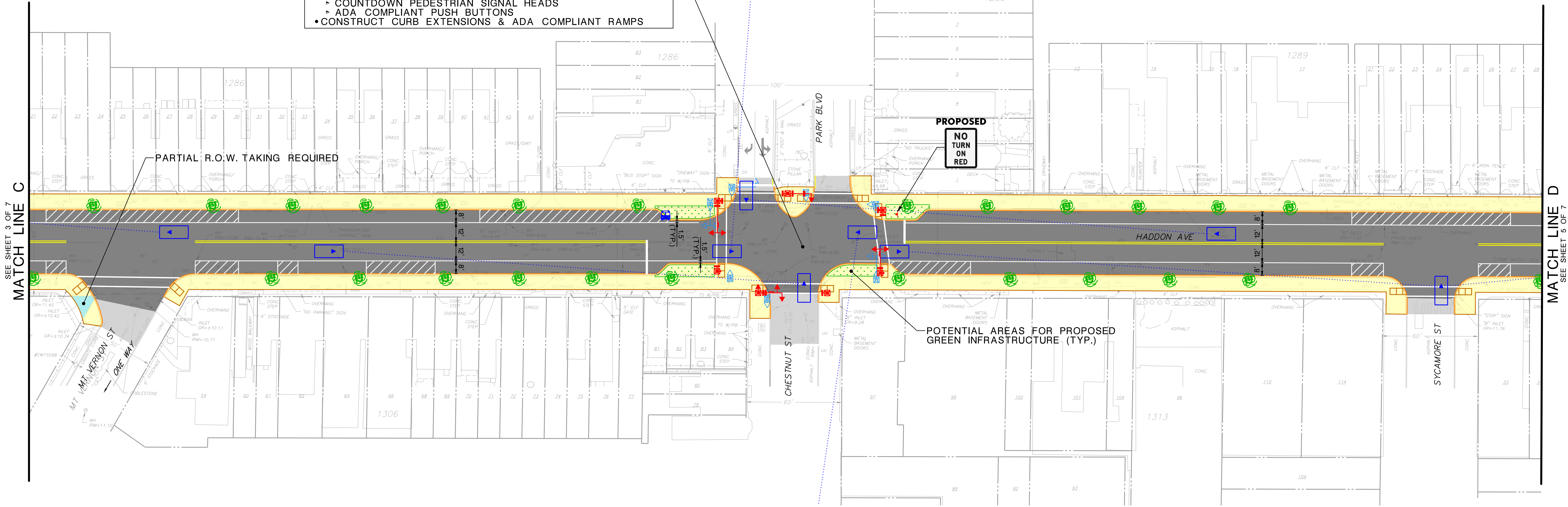
0

30'

60'



- HADDON AVENUE AND CHESTNUT STREET /PARK BOULEVARD (MP 50.11)**
- RELOCATE STOP BARS TO ACCOMMODATE TURNING VEHICLES
 - REPLACE TRAFFIC SIGNAL SYSTEM
 - 12" LED TRAFFIC SIGNAL HEADS
 - COUNTDOWN PEDESTRIAN SIGNAL HEADS
 - ADA COMPLIANT PUSH BUTTONS
 - CONSTRUCT CURB EXTENSIONS & ADA COMPLIANT RAMPS



NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY
AND WILL REQUIRE CAREFUL DESIGN IN
CONJUNCTION WITH PROPOSED LIGHTING.

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED.....	25 MPH
DESIGN SPEED.....	30 MPH
STOPPING SIGHT DISTANCE.....	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN.....	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN.....	335'

5

8

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY


HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI

Greenman-Pedersen, Inc.

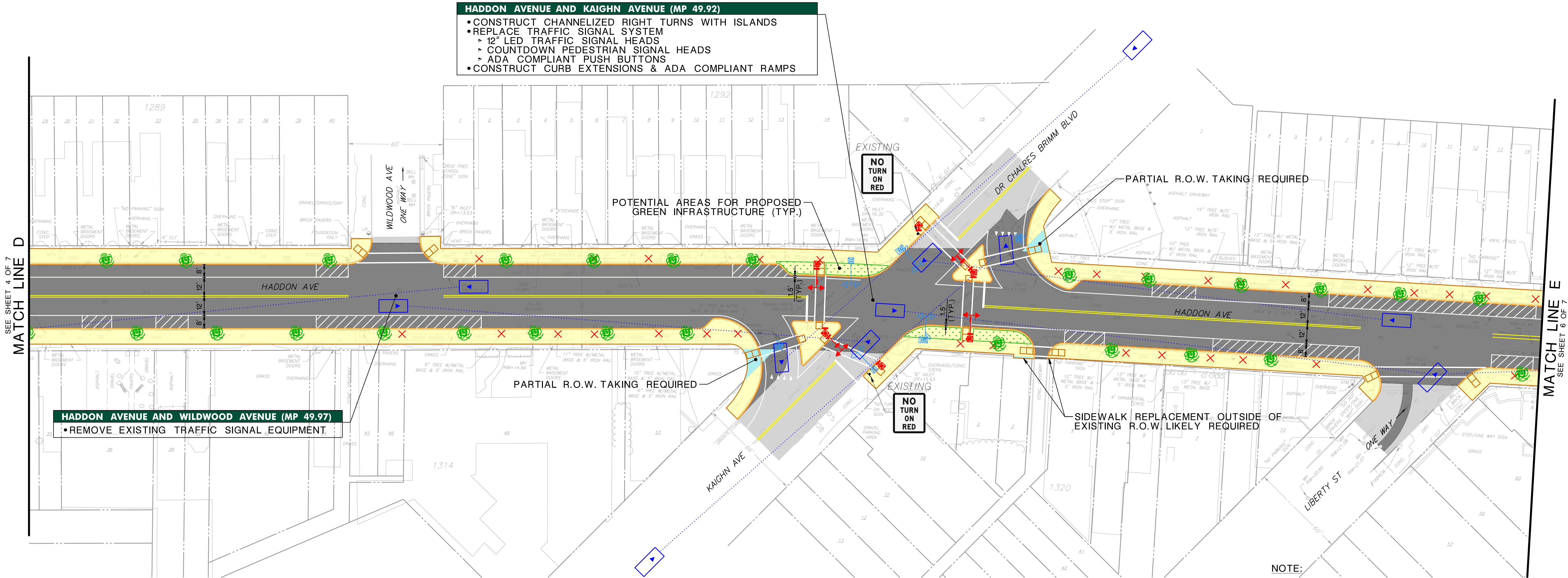
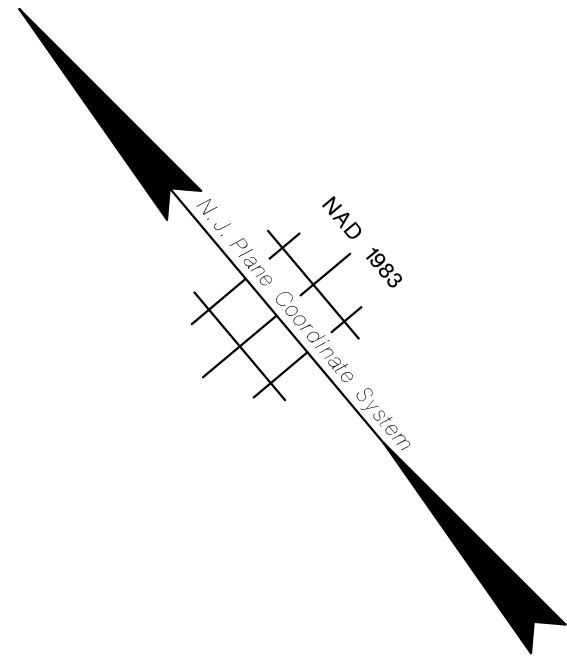
Engineering and Construction Services

30'

0

30'

60'



SEE SHEET 4 OF 7
MATCH LINE D

MATCH LINE E
SEE SHEET 6 OF 7

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY
AND WILL REQUIRE CAREFUL DESIGN IN
CONJUNCTION WITH PROPOSED LIGHTING.

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE

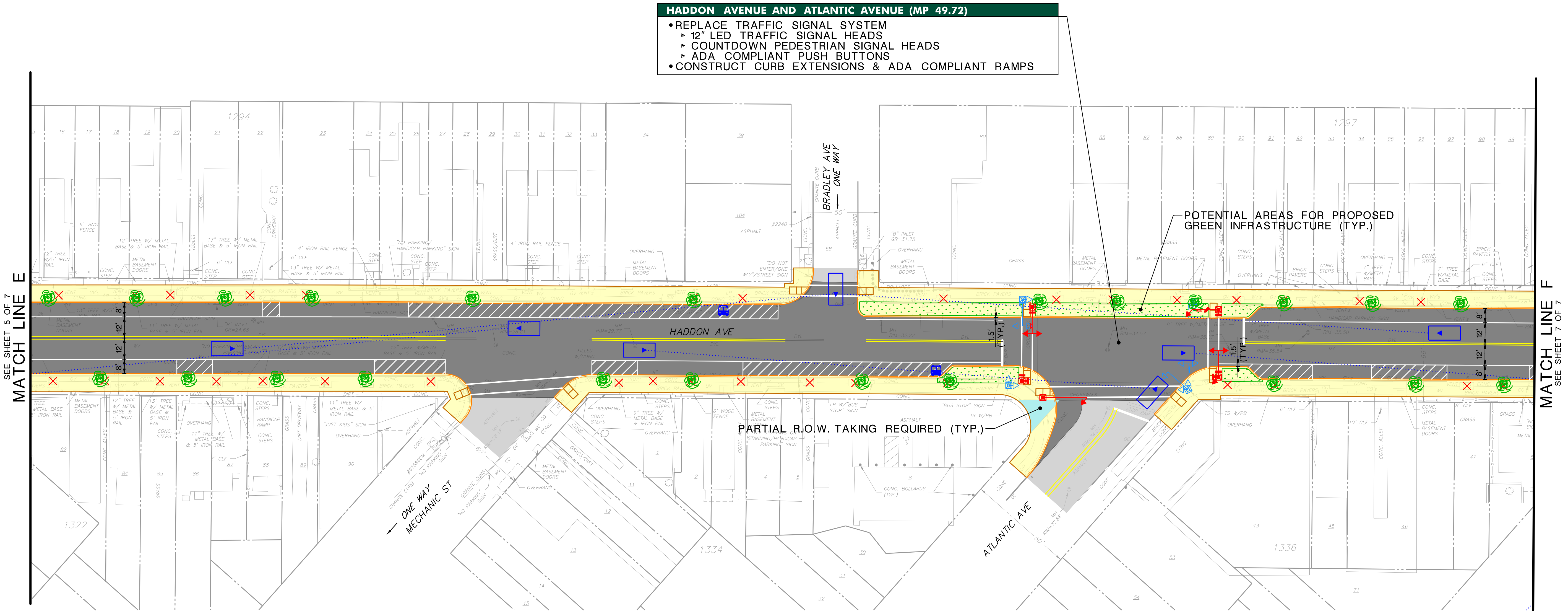
CITY OF CAMDEN
CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services





NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY
AND WILL REQUIRE CAREFUL DESIGN IN
CONJUNCTION WITH PROPOSED LIGHTING.

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM

POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

7

8

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY

HADDON AVENUE (CR 561) IMPROVEMENT PROJECT

NEWTON AVENUE (CR 604) TO EUCLID AVENUE

CITY OF CAMDEN

CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE

GPI

Greenman-Pedersen, Inc.

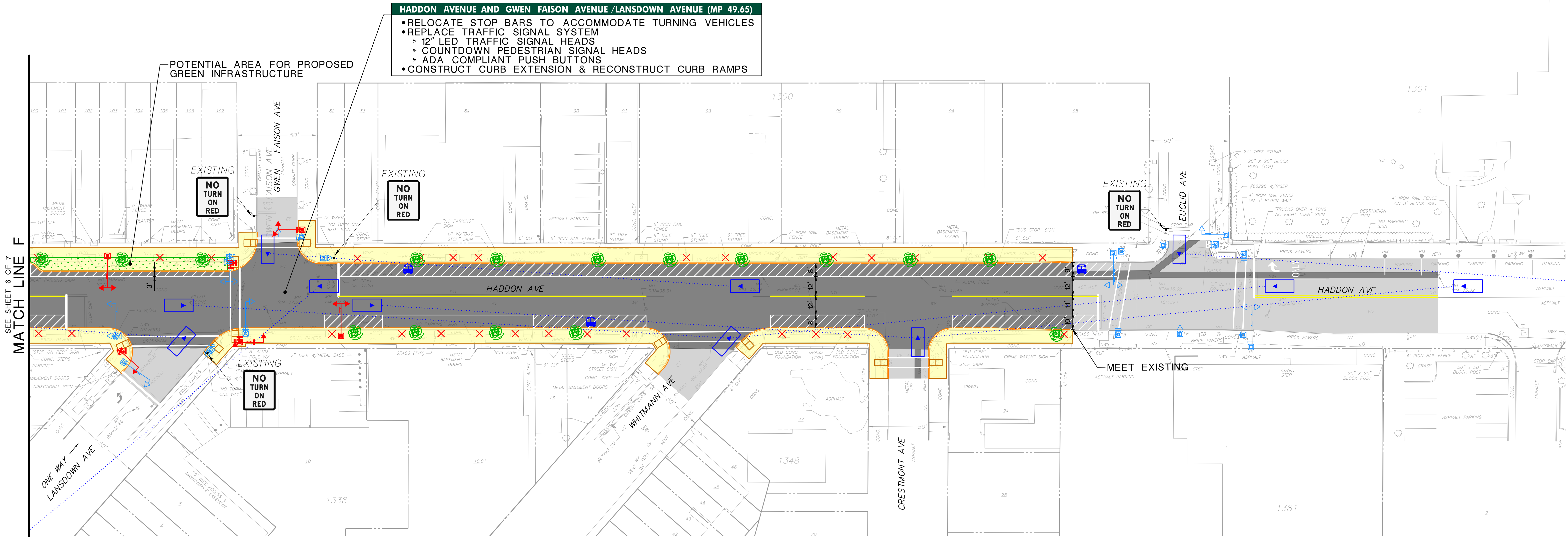
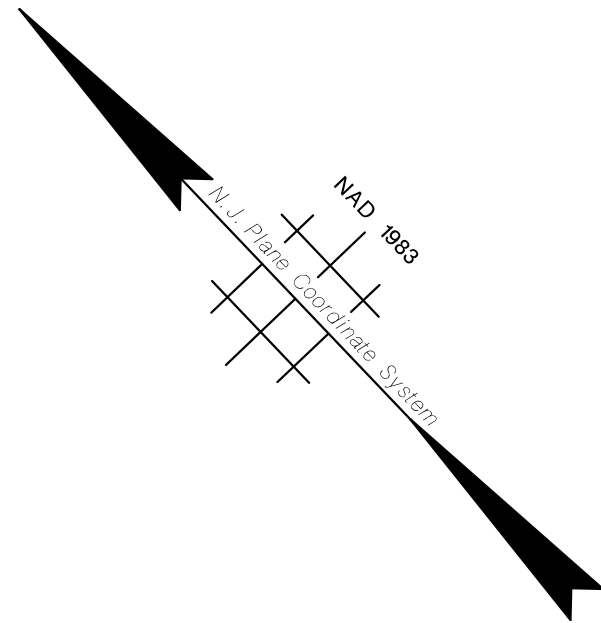
Engineering and Construction Services

30'

0

30'

60'



NOTE:
PROPOSED TREE LOCATIONS ARE PRELIMINARY
AND WILL REQUIRE CAREFUL DESIGN IN
CONJUNCTION WITH PROPOSED LIGHTING.

LEGEND

- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL EQUIPMENT
- EXISTING R.O.W.
- EXISTING BUS STOP
- PROPOSED PAVEMENT RECONSTRUCTION
- PROPOSED PAVEMENT RESURFACING
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STRIPING
- PROPOSED TRAFFIC SIGNAL EQUIPMENT
- PROPOSED TREE REMOVAL
- PROPOSED TREE PLANTING
- TITLE 39 AND BUS STOP PARKING RESTRICTIONS
- INTERSECTION SIGHT DISTANCE

PROPOSED IMPROVEMENTS

- COMPLETE PAVEMENT RECONSTRUCTION
 - REMOVE EXISTING CONCRETE PAVEMENT
 - EXCAVATE SUBGRADE FOR PROPOSED PAVEMENT BOX
 - CONSTRUCT SUBBASE, DENSE GRADED AGGREGATE, AND HMA PAVEMENT BOX
- WIDEN AND RECONSTRUCT EXISTING SIDEWALK
- SEPARATE EXISTING COMBINED STORMWATER AND SEWER SYSTEM


POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE	200'
INTERSECTION SIGHT DISTANCE - RIGHT TURN	290'
INTERSECTION SIGHT DISTANCE - LEFT TURN	335'

88

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE
CITY OF CAMDEN
CAMDEN COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

30'030'60'

STORMWATER PLANTERS



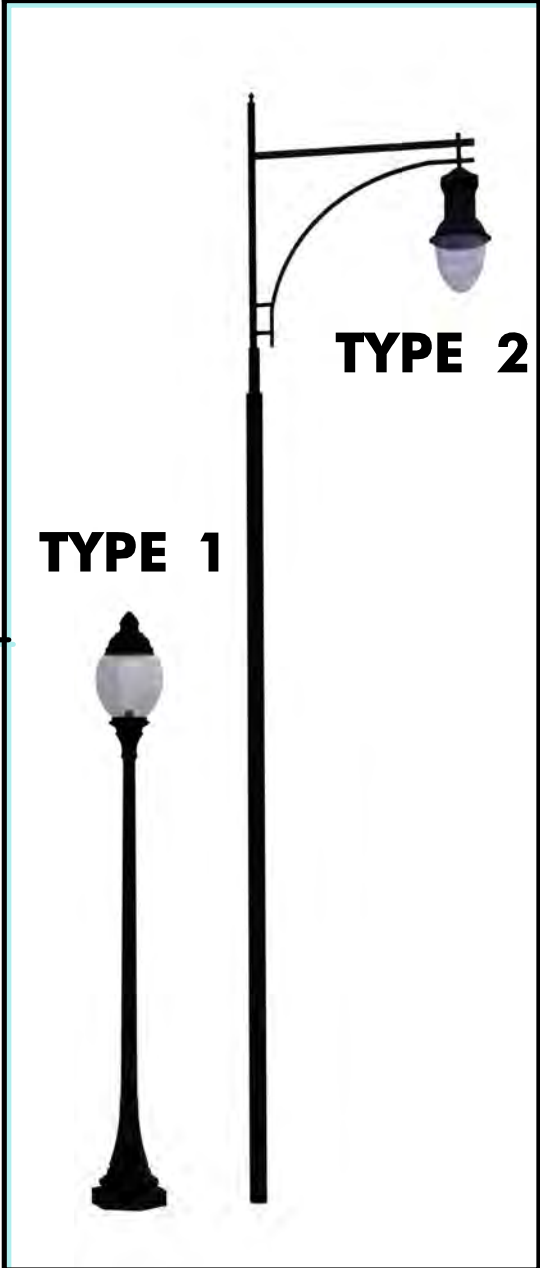
- REDUCES RUNOFF AND POLLUTION INTO THE EXISTING STORMWATER SYSTEM.
- HELPS RECHARGE THE UNDERLAYING WATER TABLE.

STREET FURNITURE



- BENCHES PROVIDE A PLACE FOR REST FOR PEDESTRIANS.
- TRASH BINS HELP KEEP STREET AND SIDEWALK CLEAN.
- OTHER STREET FURNITURE, SUCH AS PLANTERS, BICYCLE RACKS, AND TABLES CAN GREATLY ENHANCE AESTHETICS OF THE CORRIDOR.

ROADWAY AND PEDESTRIAN LIGHTING

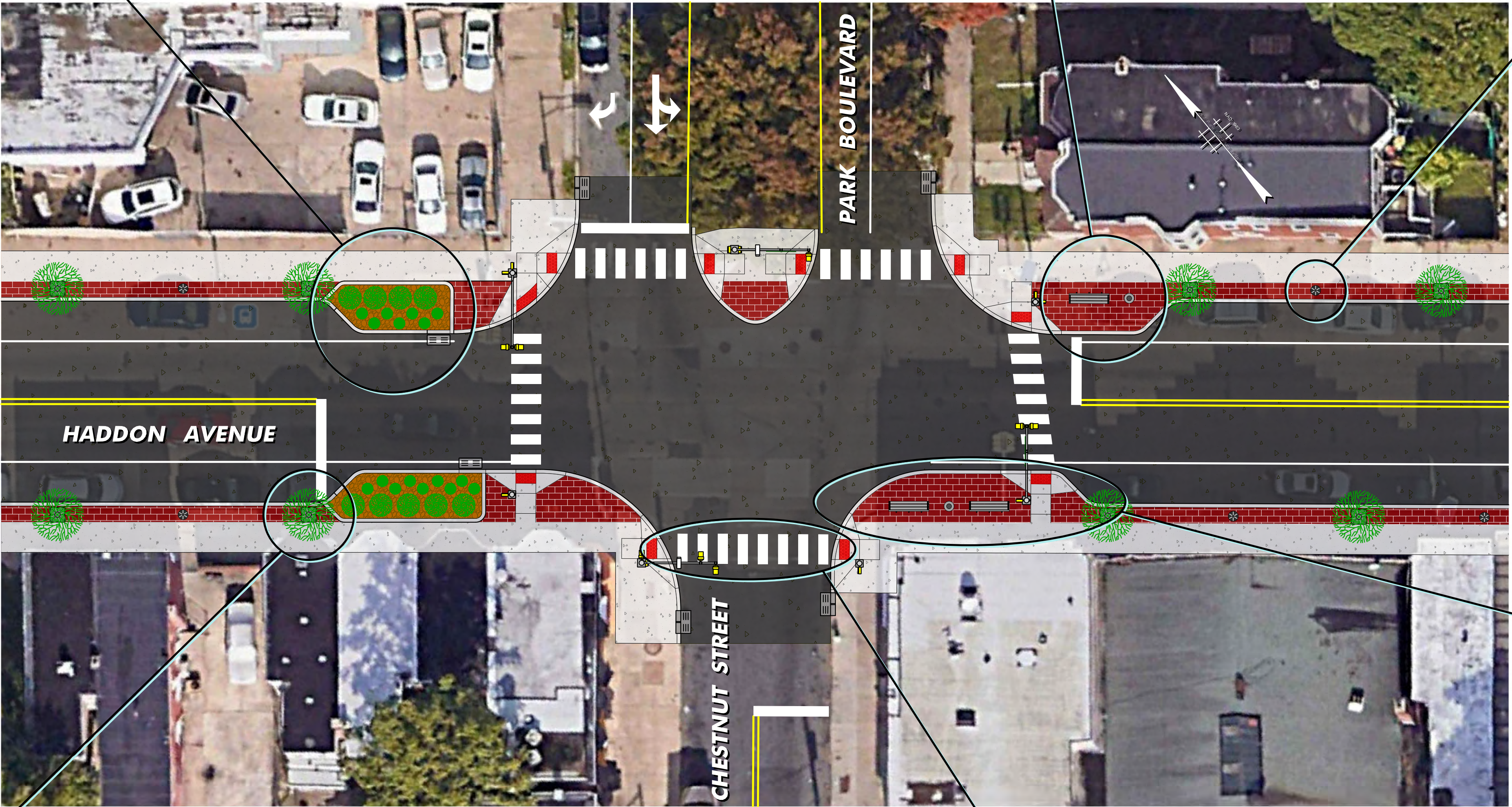


- PROVIDES LIGHTING FOR SIDEWALK, PARKING AREA, AND ROADWAY.
- IMPROVES SAFETY, SECURITY, AND PEDESTRIAN COMFORT.

STREET TREES



- PROVIDES SHADE FOR PEDESTRIANS, ADJACENT BUILDINGS, AND PARKED VEHICLES.
- PROVIDES BUFFER BETWEEN VEHICULAR TRAFFIC AND PEDESTRIANS.
- ABSORBS AIR POLLUTANTS AND GREENHOUSE GASES.
- IMPROVES AESTHETICS OF ROADWAY CORRIDOR.

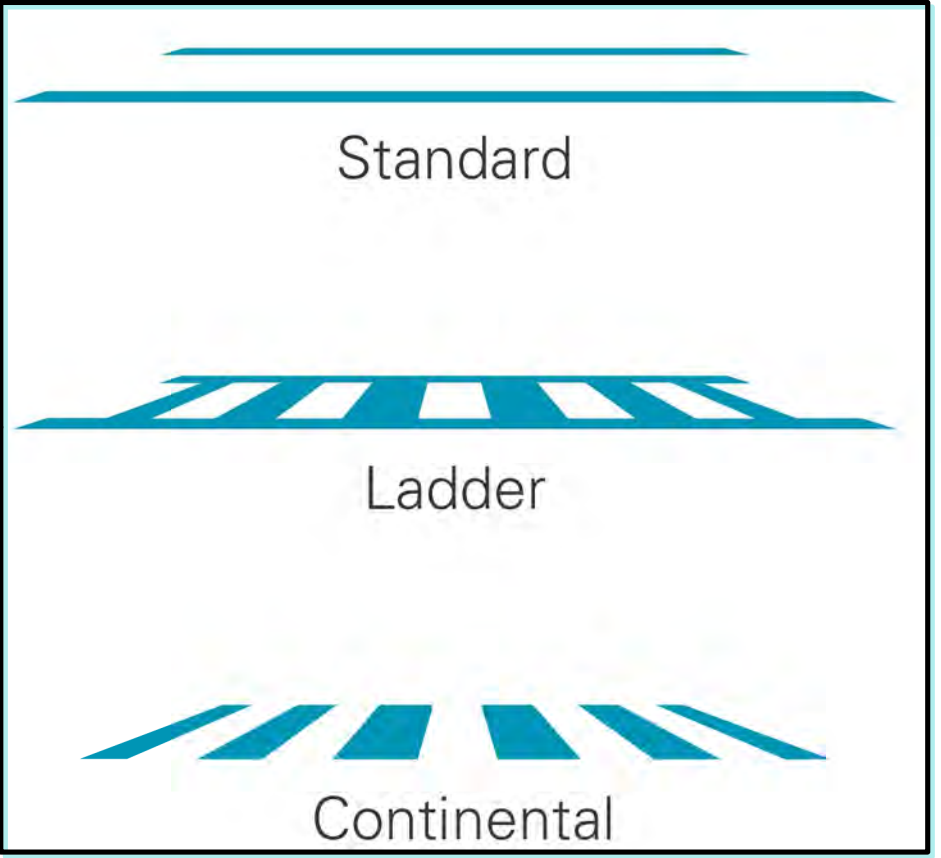


CURB EXTENSIONS



- REDUCES VEHICULAR SPEEDS AT INTERSECTIONS.
- IMPROVES VISIBILITY BETWEEN MOTORISTS AND PEDESTRIANS.
- REDUCES PEDESTRIAN CROSSING DISTANCES.
- PROVIDES ADDITIONAL SPACE FOR STREET FURNITURE AND GREEN INFRASTRUCTURE.

HIGH-VISIBILITY CROSSWALKS



- LADDER AND CONTINENTAL STYLES PROVIDE IMPROVED VISIBILITY OVER STANDARD CROSSWALK MARKINGS.

CAMDEN COUNTY DEPARTMENT OF PUBLIC WORKS

**CONCEPT DEVELOPMENT STUDY
HADDON AVENUE (CR 561) IMPROVEMENT PROJECT
NEWTON AVENUE (CR 604) TO EUCLID AVENUE**

**CITY OF CAMDEN
CAMDEN COUNTY**

STREETSCAPE CONCEPTS



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

N.T.S.

APPENDIX Q

COUNTY AND NJDOT CORRESPONDENCE

Memorandum of Meeting

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: August 7, 2018

Project: Camden County
Haddon Avenue (CR 561) Concept Development

Project No.: 2018674.00

Subject: Kickoff Meeting

Attendees:	<u>Name</u>	<u>Company</u>	<u>Phone</u>
	Kevin Becica	Camden County Engineer	856-555-1234
	Kathy Cullen	Cooper's Ferry Partnership (CFP)	856-757-9154
	Sam Mody	Keller Engineers	856-536-3169
	Brian Smith	Keller Engineers	814-696-7430
	Bernard Boerchers	GPI	908-236-9001
	Dave Kuhn	GPI	908-287-2730
	Julia Steponanko	GPI	908-236-9001
	Dennis Burgeson,	KMA Consulting Engineers (KMA)	609-923-0096
	Ebony Washington	KMA	609-923-0096
	John Chayko	BANC3 Engineering	609-436-5800

A project team kick-off meeting was held for the subject project at the Camden County Department of Public Works' office on July 25, 2018. Those in attendance are listed above.

The purpose of this meeting was to introduce the project, solicit comments, requirements, and/or concerns that address the project need(s). The items discussed are listed on the included agenda. After self-introductions, the following were the questions and comments made during the meeting:

I. Roles and Responsibilities

1. The attendees noted that GPI is prime consultant, Mr. Boerchers will be Project Manager, Ms. Steponanko is Deputy Project Manager and Mr. Kuhn will provide QA/QC support. KMA will be performing all environmental screening/support work for the project. Ms. Washington will be the team leader. BANC3 will be performing survey and mapping for the project. Robert Lee will be team leader.
2. The attendees also noted that Ms. Becica will be Camden County's primary point of contact and Ms. Cullen of Cooper's Ferry Partnership will support Camden County and the project in public outreach/stakeholder coordination activities as well as program management support. Keller Engineers will provide technical support to Cooper's Ferry. GPI will copy Ms. Becica and Ms. Cullen on all project correspondence. GPI asked that Dave Kuhn be copied on all correspondence between Camden County/CFP and GPI.

3. Ms. Becica stated that it will be important for the County/CFP to keep the hospitals aware of the project status and progress. In addition, owners along Haddon Avenue should be informed of any field work in advance of the same.

II. Project Objective

4. Ms. Becica stated that Haddon Avenue is a top priority project for the City of Camden. Redevelopment of Haddon Avenue is key to the overall redevelopment of the medical mile between Cooper University Hospital and Our Lady of Lourdes Medical Center. She also noted the following future and ongoing nearby projects:
 - An RFP has just been issued to perform a marketing/planning study of transportation and land use opportunities for the corridor.
 - A pocket park is being constructed at Mt. Ephraim and Pine Street and can provide some insight to the type of improvements that may be required under this project.
 - Dewberry is currently under contract with the County, performing CD for a HSIP funded Mt Ephraim Ave. safety project.
 - Transit Village development (Phase 1) is also underway at the south end of Haddon Avenue near the Our Lady of Lourdes and the PATCO station. Phase 2 will add more housing, office and retail.
 - A major element of this project is to separate the combined storm/sanitary sewer system. More information provided under Utilities.

III. Scope of Services

5. Survey/Traffic/Crash Data Collection – Mr. Boerchers noted that survey will be a critical element of this project. Ms. Becica added that survey should include locating and sizing inlet grate heads, as sizes are unique to Camden. The attendees noted that intersection corners, curbs heights at intersections, and porch locations will also be important. Mr. Boerchers added that traffic data collection will be performed using Miovision. Crash data will be collected through the NJ Voyager system and supplemented with the latest crash records from the Camden County Police Department.
6. Storm/Sanitary Sewers – Ms. Becica noted that separation of the combined sewer system is a big part of this project. She expects that the separation will result in a new storm sewer and a lining of the existing, brick-lined storm/sanitary sewer to be used as a sanitary sewer only. The City owns the sewer mains and laterals up to the cleanouts. Homeowners owns the laterals from the cleanouts to the homes/buildings. Manholes are welded shut. Ms. Becica noted that a completed separation project in Lanning Square provides a good example of what is likely to be needed on this project. Ms. Becica noted that GPI will need to obtain mapping of the system from the City. A conference call will be scheduled with the City by GPI. Mr. Boerchers noted that GPI intends to hold a meeting in the field with the utility owners.
7. Water Utility – Ms. Becica noted that the water utility within the project limits is American Water. American Water covers from the Delaware River to Cooper River and New Jersey American Water owns from the Cooper River to Pennsauken. A major concern is the depth of the water utilities relative to the pavement surface. At the Vesper Blvd/Haddon Avenue intersection the water main was 10 inches from the top of pavement. The location/depth of the water lines will have an impact on the pavement design.

8. Pavement – Ms. Becica noted that the pavement is constructed of very hard concrete. It may have been constructed on historic fill, contaminated soil, possibly lead contamination. Various pavement design options will need to be considered based on utilities and the existing pavement. Camden County will provide a report on pavement benefit/cost analysis performed by French & Parrello for Erial-Clementon Road.
9. ROW/ADA – Ms. Becica noted that a 4-foot sidewalk width is required under PROWAG. Some buildings may have porches within the ROW. Technical Infeasibility Forms (TIFs) will likely be required eventually and those required should be identified as part of the study.
10. Traffic Signals – Ms. Becica noted that the signals are owned by the City and the City is maintaining the controllers. The City has ramp and signal upgrade projects. No push button installations in place. The vision is to make Haddon Avenue a viable alternative to get in and out of the central business district/downtown area.
11. Purpose and Need Statement – Ms. Cullen stated that the problem statement and purpose and need statement should be developed as a first order of business. GPI will develop a problem statement immediately and draft a Purpose and Need statement once appropriate data is collected and assessed. Ms. Cullen noted that once a problem statement is agreed to by the project team, a stakeholder meeting will be scheduled. This will be targeted for September.
12. Alternatives Analysis – Ms. Becica agreed with Mr. Boerchers that an extensive number of alternatives will not be developed, however it was noted that the project will likely be broken into segments with differing typical sections. Those sections will be determined as we move forward.
13. Substandard Design Elements, Environmental Screening, Selection of the Preliminarily Preferred Alternative and Documentation were not discussed at this meeting.

IV. Public Outreach

14. The attendees noted that Ms. Cullen will lead scheduling of meetings with stakeholders and Public Information Centers. Multiple languages will need to be considered. Ms. Cullen stated that CFP has a list of all business owners and will provide to GPI.

V. Schedule

15. Ms. Cullen stated that Camden County would like the schedule shortened to complete Tasks I-VI within 9 months. GPI will revisit the schedule and submit to the County and CFP for review and approval.

VI. Invoicing

16. Ms. Becica stated that the “Vendor” line should be signed by GPI on all payment vouchers. She provided the voucher payment schedule to GPI and also noted the following:
 - Back up information must be provided for all costs associated with subconsultants.
 - All numbers must match and the vendor address must be on all sheets.
 - First voucher (draft) should be sent to Kevin for review/approval before processing.
 - If any invoice/payment issues, call Kevin directly. Do not call the Purchasing Office.

VII. Progress Reports

Not specifically discussed.

VIII. Action Items Summary

1. GPI to revise and update project schedule to complete Tasks I-VI within 9 months. Schedule will be submitted to Camden County/CFP for review/approval.
2. GPI will draft a Problem Statement and submit to County and CFP.
3. GPI will draft a Purpose and Need Statement and submit to County and CFP.
4. Camden County will provide a copy of French & Parrello pavement B/C analysis for Erial-Clementon Road.
5. CFP will obtain summary crash information from Camden County PD and provide to GPI.
6. CFP will schedule a conference call with City Engineer, Uzo Ahirakwe, Camden County (Kevin Becica), CFP (Kathy Cullen), and GPI to discuss the project and obtain utility information, signal information and any other information that may be valuable.
7. CFP will provide GPI with a list of all business owners for their use in developing the Public Involvement Action Plan.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandum of Conference Call

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: August 28, 2018

Project: Camden County
Haddon Avenue (CR 561) Concept Development

Project No.: 2018674.00

Subject: Coordination with City of Camden

Attendees:	<u>Name</u>	<u>Company</u>	<u>Phone</u>
	Kevin Becica	Camden County Engineer	856-555-1234
	Uzo Ahiarawkwe	City of Camden Engineer	
	Kathy Cullen	Cooper's Ferry Partnership (CFP)	856-757-9154
	Sam Mody	Keller Engineers	856-536-3169
	Bernard Boerchers	GPI Project Manager	908-236-9001
	Julia Steponanko	GPI Deputy Project Manager	908-236-9001
	Dave Kuhn	GPI	908-287-2730

A conference call was held on August 28, 2018 to gather information and coordinate with the City of Camden for the subject project.

Topics included:

- I. Project Limits
- II. Signals: signal plans/timing/electrical plans/aesthetics
- III. New development in project area
- IV. Underground infrastructure
 - 1. CCTV/reports
 - 2. Subsurface utility as-builts
 - 3. Historic: trolley tracks/cobblestone
 - 4. Areas of flooding
- V. Luminaires: Style for Haddon Ave
- VI. ADA Compliance intersection overlaps

Mr. Boerchers provided an overview of the project limits and that the project is currently in the Concept Development Phase.

As-Built Plans/Historic Information/Flooding

Mr. Boerchers requested from the City of Camden any available As-built plans, specifically related to subsurface utilities as well as any history of rail tracks, cobblestone paving or areas of flooding/

Mr. Ahiairakwe indicated that the City has utility plans and as-built plans related to a watermain replacement. Mr. Ahiairakwe indicated that he has not encountered any trolley tracks.

Signal Plans/Electrical Plans/Timings

Mr. Boerchers requested from the City and signal plans, electrical plans or timing directives that the City may have for the signals within the project limits.

Mr. Ahiairakwe indicated that they can provide this information.

CCTV video inspection or reports of utility inspections

Mr. Boerchers requested any CCTV video or reports of pipe inspections.

Mr. Ahiairakwe indicated that he should be able to provide this information.

ADA Standards

Mr. Boerchers noted that some intersections are not ADA compliant and if the City has a standard that should be used for this project.

Mr. Ahiairakwe noted that the City does have a standard and they can provide.

Project conflicts with other projects

Mr. Ahiairakwe asked if any of the signals within the limits of this project are currently being improved under a City contract with Taylor Wiseman & Taylor. He asked Ms. Cullen if she could check. If there are conflicting intersections, Mr. Ahiairakwe and Ms. Cullen will discuss further.

Standards for Luminaires

Mr. Boerchers asked if the City has standards for luminaires.

Mr. Ahiairakwe indicated that the City does have a standard and can provide that.

ADA Curb Ramp Pavers

Mr. Ahiarakwe indicated that the City prefers brick pavers for ADA ramps.

Ms. Becica indicated that the County uses ADA tiles.

Mr. Ahiarakwe noted that he was amenable to what the County uses.

Overhead lighting at intersections

Mr. Boerchers if illumination should be included at signalized intersections.

Ms. Becica provided direction to include illumination. It is an important part of pedestrian safety.

Mr. Ahiarakwe asked GPI to assess the ongoing electricity cost of proposed lighting as electricity costs are paid for by the City.

New development within the project limits

Mr. Ahiarakwe indicated that he is not aware of any new development within the project limits.

Thickness of Concrete

Mr. Boerchers asked Mr. Ahiarakwe if he had any information on the thickness of the concrete.

Mr. Ahiarakwe did not.

Ms. Becica provided details on the County's experience on the Our Lady of Lourdes Phase 1 and Phase 2 project as well as on Federal Street and Westfield. Ms. Becica noted that various options will need to be evaluated as the project moves forward to determine the most effective treatment.

Sewer/Water Laterals

Mr. Ahiarakwe noted that there are two abandoned buildings near Newton Avenue. He asked if the project was planning to replace water/sewer laterals as part of the scope so as to prevent ripping up new pavement after the project is finished in order to replace a lateral.

Mr. Boerchers indicated that the project team would need evaluate this further in project development to weigh the cost vs benefit.

Mr. Boerchers asked if laterals are shown on As-built plans.

Mr. Ahiarakwe indicated they are shown in areas where replacements were made.

Action Items

GPI will send an email to Mr. Ahirakwe detailing all the requested information identified above. GPI will copy Ms. Cullen.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Telephone Conversation Log

Project: Green Infrastructure and SWM rule interpretations - GENERAL

Project No.:

File No.:

Date: 3/22/19

Time: PM

☐ Incoming ☒ Outgoing

Purpose:

Person Called: Gabe Mahon, Chief Bureau of Non-point Pollution control, Division of Water Quality

Telephone No.: 609-633-7021

Firm: NJDEP

Person Calling: Val Hrabal

Telephone No.: 908-236-9001

Firm: GPI

Summary:

1. Use of "R-tanks" underneath rain gardens – are they permissible?
 - a. He reviewed the GI plans for Hoboken Washington street project (see <I:\NJTPA\2017650 FY 2016-2017 LSEAP Prgm\Project 4 - Oakland Ave & St Pauls Ave\EngDrainage\Reference\Washington Street HOB plans 6-30-16.pdf>) and since it was not a major development he approved the R-tanks. The R-tanks could be permissible, even if it is a major development, but they would have to be in addition to the rest of the BMP. In a general sense, as long as you aren't replacing any other part of the BMP with the R-tanks, they should be OK.
2. For separation of combined sewers into separate sanitary and stormwater lines, does the existing impervious surface being directed into the new storm system count towards the ¼ acre "net impervious" for "major development"?
 - a. Generally yes, but we just need to demonstrate that the existing level of water quality is being maintained. For example, if we are adding the rain gardens, thus reducing runoff from travelled pavements, reducing net impervious surfaces, and thus improving water quality as compared to existing conditions then no MTD's would be required.
 - b. MUA's should all have hydraulic models of their systems (required under their operating permits).

Action To Be Taken:	
Copy To:	Comments
Reply Required From:	
Reply Required By (Date):	
Note: Please contact the writer immediately for any additions or deletions to the above record.	

100 Corporate Drive, Suite 301, Lebanon, New Jersey 08833
Tel: (908) 236-9001 Fax: (908) 236-9669 www.gpinet.com

Additional Offices located at: 54 Shrewsbury Avenue, Suite A, Red Bank, NJ 07701
458 Woodbine-Ocean View Road, Suite B, Ocean View, NJ 08230

An Equal Opportunity Employer

Memorandum of Conference Call

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: June 10, 2019

Project: Camden County
Haddon Avenue (CR 561) Concept Development

Project No.: 2018674.00

Subject: Coordination with City of Camden re Green Stormwater Infrastructure, Sewer Separation

Attendees:	<u>Name</u>	<u>Company</u>	<u>Phone</u>
	Kevin Becica	Camden County Engineer	856-555-1234
	Kathy Cullen	Cooper's Ferry Partnership (CFP)	856-757-9154
	Sam Mody	Keller Engineers	856-536-3169
	Paul Truban	Keller Engineers	908-236-9001
	Bernard Boerchers	GPI Project Manager	908-236-9001
	Julia Steponanko	GPI Deputy Project Manager	908-287-2730
	Valerie Hrabal	GPI	908-236-9001
	Richard Schroeder	GPI	908-236-9001
	Dave Kuhn	GPI	908-236-90011

A conference call was held on June 10, 2019 to stormwater filtration, CSO, green stormwater infrastructure and any outstanding items.

1. Kathy – Purpose – Look at stormwater issues in State Street. Follow up with GPI on GSI, filtration issues. Follow up with GPI on CSO upgrade/replacement. Prior to SME meeting.
2. Kevin – Frustrating to identify best approach to stormwater upgrade. Hoping for more direction from the City, but not happening. On one of other projects, the engineer is staying the definition of major development will be changing.
3. Val – Not as easy. Not changing the limits. They are changing Green Infrastructure to address major development. Phase 2 will reduce thresholds, but these are a ways off. Rule change now was proposed in Dec 2018. Must be adopted in one year. One year grandfather built in. Have till November 2020. If adopted 2019, will be in place 2020. Requirement is green infrastructure if threshold hit.
4. Kevin – Agreed with Val on DEP position in
5. Val – Depending on timing. In order to be grandfathered, have to have DEP permit complete the day before the grandfather date (approx. Nov 9, 2020). If not, have to get linear development waiver.

6. Rich – What’s involved? Val – Paperwork, more cost.
7. Bernie – Do we have an entity to maintain Green Infrastructure? Kevin – Parkside Neighborhood? Kathy – Looked at existing Mt. Ephraim and Haddon tree pits. Not being maintained.
8. Val – Told DEP that maintenance is not happening.
9. Bernie – Should we proceed with CED under current rules, should we include green infrastructure on plans? Kevin – Thinks we should leave them in as they are CD plans. Work out during PE/FD. In PE/FD, if can’t be installed, will have to do a linear development waiver.
10. Kevin – Downstream impacts
11. Val – Tying storm drainage into existing CSO. Kevin – Andy Krichen? should have sewer shed model. CDM Smith model.
12. Kevin – If GSI, would have to have one collection point before going to CSO.
13. Val – Will require outflow from under drains to a spot to pond up and then flow into.
14. Rich – Complexity of the job, more intercepting streets that flow into and flow out of the Haddon system. Not sure if tie in points flow to same endpoint. Have to be looked at further. May be tying into more than one direction of flow.
15. Kevin – Model from Krichen is complicated. Believes Krichen is pro green infrastructure.
16. Bernie – For CSO, show separated.
17. Rich – Separate out if enough room in roadbed. It appears possibly to do horizontally. Some vertical adjustment may be required in PE/FD. Tie in manhole at each end.
18. Rich – Equivalent size RCP was direction. If equivalent size circular pipe is 24”, however it may not be required if flow is separated. Kevin – Any Krichen provided direction. He is being conservative. He is not ready to decrease the size of his combined sewer system. GPI needs to provide a good write up in CD report explaining this issue. Val – DEP will have concerns with pipe size reduction.
19. Rich – Direction was to replace CSO with Sanitary Sewer in same location. Not practical for construction. Suggest one parallel and demolish existing system. Kevin – Have to write up for direction from CCMUA. Bernie – Will address in CD report. Outline options and difficulties.
20. Val – still looking at lining old one? Rich/Bernie -no
21. Val – Lateral replacement? Rich/Bernie – Yes.
22. Val – Survey rims/inverts would have given us more information. Don’t have.
23. Kevin – Reiterating that GPI will have the option to separate.
24. Kevin – Asks to look at if any of these reaches have an ability to separate? Are some easier than others? Rich -Agreed to look at it. Concerning tie-in points, line we are tying to crosses Haddon Ave. Would county want to replace that section of the other main. Kevin – Asked for clarification. Rich – We dump into Kaighns Ave line. If county wants to replace Kaighns Ave section later it will have to be dug up. Kevin

– If you can extend project a short distance down Kaighns, that would be a good thing. Rich – Kaighns Ave may be elliptical brick. Kevin – Is there a manhole to tie into on Kaighns? Rich – we would install one if not there. Rich – It will be something we will mention. Kevin – Paving to Park Ave. CSO not redone. Rich – We will mention that some of the utilities are big and old. Have 24" cast iron gas main. Kevin – If we do anything on Haddon near Kaighns it will require all utilities.

25. Bernie – full depth reconstruction. Rich – Big coordination early with companies to budget funding.
26. Kevin – CFP/County doing this on 27th Street and can get lessons learned.
27. Bernie – Our PPA is replacement with asphalt.
28. Bernie – We know what we are putting in the report from a utilities standpoint. We will write in rule change conditions in the CD report. Val – Some of CSOs has cross drainage from lateral streets. By separating in our section, we are adding capacity that can take flow from other streets and taking to a pinched combining spot downstream. Drainage calcs will be required to put in model. Bernie – May lead to smaller pipes. Kevin – Call it the CCMUA/City model.
29. Bernie – SME meeting. Two fact sheets – Make a two-page fact sheet w alts and existing conditions.
30. Kathy – LOS table. Have as a board or show per intersection.
31. Kathy – Crash analysis. Kevin – How do you improve safety? Is crash analysis the right way or is there another way to demonstrate? Bernie – Presentation -Discuss analysis and mitigation measures.
32. Kathy – A few pics of business corridor area will be helpful to SMEs. Bernie – If she can provide a couple that would be great. Kevin – If not doing complete streets, why not. Also, other study (planning study). GPI can say this is a prime corridor. Mention other planning study.
33. Kevin – Stakeholder/Public Involvement – Show feedback from the public.
34. Bernie – Draft document before SME meeting.
35. Kathy – PDF/Fact sheet with plans to request plans.
36. Bernie – We will do updated fact sheet, work on presentation.
37. Kathy – Kevin will make request to Local Aid when we provide fact sheet, alternatives.

After phone call:

Rich – Streets flow into us. We are separating within our limits, but

Val - Did we tell them separating sewers is not feasible? Rich – A lot of variables.

Actions:

Rich – Updates.

Val - Updates.

Rich – Rich and Val should make sure their write-ups coordinate.

Action Items

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandum of Meeting

To: File

From: Greenman-Pedersen, Inc. (GPI)

Date: January 14, 2019 (revised January 22, 2019)

Project: Haddon Avenue (CR 561) Improvement Project – Euclid Avenue to Newton Avenue
City of Camden, Camden County
Concept Development

Project No.: 2018674.00

Subject: Alternatives Review Meeting, January 10, 2019

Attendees:	<u>Name</u>	<u>Company</u>	<u>Phone</u>
	Kevin Becica	Camden County Engineer	856-566-2971
	Joe Myers	Cooper's Ferry Partnership (CFP)	856-757-9154
	Kathy Cullen	Cooper's Ferry Partnership (CFP)	856-757-9154
	Allison Hawco	Cooper's Ferry Partnership (CFP)	856-757-9154
	Orion Joyner	City of Camden Engineering	856-757-7680
	Sam Mody	Keller Engineers (under contract to CFP)	856-536-3169
	Bernard Boerchers	GPI	908-236-9001
	Christopher Marra	GPI	908-236-9001
	Dave Kuhn	GPI	908-236-9001

Meeting Purpose

The purpose of the meeting was to review the alternatives developed to date and gather comments and questions prior to scheduling a stakeholders' meeting and Public Information Center.

Mr. Boerchers summarized the three (3) alternatives developed by GPI. He noted that the stormwater and sanitary sewer configuration indicated on the typical sections needed to be corrected because it incorrectly identified the existing sewer for stormwater use and a new sanitary sewer to be installed. Camden County Municipal Utility Authority (CCMUA) intends to line the brick sewer and use it for sanitary and install a new storm sewer line.

Traffic Projections:

1. Mr. Boerchers stated that the existing traffic volumes were projected to the design year based on the DVRPC Travel Demand Model (TDM) and verified using DVRPC employment and population data along with supplemental planning information. He added that growth rates from NJDOT Access are to be used for development projects only and are too conservative for the planning and design of capital projects.
2. Mr. Mody stated that he had spoken with Mr. John Coscia of DVRPC and that Mr. Coscia also recommended using the DVRPC TDM supplemented with local planning information.

3. Ms. Becica indicated that there is not a consistent methodology to project traffic volumes to the design year for all the Camden projects in Concept Development. Ms. Cullen concurred.
4. Ms. Becica provided direction to Ms. Cullen and Mr. Mody to direct all consultants working on Camden County projects to use the DVRPC TDM supplemented with local planning information to project traffic volumes to the design year.

Haddon Avenue and Newton Avenue Intersection:

1. Mr. Boerchers stated that the analysis of the no-build condition indicates acceptable LOS results for each of the signalized intersections within the project limits with the exception of the westbound approach of Newton Avenue in the AM peak hour. He added that the no-build analysis was based on the existing timing directives and that a simple change in the green splits at the intersection of Haddon Avenue and Newton Avenue would rectify the poor LOS along the westbound approach of Newton Avenue during the AM peak hour.
2. Ms. Becica inquired if the timing change could be made as a short-term improvement. Mr. Boerchers stated that GPI can provide an optimized signal timing directive for this intersection with MUTCD compliant pedestrian clearance intervals that can be implemented by the City immediately to improve the operation at this intersection. He requested that the City provide a sample format of their timing directive.

Signal Timings:

1. Mr. Boerchers indicated that GPI would provide MUTCD compliant pedestrian clearance intervals and verify the compliance of the yellow and all-red intervals with ITE standards along with optimization and coordination of the signal timings along the corridor for each of the alternatives.
2. Mr. Boerchers stated that it is important in an urban environment to maintain a short cycle length so that pedestrians do not get frustrated waiting for the WALK interval.

Alternative No. 1:

1. Mr. Boerchers presented Alternative No. 1 which includes a 12-foot wide travel lane with bike sharrows and 8-foot wide parking along each direction of Haddon Avenue along with widening of the sidewalk on either side by one-foot. He added that each of the existing traffic signals would be replaced and brought into compliance with the current MUTCD and that the entire corridor would be brought into conformance with the ADA. He indicated that pedestrian curb extensions would be added at the intersections of Walnut Street, Chestnut Street / Park Boulevard, Kaighn Avenue, Atlantic Avenue, and Lansdown Avenue with green infrastructure within the curb extensions, as feasible. He also added that concrete channelization islands are proposed in the southwest and northeast corners of the intersection of Haddon Avenue and Kaighn Avenue to reduce pedestrian crossing times.
2. Ms. Becica noted that on the Kaighn Avenue Project, the public did not approve of bike sharrows.
3. Ms. Becica indicated her preference of physical islands over painted islands as they provide enhanced safety and refuge for pedestrians. However, she added that the City Engineer does not like physical islands encroaching past the extended curb lines. The attendees agreed that GPI would investigate the addition of curb extensions prior to the channelization islands or aligning the islands with the extended curb lines.
4. Mr. Mody stated that the plans indicate that the curb extensions were designed to accommodate the turning maneuvers of a city bus design. He added that the curb extensions would need to accommodate the turning maneuvers of the City's emergency vehicles – specifically firetrucks.

5. The attendees agreed that Ms. Cullen would provide GPI with turning templates of the City's emergency vehicles and that GPI would modify the design, if necessary, to accommodate the same
6. Mr. Boerchers noted that the existing drainage system, specifically inlet locations, will need to be modified to accommodate the proposed curb extensions but that this effort can be incorporated as part of the removal of the existing combined sewer and stormwater system.
7. Mr. Mody inquired about potential conflicts between opposing left turns of larger vehicles along the approaches of Kaighn Avenue and if split phasing may be warranted for the side street. Mr. Boerchers stated that GPI would verify the ability of larger vehicles to safely make concurrent left turns from the approaches of Kaighn Avenue. And, if not feasible, would investigate the possibility and impacts of employing side street split phasing.
8. The attendees discussed maintenance responsibilities for the proposed green infrastructure. Ms. Cullen suggested discussions with the Parkside Business Community in Partnership and Haddon Avenue Business Association about their willingness to assume maintenance responsibilities and a jurisdictional agreement.

Alternative No. 2:

1. Mr. Boerchers presented Alternative No. 2 which includes an 11-foot wide travel lane with and adjoining 7-foot wide bicycle lane and 8-foot wide parking along the southbound direction of Haddon Avenue and an 11-foot wide travel lane with an adjoining 5-foot wide bicycle lane along the northbound direction of Haddon Avenue. He added that all other improvements would be similar to Alternative No. 1.
2. Ms. Becica stated that NJ Transit requires a minimum lane width of 11 feet for their buses.
3. Ms. Becica stated that on a recent County project along North Park Drive that a striped 2-foot wide buffer was provided between the on-street parking and the 5-foot wide bike lane.
4. Mr. Joyner stated that eliminating parking on one side of the street will not likely be well received by the community.
5. Ms. Becica suggested that bicycle lanes could be provided along alternate routes. Ms. Cullen stated that she would investigate existing and planned bicycle routes in the project area via the Camden Circuit Trails Plan.

Alternative 3:

1. Mr. Boerchers presented Alternative No. 3 (via a typical section only) which includes a 12-foot wide travel lane with and adjoining 3-foot wide buffer and a 12-foot wide two-way bicycle lane along the southbound direction of Haddon Avenue and a 15-foot wide travel lane only along the northbound direction of Haddon Avenue.
2. Mr. Boerchers also presented typical sections for Alternative Nos. 1 and 2. He added that the notes regarding the proposed sanitary and stormwater lines were incorrect as they were developed prior to the direction received by the CCMUA and still need to be updated to reflect this directive.
3. Ms. Becica directed GPI to remove the proposed sanitary and stormwater lines from the typical sections.
4. Ms. Becica, Mr. Joyner and Ms. Cullen agreed that Alternative No. 3 was not feasible due to the proposed elimination of all of the on-street parking.

Pavement Design:

1. Ms. Becica stated that the French and Parrello Pavement Design Report recommended that if more than 40% of a concrete pavement section requires repair then complete replacement is the more cost-effective option.
2. Ms. Becica stated that a 2-inch asphalt overlay was provided over the existing concrete pavement along Haddon Avenue between Euclid Avenue and Vesper Boulevard, and that full depth pavement replacement was provided in other areas.
3. Ms. Becica stated that the concrete pavement along Haddon Avenue between Newton Avenue and Euclid Avenue was in such poor condition that an overlay along this section is not reasonable.
4. Ms. Becica stated that proposed full depth replacement needs to account for the removal of historic fill and the impacts and costs must be accounted for in the CD Report.
5. Mr. Boerchers requested a copy of the County's standard pavement section. Ms. Becica stated that she would provide a detail of the County's standard pavement section to GPI.
6. Ms. Becica inquired as to the ADT along Haddon Avenue as it could impact the pavement section. Mr. Marra stated that the ADT along Haddon Avenue within the project limits is between 10,000 and 12,000 vehicles. Ms. Becica stated that the County's standard pavement section would accommodate an ADT in this range.

Roadway Lighting:

1. Ms. Becica inquired if the proposed modifications include replacement of the sidewalk and curb to which Mr. Boerchers replied it depended on the selected alternative.
2. Ms. Becica stated that if existing PSE&G lighting needs to be relocated that the County would have to pay for the relocation or removal of the foundations, standards, arms and luminaires.
3. Mr. Boerchers indicated that the sidewalk along Haddon Avenue between Euclid Avenue and Wildwood Avenue appears to have been recently replaced with a combination of concrete sidewalk and pavers. He added that all reasonable efforts will be made to maintain these sections of sidewalk. He added that the remaining sections of sidewalk are in poor condition and should be replaced as part of this project.
4. Ms. Becica requested that all reasonable efforts be made to avoid or minimize impacts to PSE&G lighting facilities and that any impacts should be quantified in the CD Report.
5. Ms. Becica stated that the CD report should include a requirement for the designer to check for conflicts between utility poles and decorative lighting.

Pedestrian Design:

1. Mr. Boerchers raised the potential conflict of existing house stoops and ADA requirements for sidewalk width.
2. Ms. Becica stated that the County requires a minimum 4-foot sidewalk width to be consistent with PROWAG even though it has yet to be adopted. Mr. Boerchers stated that GPI would measure the existing distance between the face of curb and the existing stoops and identify locations where the 4-foot width is not currently met.
3. Ms. Becica stated that any areas of proposed sidewalk should include pavers with a design to be recommended by the County.

4. Ms. Becica recommended that any sidewalk replacement should not be closer than 1-foot of the building foundations and stoops.
5. Ms. Becica stated that the existing trees along Haddon Avenue within the project limits are overgrown and should be replaced with trees similar to those on the adjoining sections of Haddon Avenue that have been recently updated. Mr. Boerchers stated that existing trees would be indicated for removal on the PPA and that new trees would be shown at the appropriate locations.
6. Ms. Becica inquired if GPI investigated potential areas for Right Turn on Red restrictions. Mr. Boerchers stated GPI has performed a preliminary analysis for Right Turn on Red restrictions. He added that GPI would indicate the intersection sight triangles on the plans for each approach and that at locations with substandard intersection sight distance investigate the need for Right Turn on Red restrictions based on the crash analysis and analyze the impacts of such a restriction on the operation / capacity of the intersection.
7. Mr. Mody stated that the alternatives matrix should indicate the approaches for proposed Right Turn on Red restrictions and their impacts.
8. Ms. Becica stated that the audible indications of an accessible pedestrian detector or pushbutton can be considered a nuisance in a residential community. She inquired if audible indications are now required for all projects.
9. Mr. Mody and Mr. Boerchers both opined that audible pedestrian detector or pushbutton indications are not required by the MUTCD, but that Mr. Boerchers would verify. After the meeting Mr. Boerchers verified that audible indications are not a requirement by the MUTCD.

General Comments:

1. Mr. Mody provided a list of comments to GPI that he had previously sent to Ms. Cullen, Ms. Hawco and Ms. Becica in an email dated January 9, 2019. It was agreed that GPI would provide a Comment Resolution Summary (CRS) for each comment.
2. Ms. Becica stated that the County has a project to replace the Kaighn Avenue Bridge and that during the replacement Haddon Avenue will be part of the detour. She inquired if GPI had any timing recommendations for the detour. Mr. Boerchers stated that without knowing the number of vehicles detoured and their origin and destinations that it would be difficult to assess the impacts and provide the appropriate mitigation strategies. He added that if this information was available that the Synchro model set up for this CD study could be used to optimize the timing along Haddon Avenue during the detour.
3. Ms. Cullen inquired if a lighting assessment was to be performed during CD. Mr. Mody stated that only an overview of existing lighting with parameters for the proposed lighting design are to be provided in CD.
4. Mr. Cullen stated that the project is in a Historic Preservation District. Mr. Boerchers noted that this will be noted in the CD Report and addressed in the Categorical Exclusion Document during the PE phase.
5. Mr. Mody inquired if the Environmental Screening Report had yet been provided to Camden County and Cooper's Ferry Partnership. Mr. Kuhn stated that the Environmental Screening Report had been completed and that he would verify if it had been forwarded to the County and the Partnership. If not, he would do so immediately.
6. The attendees agreed that Ms. Cullen would arrange the second stakeholders meeting for the week of February 4th.

7. The attendees agreed that the Public Information Center (PIC) should be targeted for March.
8. Ms. Cullen, Mr. Joyner and Mr. Mody indicated that all alternatives should be presented at the PIC. Mr. Joyner suggested showing only Alternative Nos. 1 and 2.
9. Mr. Mody stated that we should include the feedback from the Community Survey in the presentation material for the Public Information Center.
10. Ms. Cullen and Ms. Hawco indicated that we need to have a survey for the Public Information Center to gather feedback on the alternatives. Mr. Kuhn requested an example of a previous survey on another project to be used to construct a survey for this project. Ms. Cullen and Ms. Hawco agreed to provide a sample.
11. It was agreed that GPI would develop a Survey Monkey survey for the Public Information Center.
12. Regarding signal timing operation, Mr. Boerchers inquired of Ms. Becica if the timing should be fixed so that pedestrians do not have to push the pushbutton or semi-actuated to reduce motorist delay. Ms. Becica stated that the signal operation should be optimized with actuation and that the specific traffic signal equipment will be identified in design.
13. At the end of the meeting, the attendees discussed the damaged attenuator and guide rail protecting the truss pier of the Conrail bridge and if upgrades should be incorporated into the proposed project. Ms. Becica stated that any proposed treatment at the Conrail bridge truss pier would be determined during Preliminary Engineering, using either new guide rail or concrete encasement, depending on Conrail and DRPA/PATCO review/requirements. She added that the engineer's estimates prepared during CD should include the higher priced option.

Action Items:

1. The City will provide GPI with a sample timing directive so that GPI can prepare an optimized timing directive for the intersection of Haddon Avenue and Newton Avenue based on the Synchro model.
2. GPI will investigate the addition of curb extensions prior to the channelization islands at Kaighn Avenue or aligning the islands with the extended curb lines.
3. GPI will verify that the City's firetrucks can perform all turning maneuvers in each alternative based on turning templates to be provided by Ms. Cullen.
4. GPI will verify the ability of larger vehicles to safely make concurrent left turns from the approaches of Kaighn Avenue, and if not investigate split phasing for the side street.
5. Ms. Cullen will reach out to the Parkside Business Community in Partnership and Haddon Avenue Business Association about their willingness to assume maintenance responsibilities for proposed green infrastructure.
6. Ms. Cullen will investigate existing and planned bicycle routes in the project area via the Camden Circuit Trails Plan.
7. GPI will remove the proposed sanitary and stormwater lines from the typical sections.
8. GPI will account for the removal of historic fill with any proposed full depth pavement replacement and summarize the impacts and costs in the CD Report.

9. Ms. Becica stated that she would provide a detail of the County's standard pavement section to GPI.
10. GPI will measure the existing distance between the face of curb and the existing stoops and identify locations where a minimum 4-foot width of sidewalk is not currently met.
11. GPI will indicate on the alternatives all existing trees to be removed and new trees at the appropriate locations.
12. GPI will show the intersection sight triangles on the alternatives for each approach and at locations with substandard intersection sight distance investigate the need for Right Turn on Red restrictions based on the crash analysis and analyze the impacts of such a restriction on the operation / capacity of the intersection.
13. GPI will indicate the locations for proposed Right Turn on Red restrictions and their impacts on operation in the alternatives matrix.
14. GPI will prepare a CRS for the comments as provided by Mr. Mody in his January 9, 2019 email.
15. Ms. Cullen will schedule a stakeholders meeting for the week of February 4th.
16. Mr. Kuhn will follow up to make sure the Environmental Screening Report has been provided to Camden County and Cooper's Ferry Partnership. If not, he would do so immediately.
17. Ms. Cullen and Ms. Hawco will provide GPI with an example survey from a previous Public Information Center and GPI will prepare a draft survey for review by the Project Team.
18. GPI will develop a Survey Monkey survey for PIC.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Dave Kuhn at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

MINUTES OF MEETING OF Wednesday, July 23, 2019

Haddon Avenue, Euclid Avenue to Newton Avenue, Concept Development Study
City of Camden, Camden County, NJ
GPI Project 2018674

DATE PREPARED: July 31, 2019

LOCATION: NJDOT E&O Building, Training Room A
1035 Parkway Avenue, Trenton, NJ 08625

ATTENDEES:

Name	Representing	Phone	Email
Nipa Mania	NJDOT Bureau of Safety, Bicycle and Pedestrian Programs (BSBPP)	609.963.2222	Nipa.maniar@dot.nj.gov
Deven Patel	NJDOT Local Aid Program Office	609.963.2008	Deven.patel@dot.nj.gov
Dharmesh Patel	NJDOT Bureau of Traffic Engineering (BTE)	609.963.1791	Dharmesh.patel@dot.nj.gov
John Fam	NJDOT – BTE	609.963.1470	John.fam@dot.nj.gov
Sowatta Eap	NJDOT – Roadway Standards	609.963.1808	Sowatta.eap@dot.nj.gov
Binyamin Abu-Haltam	NJDOT – Roadway Standards	609.963.2558	Binyamin.abuhaltam@dot.nj.gov
William Kettleson	NJDOT – Pavement	609.963.1657	William.kettleson@dot.nj.gov
Georges Ghaly	NJDOT – Construction Services and Materials	609.963.2270	Georges.ghaly@dot.nj.gov
David Kook	NJDOT ROW and Access Management	609.963.1230	David.kook@dot.nj.gov
Nazhat Aboobaker	NJDOT Local Aid Program Office	609.963.2001	Nazhat.aboobaker@dot.nj.gov
Robert Abitz, Jr.	NJDOT Geometric Solutions	609.963.1835	Robert.abitz@dot.nj.gov
Kevin Becica	Camden County	609.868.6243	Kevin.becica@camdencounty.com
Kathy Cullen	Cooper's Ferry Partnership	856.757.9154	kcullen@coopersferry.com
Jim Sweet	NJDOT Environmental Resources	609.963.2074	James.sweet@dot.nj.gov
Edward Andrescavage	NJDOT Local Aid District 4	856.486.6779	Edward.andrescavage@dot.nj.gov
Lauren Coe	NJDOT Local Aid District 4	856.486.6803	Lauren.coe@dot.nj.gov

Julia Steponanko	GPI	908.236.9001	jsteponanko@gpinet.com
Dave Kuhn	GPI	908.236.9001	dkuhn@gpinet.com

PURPOSE: The purpose of the meeting was to gather NJDOT SME input on the alternatives developed before finalizing the Preliminary Preferred Alternative and completing the Concept Development Study.

Discussion:

1. Ms. Becica provided an introduction to the meeting and asked everyone to identify themselves and their role at the NJDOT, if applicable, or role in the project. Kevin then asked GPI to present the project.
2. Ms. Steponanko presented the project via a PowerPoint presentation (attached), and outlined the project purpose, need and goals, showing photos of current conditions of the area.
3. Mr. Kuhn provided an overview of the initial outreach to stakeholders and the public to gather feedback on community interests and concerns.
4. Ms. Steponanko provided an overview of Alternative 1, which consists of parking on both sides, no bike lanes and wider sidewalk.
5. Mr. Abitz asked about traffic/truck use in the area. Ms. Becica and Ms. Steponanko responded indicating that while trucks use Haddon Avenue for businesses in the area, it is not one of the major truck arteries in and out of the city.
6. Mr. Abitz asked about safety concerns in the project limits, particularly related to pedestrian safety. To what reason does the County/GPI attribute pedestrian safety risks? Ms. Steponanko indicated that illegal parking and mid-block crossings are high contributors to risk. Mr. Abitz suggested considering narrowing lanes from 12 feet wide to 10 or 10.5 feet wide. It is an urban area with a posted speed of 25 mph. Ms. Becica stated that NJ Transit (NJT) requires a minimum of 11 feet for their buses.
7. Mr. Fam asked about sidewalk width. Ms. Steponanko and Ms. Becica indicated that it will be 4-foot minimum, but variable.
8. Ms. Coe asked about turning concerns with wider sidewalks. Ms. Steponanko indicated that truck turning templates were used to ensure vehicles could make turns, particularly fire trucks. Ms. Becica noted that the fire department had made clear their concerns about fire truck maneuverability at the start of the project.
9. Mr. Kook asked if NJT be using elongated buses in the area. Ms. Becica asked if this meant articulated. Mr. Kook indicated that he was not sure. Ms. Cullen noted that CFP will check with NJT on what their intentions are for the future.
10. Ms. Steponanko presented Alternative 2, Parking on one side and bike lane on the other.
11. Mr. Sweet offered a suggestion. With reduced travel lane widths, could the bike lane width be reduced to further widen the sidewalks Ms. Steponanko responded that due to the adjacent parking, bike lanes are typically not recommended to be smaller than seven feet wide.
12. Ms. Maniar noted that there are existing bike lanes south of Euclid Avenue and north of Newton Avenue. Alternative 2 would be better for bikes. Mr. Kuhn noted that at the discussion with stakeholders, the stakeholders were generally in favor of using Park Boulevard as a designated bicycle route rather than Haddon Avenue.

13. Ms. Steponanko presented Alternative 3, Parking removed on both sides of Haddon Avenue and bike lanes provided.
14. Mr. Abitz asked what would become of the bus stops under this alternative. Ms. Steponanko indicated that they may have to be relocated.
15. Mr. Abitz noted his concern about providing space for trees, lighting benches on the sidewalks will impact ability to walk. Ms. Becica noted that benches would likely be provided at curb extensions/bump outs.
16. Mr. Sweet asked about pocket parks. Ms. Becica described the pocket park that has been put in place along Haddon Avenue, north of Pine Street.
17. Ms. Becica commented on concerns regarding providing bicycle lanes. This project connects to the Mt. Ephraim CD Study. Mt. Ephraim will be considered as a parallel location for bicycle locations.
18. Ms. Aboobaker indicated that the County should ensure that any work related to reconstruction of the roadway and the storm and sanitary sewer system be coordinated to meet FEMA requirements.
19. Ms. Sweet indicated that a lot of coordination has been required with SHPO relative to both Historic Districts and Historic Sewer Systems. Ms. Becica indicated that she has a presentation made by NJDOT on combined sewer system in Camden that can be used for SHPO. She also indicated that in some cases cleaning of the brick lined combined sewers is not being done because it can lead to collapse within 6 to 12 months after cleaning.
20. Ms. Steponanko indicated that the construction estimate for the project is approximately \$20 million.
21. Mr. Abitz asked if there are developers in the area and who would be coming first, the redevelopment or this project? Ms. Cullen indicated that that a developer is looking to redevelop a former convent at the south end of the project area, however doing this project first will be beneficial. The southern end is an Opportunity Zone. Kevin Becica noted that Camden County is currently conducting an Economic Development Study of the area, working with the Parkside Business and Community In Partnership (PBCIP) CDC.
22. Ms. Aboobaker asked if we considered noise impacts. Mr. Kuhn noted that this project is exempt from any federal requirements but that sensitive receptors would be considered during the next project phases.
23. Ms. Aboobaker asked if the project is federally funded. Ms. Becica indicated that there will be no federal funds associated with the project.
24. Mr. Abitz asked if rather than maintaining or replacing the existing sewer in place, to consider building a new sewer off line. Ms. Steponanko indicated that we are looking at this option. Ms. Becica noted that on Haddon Avenue near Our Lady of Lourdes Hospital, something similar was done. Ms. Steponanko noted that the preferred alternative for utility reconstruction has not been determined.
25. Mr. Fam noted that there are seven traffic signals. He asked if these signals will be upgraded. Ms. Steponanko stated that they would all be updated to current standards and would be optimized
26. Mr. Patel asked how these signals will be coordinated Ms. Steponanko indicated that they will be time-based coordinated and use GPS clocks to maintain the same.

27. Mr. Patel asked if parking would be metered. Ms. Becica noted that there are metered and unmetered spaces in the project limits. The city will make the determination regarding metered spaces.
28. Mr. Patel asked if lighting is proposed all along the road or just at intersections. Ms. Steponanko indicated that lighting is proposed throughout the length of the project.
29. Mr. Abitz asked what was needed from NJDOT as this is not a State Highway. Mr. Deven Patel asked for comments from SMEs that can be provided to Camden County for consideration.
30. Mr. Sweet encouraged continued close coordination with stakeholders.
31. Mr. Abitz asked about redevelopment. Are new buildings envisioned? Ms. Becica and Ms. Cullen responded that there will likely be a mix of new buildings and existing buildings where they can be rehabilitated.
32. Mr. Abu-Haltam asked if the stairs encroaching on the sidewalk would be removed. Ms. Becica noted that we are trying to maintain them to the extent possible.
33. Ms. Cullen noted that in the Parkside neighborhood there will be some new housing and other areas for reuse of existing.
34. Mr. Abitz suggested that if the plan was to take houses down and construct new buildings, then an envelope for a bike lane could be provided.
35. Ms. Becica noted that Camden County will look at 10-foot or 11-foot lanes, 8-foot parking and wider sidewalks in PE.

Action Items:

- GPI to review previous consideration of 10 to 11-foot travel lanes and any decisions made, and determine advantages/disadvantages.
- GPI will follow up with Ms. Cullen and NJT regarding their intent, if any, of using longer or articulated buses in the future. This may impact turning radii.
- NJDOT Local Aid will provide comments from NJDOT SMEs for consideration and response.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Dave Kuhn at (908) 236-9001 within 10 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Respectfully submitted,

Dave Kuhn, PE
Senior Project Manager

cc: B. Boerchers, J. Steponanko

MINUTES OF MEETING OF AUGUST 22, 2019

Haddon Avenue Concept Development Study
City of Camden, Camden County
GPI Project 2018674

DATE PREPARED: August 26, 2019

LOCATION: Conference Call

ATTENDEES: Kevin Becica, Camden County
Kathy Cullen, Cooper's Ferry Partnership
Joe Myers, Cooper's Ferry Partnership
Bernie Boerchers, GPI
Julia Steponanko, GPI
Attila Toth, GPI
Rich Schroeder, GPI
Dave Kuhn, GPI

PURPOSE: Pavement Design

Discussion:

1. Ms. Cullen provided an introduction and outlined the purpose of the call is to confirm what is being proposed for pavement design. This includes the method and materials necessary for a cost estimate.
2. Ms. Becica outlined two ideas to address the pavement on Haddon Avenue, Rubblization and installation of a concrete gutter with a steep slope.
3. Ms. Becica noted that other counties, perhaps Ocean, is rubblizing concrete roadways in high volume residential streets. With rubblized concrete, the rebar stays in. The top elevation drops enough to pave over it. She doesn't know if feasible.
4. Mr. Boerchers noted that rubblization was looked at as one pavement alternative. GPI's experience is that it actually increases the height of pavement. Mr. Boerchers will call Mark Jehnke of Ocean County and confirm.
5. Ms. Becica noted that Ocean County used rubblization on a main artery. The equipment is narrow and quiet and can be accomplished quickly.
6. Related to the concrete gutter, Ms. Becica noted that Camden County is doing this on two streets: Hopkins and Hood between Cuthbert Blvd and Crystal Lake Ave in Audobon. When installing the concrete gutter, they make sure the edge closest to the travel way is two inches higher than the existing road bed. Gutter line has a steep slope; 6% for example. Asphalt is laid on top of the existing concrete as part of the new roadway surface to provide a consistent cross-slope. Ms. Becica noted the advantage of this would be not having to raise curbs for handicap ramps. The drawback is that it provides for only 2" of asphalt on top of concrete.

7. Ms. Becica noted that her standard for repair is that if a transverse joint is open more than 3", the County will perform a 4 1/2' slab repair on either side. If 3" or less, the practice is to clean out the joint, put in backer road, seal joint, then pave over. Ms. Becica indicated that she likes binder rich intermediate course with 2" asphalt on top. Get less cracks, but still imperfect. Reflective cracks will come through over the long term.
8. Ms. Becica noted that she does not think we can raise gutter line 3" on Haddon Avenue. We should consider keeping the top of curb the same and drop the gutter down.
9. Ms. Becica noted that in Haddon Township, the County created a gutter 2' wide instead of 3' wide. On many roads slabs have separated by more than 3". A lot of joints on Haddon Ave are pretty good. She did not observe a lot of open joints. Ms. Becica noted that on Haddon Avenue, we have slabs that have cracked around manholes, utility openings.
10. Ms. Steponanko indicated that opening for utility replacements will create more pavement problems.
11. Ms. Becica asked if the utility replacement will require opening the pavement? Mr. Boerchers indicated yes. Mr. Schroeder noted that the understanding was full replacement of sanitary sewer and installation of new storm sewer.
12. Ms. Becica noted that the County is learning from other projects and CCMUA that full replacement is now not going to be feasible. Full replacement may only be feasible for about 25% of the project, likely around Kaighns Avenue. CCMUA will want to go with lining most of the existing sewer rather than replacing.
13. Mr. Schroeder noted that GPI was not able to identify manhole inverts during the survey. If now looking at lining and maintaining the existing this will be important information.
14. Ms. Becica noted that the combined sewer or replacement will be managed by CCMUA, not the County. The only thing the county will do is separation, where required. Lining costs will not be included in this project.
15. Mr. Boerchers asked if the County knows where the sewer will be separated.
16. Ms. Becica indicated that there are maps of the sewer system from CCMUA's consultant. A drainage shed around Kaighns or Baird that may be a possibility to drain to. Tried to clean some of the combined sewer systems and chance of collapse is high.
17. Mr. Boerchers noted that previous conversations/assumptions are full-depth pavement replacement.
18. Mr. Boerchers noted that Concept Development is 90%+ done. Looking at tie-ins. CD report almost complete.
19. Ms. Becica directed GPI to not change anything. She asked if in the cost estimate, do we have cost for the replacement of the sewer and new storm sewer separated? Mr. Boerchers indicated yes, by item.
20. Ms. Becica asked if GPI has subtotals for these items? The CD report executive summary should indicate sewer, storm sewer costs. Mr. Boerchers indicated this should be Ok.

21. Ms. Becica noted that the CD Report is extremely important, but we do not have to change it. Camden County is constructing improvements to Haddon Avenue in Collingswood in next couple of years and this will be valuable information. Subtotals for roadway, combined sewer, etc. will help in this regard.
22. Ms. Becica indicated that she would like the cost estimate changed and the PE/FD scope updated to have the PE/FD consultant provide for alternative pavement designs.
23. Mr. Boerchers indicated that this makes sense for CD. Typically, we would like to have the pavement section nailed down during CD, but it's not the first time that this approach has been taken.
24. Ms. Becica asked if pavement design is 6" subbase, 6' base course and 2" top course? Mr. Boerchers indicated yes.
25. Ms. Becica asked if the cost estimate provides for the removal materials? Mr. Boerchers indicated yes.
26. Ms. Becica asked if GPI assumed contaminated material in the cost estimate? Mr. Boerchers indicated yes.
27. Ms. Cullen raised the idea of the use of High-Performance Thin Overlay (HPTO), discussed by the County on other projects.
28. Ms. Becica asked if HPTO is feasible?
29. Mr. Boerchers indicated that GPI will call Robert Blight at DOT. He doesn't think DOT has done a lot of jobs.
30. Ms. Becica asked what do we have to change in the PE SOW? Mr. Boerchers indicated that we will indicate that the selected firm will provide for a full-depth pavement option as well as other pavement design options, including rubbilization, 2' concrete gutter, and HPTO if we determine they are reasonable. These will be added as alternatives in the PE SOW if they are deemed reasonable after discussing with NJDOT and others.
31. Ms. Becica noted that the combined sewer would be under the jurisdiction of City of Camden and CCMUA.
32. Mr. Boerchers asked the sewer improvements should be included in the cost estimate. Ms. Becica noted that it should be broken out separately.
33. Ms. Becica noted that on the 27th Street project, Andy Krichun, Camden County Municipal Utility Authority (CCMUA), is going to design and replace combined sewer systems with his funding. County receiving I-Bank money for roads, street lights. PE scope for Haddon includes possible new ways of doing things.
34. Mr. Boerchers noted that GPI examined the impacts of a 45' NJT bus on Alternative 1. It does require some changes, such as moving stop bars back, channelization modifications, etc., however, bus routes provided indicate that buses are not making turns on/off Haddon Avenue. Would like to make channelization island adjustments at Kaighns Avenue, but leave Alternative 1 as is elsewhere.

35. Ms. Becica agreed. Also agrees it is a straight shot. Kaighns is one intersection where it may make some sense for the future.
36. Ms. Cullen noted that the other potential location for bus turns is from Pine Street, making a left onto Haddon. Ms. Becica noted that this turning movement has been taken care of under another project.
37. Mr. Boerchers asked if the County wanted a PowerPoint for the IRC? Ms. Becica indicated yes, but we can reduce the number of slides.
38. Mr. Kuhn noted that the CD report must be completed before the IRC request is made.
39. Ms. Becica noted that orienting attendees with the project is helpful. At another meeting, a video was provided taking viewers on a drive of the road so they can get a good perspective of the area and conditions. It was a good tool. Mr. Boerchers indicated that we will put something together for the IRC.
40. Ms. Cullen noted that a map and video within the project limits is helpful. Mr. Boerchers indicated yes, that will be provided along with some landmarks/key features to help in orienting viewers with the project area.
41. Ms. Becica noted that a video of the entire length is not required. Mr. Boerchers acknowledged.
42. Mr. Boerchers indicated that we need resolutions of support. Ms. Becica asked what specifically do we need? Mr. Boerchers indicated resolutions from the City of Camden and Camden County.
43. Ms. Cullen noted that NJDOT Local Aid asked for a letter from the county confirming selection of PPA. Resolutions are not required now. Kathy will double check with Lauren Coe at NJDOT Local Aid.
44. Ms. Cullen asked for a timeline for completing the report. Mr. Boerchers indicated two to three weeks.
45. Mr. Boerchers noted that a reasonable assurance of design exception has been submitted for the County's approval. Ms. Becica noted that she has it in hand for review.
46. Ms. Cullen noted that when the draft CD report done please get it over for their review and they will review quickly.

Action Items:

1. GPI will contact Mark Jehnke, Ocean County to confirm if rubblization of pavement increases pavement height over the existing elevation.
2. GPI will update the PE/FD RFP SOW to incorporate consideration pavement alternatives such as rubblization, installation of steep-slope concrete curbs and HPTO, subject to additional discussion with NJDOT, Robert Blight re HPTO and Mark Jehnke re rubblization. GPI will reach out to NJDOT Robert Blight to discuss HPTO.
3. GPI will identify in the CD report that pavement alternatives will be examined in PE.

4. GPI will break out costs for sewer and drainage improvements separately from the roadway reconstruction estimate.
5. GPI will identify in the executive summary the estimated costs for separation of portions of the system.
6. GPI will modify Alternative 1 to provide channelization modifications to allow for 45' NJT bus turning movements at the Kaighns Avenue intersection. No other changes to accommodate 45' bus turns will be made to Alternative 1.
7. GPI will develop a video clip of Haddon Avenue for use at the Interagency Review Committee presentation. An updated map with landmarks will also be prepared.
8. Ms. Cullen will confirm with NJDOT Local Aid what is required in terms of county and municipal support to graduate the project from Concept Development.

These minutes constitute our understanding of the discussions and conclusions reached. Please advise us within ten (10) days, in writing, of any exceptions or corrections.

Respectfully submitted,

Dave Kuhn, PE
Senior Project Manager

cc: Kevin Becica, Camden County Engineer
Kathy Cullen, Cooper's Ferry Partnership
Joe Myers, Cooper's Ferry Partnership
Bernard Boerchers, GPI
Julia Steponanko, GPI
Attila Toth, GPI
Richard Schroeder, GPI

APPENDIX R

PRELIMINARY ENGINEERING SCOPE STATEMENT

**SCOPE OF WORK FOR
PRELIMINARY ENGINEERING AND FINAL DESIGN
HADDON AVENUE (CR561) IMPROVEMENT PROJECT
EUCLID AVENUE TO NEWTON AVENUE (CR604)
CITY OF CAMDEN, CAMDEN COUNTY**

TASK 1 – MEETINGS AND COORDINATION OVER ENTIRE PROJECT

1A. Meetings and Coordination

The Consultant shall prepare and distribute all meeting agendas, including handouts if applicable, electronic slideshow presentations. The Consultant shall prepare and distribute all meeting minutes within three (3) business days. All design related and decision-making actions shall be noted as ACTION ITEMS in the meeting agenda and meeting minutes. The number of meetings shall be reflected in the Consultant's technical proposal. These meetings may include the following:

- Local Officials Meetings;
- Status Meetings;
- Biweekly Conference Calls;
- Monthly in-person meetings;
- Community Meetings;
- Stakeholders Meetings;
- Public meetings with the City of Camden;
- Public meetings with the Camden County Board of Freeholders;
- Subject Matter Expert (SME) meetings with NJDOT (NJDOT/NJDEP/SHPO/BEPR)
- Any other meetings required.

Camden County has hired Cooper's Ferry Partnership (CFP) as Program Manager for the State Transportation Improvement Projects, including this specific project. CFP has extensive knowledge and experience in the City of Camden including community groups, business organization and government agencies. CFP will coordinate with the various institutions, businesses and community partners impacted by the project, including Parkside Neighborhood stakeholders, Parkside Business & Community in Partnership (PBCIP) and the business district.

CFP will schedule and coordinate all meetings related to the project including concept design kickoff meeting, community meetings, public meetings, stakeholder meetings, concept design progress meetings, utility coordination meetings, and meetings with NJDOT/NJDEP/SHPO. CFP shall be responsible for setting up all meeting dates, times and locations to ensure the Consultant, Camden County personnel, outside agencies, state and local government officials, and/or any other stakeholders have adequate notice to attend meetings during the PE/FD process.

1B. Project Controls

The Consultant shall be responsible for implementing and managing the following project controls:

- Preparation and filing of all project correspondences, memorandums, meeting minutes, transmittals, etc., in both hard and electronic media;
- Maintenance of project schedule submitted under Section 6 for the project duration which shall identify all project tasks and milestone. An updated project schedule shall be distributed to the County every three months. The project schedule does not have to be prepared on any specific software.

-
- Monthly invoicing/progress reports per Section 7.
 - Documentation of any deviations from the Consultant staff submitted under the response to this Scope of Work shall be submitted for prior review and approval by Camden county.
 - Documentation of any deviations from the Consultant shall identify and provide justification for deviations from the standing project schedule or budget.

1C. Major Deliverables for Task 1:

- Detailed project schedule to be submitted at the kick-off meeting for review and approval
 - by County;
- Interim project schedule updates provided on a quarterly basis;
- Meeting agendas (including necessary handouts/presentations) and minutes, including written summaries of all project management meetings;
- Monthly progress reports, corresponding to invoices.

TASK 2 – STAKEHOLDER AND PUBLIC INVOLVEMENT

The scope of this task includes, but is not limited to, reviewing the Concept Development Report, obtaining stakeholder input, developing the community profile, preparing the Public Involvement Action Plan (PIAP), and preparing the Design Communications Report (DCR).

2A. Stakeholder Coordination

The Consultant shall coordinate with the various stakeholders to advise them and gather input as the project progresses through Preliminary Engineering and Final Design. The Consultant should work with CFP utilizing the community profile information developed during the Concept Development Phase, to communicate with the community and gather input throughout the process.

2B. Public Involvement Action Plan

The Consultant shall review and update the Public Involvement Action Plan (PIAP) which includes strategies for communicating project information to stakeholders and soliciting project feedback. The PIAP should be relevant to the project and developed in consultation with the project stakeholders. The purpose of the plan is to solicit public involvement throughout Preliminary Engineering (PE), Final Design (FD) and Construction (CON).

The PIAP shall include the number of anticipated meetings with local officials, citizens groups, external public and private agencies, and any others impacted by the proposed project. The PIAP should outline in a memorandum all anticipated outreach efforts from PE through Construction.

It should be noted that the PIAP is a “living” document that shall be amended in consultation with all stakeholders as the project advances through PE and FD. The Consultant shall submit the PIAP to the stakeholders for their review, records, and distribution. The final deliverable including number of copies and media type shall be as determined by Camden County and Cooper’s Ferry Partnership (CFP).

2C. Design Communication Report

The Consultant shall maintain a Design Communication Report (DCR) throughout the PE and FD Phases consistent with NJDOT guidelines. The DCR shall provide a record of all relevant communication, decisions, agreements, and approvals that occur between the Consultant, Camden County CFP, NJDOT, NJDEP, SHPO, and any and all stakeholders. The Consultant shall clearly outline in their response to this Scope of Work the methods and procedures for maintaining the DCR.

2D. Major Deliverables for Task 2:

- Public Involvement Action Plan;
- Design Communication Report.

TASK 3 – SURVEY AND BASE MAPPING

- Perform field survey to supplement and update survey completed during the Concept Development Study based on the Preliminary Preferred Alternative. The field survey will collect and update existing data (including sidewalks, curbs, buildings and all potential objects/structures (i.e. benches, poles, cabinet boxes, trees etc.) that could impact design including ADA compliance. The survey must also include storm sewer inverts that could not be collected during Concept Development. The survey shall extend 200 feet past the project limits on signalized side streets, 100 feet on un-signalized side streets and 200 feet on the major street(s). Survey shall include all available ROW evidence such as deeds and filed maps.
- Perform a field edit and update base mapping prepared in Concept Development.
- The survey update will include storm sewer inverts and other changed field conditions. Note that many of the storm sewer manhole covers are welded shut. The consultant will need to coordinate with the City to gain access to these manholes.
- ROW survey with deed mosaic, as necessary.
- For all parcels, show block, lot, street address, and name of current owner.

TASK 4 – PRELIMINARY ENGINEERING (60% COMPLETE PLANS)

- Perform post-survey/base map field verification and ADA compliance review.
- Prepare 60% complete design plans based on the Preliminary Preferred Alternative developed in the Concept Development Study.
- Determine the locations of all sidewalks, curb ramps and traffic signal foundations in order to identify all locations where Rights of Entry and/or easements will be required. Analyze these locations to eliminate or reduce Right-of-Way impacts. Summarize the findings in a memorandum to Camden County for further discussion.
- Perform an analysis of pavement alternatives and provide a pavement recommendation. Pavement alternatives will include, but not be limited to Full Reconstruction, Rubblization, and Use of a High-Performance Thin Overlay (HPTO) in combination with steep-slope concrete curbs.
- Develop updated preliminary construction cost estimates based on the 60% complete plans.
- Prepare a PowerPoint presentation and handout materials to be presented to project stakeholders and the public.

TASK 4 – ROW DOCUMENTATION

- Identify all ROW impacts.
- Perform deed searches and survey (as needed)

-
- Prepare individual parcel maps and deed descriptions for properties where Rights-of-Entry (ROE) or easement agreements are needed.
 - Prepare excel tables of parcels requiring row acquisitions and/or easement agreements
 - Prepare letters to property owners for easement agreements
 - Track status of all row acquisitions acquired through County Counsel

TASK 5: TRAFFIC ANALYSIS

- Perform supplemental traffic counts, pedestrian counts, bicycle counts, traffic modeling (as needed to determine existing conditions, effects of road diets, lane transitions), signal timing analysis, LOS analysis as required.
- Perform traffic and lighting analysis (including pedestrian scale lighting) as needed
- Analyze turning movements for trucks and buses as needed.

TASK 6 – UTILITY COORDINATION

- Review and Update existing Utility Base Plans based on updated survey
- Send Utility Verification Request Letter gather responses from Utility Companies
- Identify overhead and underground utility conflicts, and confirm utility locations by means of subsurface utility investigations as needed.
- Perform test pits, pavement cores as needed.
- Prepare utility cost estimate
- Prepare the Utility Agreement Plans as needed (see NJDOT sample utility agreement plan online)

TASK 7 – ENVIRONMENTAL DOCUMENTATION/PERMITTING

- Complete EO215 documentation based on the Preliminary Preferred Alternative.
- Determine all required permitting and approvals (e.g. wetlands, stream encroachment, stormwater management, etc.).
- Prepare all necessary plans, notifications and documentation, applications (includes communication and meeting attendance with NJDEP, SHPO, D&R Canal Commission or other agencies).
- Submit permit applications and on behalf of Camden County (excluding permit fees), coordinate relevant review meetings, and see the permitting process through to approval.

TASK 8 – FINAL DESIGN 9 (CONTRACT DOCUMENTS/PS&ES)

- Prepare construction plans showing geometry, ties, profiles, sections, signing, striping, drainage, guiderail, lighting, and all other details, as required to construct the proposed improvements.
- Prepare plans for construction of sidewalks, curb extensions, curb ramps, pedestrian crossings (including mid-block crossings and islands) and driveways.
- Prepare traffic signal improvement plans (including signal and electrical plans, which will include lane configurations, signal phasing, image detection, fiber optic interconnects, signal pre-emption for fire stations, etc.).
- Prepare plans for bus turn-outs and loading areas.
- Prepare traffic control and construction staging plans in accordance with the MUTCD.
- Prepare construction schedules.
- Prepare construction specifications.
- Prepare construction cost estimates and provide calculations for all contract quantities. Use standard NJDOT items when possible, obtain permission from Subregion project sponsors for

use of specialty items. Avoid lumping standard construction work into single line items (such as pavement removal or excavation under site clearing)

- Prepare design exception report
- Prepare documentation of ADA ramp compliance and/or technical infeasible forms
- Prepare and submit soil erosion permits
- Prepare Traffic Management Plans

At a minimum, final submission plans shall include the following:

1. Key sheet
2. Typical sections
3. Estimate of Quantities
4. Plan Sheet Layout
5. Construction Plans
6. Grading Plans
7. Ties
8. Profiles
9. Signing and Striping Plans
10. Lighting Plans (if needed)
11. Traffic Control/Detour Plans (including pedestrian detour plans)
12. Environmental Plans (if needed)
13. Cross-Sections, Method of Sections and Earthwork Summary
14. Construction Details for Roadway Related and Structural Related Items
15. Construction staging plans including work zones, lane reductions and transitions, signal staging, pedestrian staging, and construction sequence.
16. Final Parcel Maps and Descriptions

A set of PS&Es shall be provided to Camden County for review and comment prior to submission to NJDOT-LA. Once revisions have been made, the consultant shall submit a full set of PS&E's to NJDOT-LA. Once the PS&E has been reviewed by NJDOT-LA, comments shall be addressed by the consultant and revised plans shall be prepared and provided to Camden County for review prior to resubmission. There may be several rounds of revisions in order to address all comments from NJDOT-LA. Once all comments have been received from Local Aid and addressed, four sets of PS&E's shall be prepared (two copies for Camden County and two copies for Local Aid). An electronic copy of the plans, specifications, and estimate shall be made available for Camden County. These documents shall be complete and ready for public bidding. See **Appendix D** for the PS&E checklist applicable for all federal construction projects authorized by NJDOT-LA. The consultant shall provide the final number of copies for bidding requested by the Project Sponsor (maximum of 20 sets of plans & specs, two reduced sets of plans).

TASK 9 – BID CONSULTATION AND CONSTRUCTION SERVICES

- Provide design support services during the construction bidding phase, including review of bid prices; providing support to the Project Sponsor on design related questions.
- Provide shop drawing reviews, review of significant RFI's and preparation of field modifications in Bidding/Construction Phase.

APPENDIX S

COMPLETE STREETS CHECKLIST

Camden County Complete Streets Checklist

CONCEPT DEVELOPMENT CHECKLIST

Instructions:

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Existing Bicycle, Pedestrian and Transit Accommodations</i>	Are there accommodations for bicyclists, pedestrians (including ADA compliance) and transit users included on or crossing the current facility? Examples include (but are not limited to): Sidewalks, public seating, bike racks, and transit shelters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sidewalks, ADA ramps, crows-walks. All in deteriorated condition. No bicycle accommodations.
<i>Existing Bicycle and Pedestrian Operations</i>	Has the existing bicycle and pedestrian suitability or level of service on the current transportation facility been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pedestrian facilities exist, including signals, but could be improved. Bicycle facilities do not exist.
	Have the bicycle and pedestrian conditions within the study area, including pedestrian and/or bicyclist treatments, volumes, important connections and lighting been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bicycle, pedestrian conditions have been identified. No formal counts.
	Do bicyclists/pedestrians regularly use the transportation facility for commuting or recreation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Used for both.
	Are there physical or perceived impediments to bicyclist or pedestrian use of the transportation facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No dedicated bicycle lanes. Pedestrian facilities are not to current practice.
	Is there a higher than normal incidence of bicyclist/pedestrian crashes within the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Higher than the statewide average.
	Have the existing volumes of pedestrian and/or bicyclist crossing activity at intersections including midblock and nighttime	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
	crossing been collected/provided?				
<i>Existing Transit Operations</i>	Are there existing transit facilities within the study area, including bus and train stops/stations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bus stops.
	Is the transportation facility on a transit route?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the transportation facility within two miles of "park and ride" or "kiss and go" lots?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Are there existing or proposed bicycle racks, shelters, or parking available at these lots or transit stations? Are there bike racks on buses that travel along the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No bike racks. Not aware if buses have bike racks.
<i>Existing Motor Vehicle Operations</i>	Are there existing concerns within the study area, regarding motor vehicle safety, traffic volumes/congestion or access?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes, conflicts with pedestrian.
<i>Existing Truck/Freight Operations</i>	Are there existing concerns within the study area, regarding truck/freight safety, volumes, or access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Access and Mobility</i>	Are there any existing access or mobility considerations, including ADA compliance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes, ADA will be considered at street crossings.
	Are there any schools, hospitals, senior care facilities, educational buildings, community centers, residences or businesses of persons with disabilities within or proximate to the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Land Usage</i>	Have you identified the predominant land uses and densities within the study area, including any historic districts or special zoning districts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
	Is the transportation facility in a high-density land use area that has pedestrian/bicycle/ motor vehicle and transit traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Major Sites</i>	Have you identified the major sites, destinations, and trip generators within or proximate to the study area, including prominent landmarks, employment centers, recreation, commercial, cultural and civic institutions, and public spaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Streetscape</i>	Are there existing street trees, planters, buffer strips, or other environmental enhancements such as drainage swales within the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes, some trees, but in a state of disrepair.
<i>Existing Plans</i>	<p>Are there any comprehensive planning documents that address bicyclist, pedestrian or transit user conditions within or proximate to the study area?</p> <p>Examples include (but are not limited to):</p> <ul style="list-style-type: none"> • SRTS Travel Plans • Municipal or County Master or Redevelopment Plan • Local, County and Statewide Bicycle and Pedestrian Plans • Sidewalk Inventories • MPO Transportation Plan • NJDOT Designated Transit Village 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Camden Circuit Trails Plan.

Camden County Complete Streets Checklist

PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
The Preliminary Preferred Alternative (PPA) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation's Complete Streets Policy.	<input type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

PRELIMINARY ENGINEERING CHECKLIST

Instructions:

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Bicyclist, Pedestrian, and Transit Accommodations</i>	<p>Does the proposed project design include accommodations for bicyclists?</p> <p>Examples include (but are not limited to):</p> <p>Bicycle facilities: bicycle path; bicycle lane; bicycle route; bicycle boulevard; wide outside lanes or improved shoulders; bicycle actuation at signals (loop detectors and stencil or other means); signs, signals and pavement markings specifically related to bicycle operation on roadways or shared-use facilities; bicycle safe inlet grates</p> <p>Bicycle amenities: Call boxes (for trail or bridge projects); drinking fountains (also for trail projects); secure long term bicycle parking (e.g., for commuters and residents); and secure short term bicycle parking.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<p>Does the proposed project design address accommodations for pedestrians?</p> <p>Examples include (but are not limited to):</p> <p>Pedestrian facilities: Sidewalks (preferably on both sides of the street); mid-block crosswalks; striped crosswalks; geometric modifications to reduce crossing distances such as curb extensions (bulb-outs); pedestrian-actuated traffic signals such as High Intensity Activated Crosswalk Beacons, Rapid Rectangular Flashing Beacons; dedicated pedestrian phase; pedestrian</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
	<p>signal heads and pushbuttons; pedestrian signs for crossing and wayfinding, lead pedestrian intervals; high visibility crosswalks (e.g., ladder or zebra); pedestrian-level lighting; in-road warning lights; pedestrian safety fencing; pedestrian detection system; pedestrian overpass/underpass; and median safety islands for roadways with (two or more traffic lanes in each direction).</p> <p>Pedestrian amenities: Shade trees; public seating; drinking fountains</p>				
	<p>Have you coordinated with the corresponding transit authority to accommodate transit users in the project design?</p> <p>Transit facilities: Transit shelters, bus turnouts</p> <p>Transit amenities: public seating, signage, maps, schedules, trash and recycling receptacles</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Bicyclist and Pedestrian Operations</i>	Does the proposed design consider the desired future bicyclist and walking conditions within the project area including safety, volumes, comfort and convenience of movement, important walking and/or bicycling connections, and the quality of the walking environment and/or availability of bicycle parking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Transit Operations</i>	Does the proposed design address the desired/anticipated future transit conditions within the project area, including bus routes and operations and transit station access support transit usage and users?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Motor Vehicle Operations</i>	Does the proposed design address the desired future motor vehicle conditions within the project area, including volumes, access, important motor vehicle connections, appropriateness of motor vehicle traffic to the particular street (e.g., local versus through traffic) and the reduction of the negative impacts of motor vehicle traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Truck/Freight Operations</i>	Does the proposed design address the desired future truck conditions within the project area, including truck routes, volumes, access, mobility and the reduction of the negative impacts of truck traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Access and Mobility</i>	Does the proposed design address accommodations for those with access or mobility challenges such as the disabled, elderly, and children, including ADA compliance? Examples include (but are not limited to): Curb ramps, including detectable warning surface; accessible signal actuation; adequate sidewalk or paved path (length & width or linear feet); acceptable slope and cross-slope (particularly for driveway ramps over sidewalks, over crossings and trails); and adequate green signal crossing time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Land Usage</i>	Is the proposed design compatible with the predominant land uses and densities within the project area, including any historic districts or special zoning districts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Major Sites</i>	Can the proposed design support the major sites, destinations, and trip generators within or proximate to the project area, including prominent landmarks, <i>commercial</i> , cultural and civic institutions, and public spaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Camden County Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Streetscape</i>	Does the proposed design include landscaping, street trees, planters, buffer strips, or other environmental enhancements such as drainage swales?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Design Standards or Guidelines</i>	<p>Does the proposed design follow all applicable design standards or guidelines appropriate for bicycle and/or pedestrian facilities?</p> <p>Examples include (but are not limited to): American Association of State Highway and Transportation Officials (AASHTO) - <i>A Policy on Geometric Design of Highway and Streets, Guide for the Development of Bicycle Facilities, Guide for the Planning, Design, and Operation of Pedestrian Facilities; Public Right-of-Way Accessibility Guide (PROWAG); Manual on Uniform Traffic Control Devices (MUTCD); Americans with Disabilities Act Accessibility Guidelines (ADAAG); National Association of City Transportation Officials (NACTO) - Urban Bikeway Design Guide; New Jersey Department of Transportation (NJDOT) - Bicycle Compatible Roadways & Bikeways Planning and Design Guidelines, Pedestrian Planning and Design Guidelines.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
The Approved Project Plan (APP) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation's Complete Streets Policy.	<input type="checkbox"/>	<input type="checkbox"/>	

APPENDIX T

COMPACT DISK

The following is included on compact disk with printed copies of the CD Report.

- Available Plans (Appendix B)
- Utility Log, Utility Verification Responses and Plans
- Community Profile
- Tax Maps
- Existing Timing Directives

APPENDIX U

CATEGORICAL EXCLUSION DOCUMENT
PROJECT DESCRIPTION/PURPOSE AND NEED

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CATEGORICAL EXCLUSION DOCUMENTATION

CED Form Updated February 24, 2014

I. GENERAL INFORMATION

DOT Job Code No.		Federal Project No.	
Project Management Team		UPC No.	
Route & Section	Haddon Avenue (CR 561) from Euclid Ave. to Newton Ave. (CR 604)	Structure No.	N/A
Local Road Name	Haddon Avenue		
Municipality(ies)	City of Camden	County(ies)	Camden County
Type of Project	Streetscape Enhancements; Pedestrian, Bicycle and Traffic Operational Improvements	Length	1.13 miles
From Milepost	49.54	To Milepost	50.67
Congressional District	1st	Legislative District	5th
ROW Cost	TBD	Construction Cost	\$20,383,000

EXISTING FACILITY			
ROW Width	66'		
No. Lanes & Width	1 lane in each direction at 12' wide, except for the 140' section of roadway under the DRPA/PATCO bridge where a 10.5' lane is provided.		
Shoulder Width	N/A	Median	N/A
Overall Roadway Width	42' total pavement width		

PROPOSED FACILITY			
ROW Width	66'		
No. Lanes & Width	1 lane in each direction, either 11' or 12' wide, except for the section of roadway under the DRPA/PATCO bridge where a 10.5' lane is provided.		
Shoulder Width	N/A	Median	N/A
Overall Roadway Width	42' total pavement width		

II. PROJECT DESCRIPTION (attach location map—USGS map suggested)

A. Project Need (briefly explain why the project is needed): The intent of this project is to reconstruct Haddon Avenue from Euclid Avenue to Newton Avenue, making Haddon Avenue safer for pedestrians, bicyclists, transit users and motorists; improving traffic flow through the area; bringing the infrastructure to a state of good repair and establishing a foundation for the redevelopment of the Camden neighborhoods of Parkside, Whitman Park, Gateway and Lanning Square.

The primary goal for the project is to bring pavement, traffic signals, signage and pavement markings to a state of good repair. Pavement in the study area is in poor condition. The existing traffic signal equipment, signing and pavement markings are outdated and not compliant with the Manual of Uniform Traffic Control Devices (MUTCD). Pedestrian curb ramps and pushbuttons are not compliant with the Americans with Disabilities Act (ADA). The existing sanitary and stormwater infrastructure within the study limits is a combined, brick sanitary/storm sewer system. Any project (s) emanating from this study should include the separation of the combined sewer

system and repair/replacement of the existing combined sewer system within the limits of this study area. Another major goal is to provide reasonable pedestrian and bicycle accommodations in accordance with the City of Camden and Camden County's Complete Streets Policies and in line with the City's vision for the redevelopment of Haddon Avenue.

B. Proposed Improvements (briefly describe the proposed improvements):

Proposed improvements will include:

- Maintenance of the existing alignment of Haddon Avenue. The cross section consists of a 12-foot wide lane with adjoining 8-foot wide parking lane in each direction.
- At the July 23, 2019 NJDOT Subject Matter Expert meeting, the suggestion was made to consider using a proposed cross section of either a 10-foot wide or 11-foot wide travel lane with adjacent 8-foot wide parking lane in each direction. Sidewalks on each side of the road could then be widened up to two (2) or three (3) feet, depending on the selected lane width. This alternative will be further investigated in Preliminary Engineering.
- Construction of curb extensions at signalized intersections (where feasible), designed to accommodate local fire department trucks and NJ Transit buses.
- Widening of sidewalks on each side of the roadway up to one (1) foot. Curb ramps and pedestrian pushbuttons will be brought into compliance with the ADA. Vehicular and pedestrian signals, signing and pavement markings, including crosswalks, will be upgraded to meet current MUTCD requirements.
- Removal of the existing concrete roadway and the construction of a full depth Hot Mix Asphalt (HMA) section for the project in accordance with the Camden County Development Regulations. Alternative pavement designs will be assessed during Preliminary Engineering.
- Streetscape improvements, including street trees, street furniture and decorative street lighting. Opportunities for green infrastructure will be considered.
- Possible separation of the combined sewer system and replacement of the existing combined sewer system within the study limits.

C. Right-of-Way Taking

Total area needed:		Est. No. parcels:	In fee-	easements-
Est. No. relocations:	residences-	businesses-	parking spaces-	
Community Facilities Affected:				
Area of public recreation land taken:		(acres)	Out of a total area of:	(acres)
<input type="checkbox"/>	Green Acres/State-owned Land Involvement			
<input type="checkbox"/>	Federally Owned/Federally Funded Land Involvement			
Comments:				

III. ENVIRONMENTAL CONSIDERATIONS

A. Noise

- ☐ Sensitive receptors exist within 200 feet for two lanes or 400 feet for four lanes.
- ☐ Project substantially changes the vertical or horizontal alignment of the roadway.
- ☐ Traffic volumes or speeds substantially increase.

Conclusion:

- ☐ Noise study not required because the project is a Type III project.
- ☐ Potential noise impacts were studied and are discussed in comments. Project still meets CE criteria.

Comments:

B. Air Quality: CONFORMITY WITH THE CLEAN AIR ACT AMENDMENTS (CAAA) OF 1990

Section 1: Regional Emissions Analysis (STIP or MPO's conforming transportation plan)	
<input type="checkbox"/>	Project is included in the current approved State Transportation Improvement Plan (STIP).
<input type="checkbox"/>	Project is not listed in the current approved STIP but is included in the MPO's conforming transportation plan.
<input type="checkbox"/>	Project is not included in either the approved STIP or the MPO's conforming transportation plan.

Section 2: Based on its scope, the project is categorized by the Transportation Conformity Rule (TCR) as:	
<input type="checkbox"/>	A project type listed in Table 2 of the TCR, i.e., Exempt from the conformity requirements of the CAAA (i.e., exempt from regional emissions analysis, Carbon Monoxide (CO) analysis, and Particulate Matter PM2.5 and PM10 analyses requirements) and may proceed towards implementation even in the absence of a conforming transportation plan and TIP.
<input type="checkbox"/>	A project listed in Table 3 of the TCR, i.e., Exempt from regional emissions analysis requirement, but local effects of this project with respect to CO, PM2.5 and PM10 concentrations must be considered to determine if a hot-spot analysis is required. <i>Complete Section 2a below.</i>
<input type="checkbox"/>	A project type not listed in Table 2 or Table 3 of the TCR, i.e., must be part of a conforming STIP and/or a MPO's conforming transportation plan and requires CO, PM2.5 and PM10 hot-spot analyses. <i>Complete Section 2a below.</i>

Section 2a(1): Project type listed in Table 3 of the TCR for CO analysis Project type not listed in either Table 2 or Table 3 of the TCR for CO analysis	
<input type="checkbox"/>	Project located in CO Attainment Area . CO analysis not required. Project may proceed to the project development process.
<input type="checkbox"/>	The total eight-hour Carbon Monoxide levels are expected to be reasonably below the NAAQS of 9 ppm. This is based on LOS data for the intersection(s) and the total highest traffic volumes at this (those) intersection(s) and the distance of the sensitive receptors to the roadway. No quantitative analysis is required. Project may proceed to the project development process even in the absence of a conforming transportation plan and TIP.
<input type="checkbox"/>	Project located in a Carbon Monoxide Non-Attainment/Maintenance Area and requires a Carbon Monoxide hot-spot analysis. A CO Analysis was completed at the following intersection(s): _____ And the results are: _____

Section 2a(2): Project type listed in Table 3 of the TCR for PM2.5 analysis Project type not listed in Table 2 or Table 3 of the TCR for PM2.5 analysis	
<input type="checkbox"/>	The project is located in PM2.5 Attainment Area . PM2.5 hot-spot analysis is not required. Project may proceed to the project development process.
<input type="checkbox"/>	The project is located in a PM2.5 Non-Attainment/Maintenance Area and the project is not an air quality concern under 40CFR 93.123(b) (1). Quantitative/qualitative analysis is not required. Project may proceed to the project development process.
<input type="checkbox"/>	The project is located in a PM2.5 Non-Attainment/Maintenance Area and the project is an air quality concern under 40CFR 93.123(b) (1). A PM2.5 hot-spot analysis was completed at the following location(s): _____ And the results are: _____

Section 2a(3): Project type listed in Table 3 of the TCR for PM10 analysis Project type not listed in Table 2 or Table 3 of the TCR for PM10 analysis	
<input type="checkbox"/>	The project is located in PM10 Attainment Area . PM10 hot-spot analysis is not required.

	Project may proceed to the project development process.
<input type="checkbox"/>	The project is located in a PM10 Non-Attainment/Maintenance Area and the project is not an air quality concern under 40CFR 93.123(b) (1). Quantitative/qualitative analysis is not required. Project may proceed to the project development process.
<input type="checkbox"/>	The project is located in a PM10 Non-Attainment/Maintenance Area and the project is an air quality concern under 40CFR 93.123(b) (1). A PM10 hot-spot analysis was completed at the following location(s): _____ And the results are: _____
Comments (include LOS, if appropriate):	

C. Potential Ecological Constraints (check those that apply)			
<input type="checkbox"/>	Floodplains	<input type="checkbox"/>	Shellfish Habitat
<input type="checkbox"/>	Wetlands	<input type="checkbox"/>	Acid Producing Soils
<input type="checkbox"/>	Vernal Pools	<input type="checkbox"/>	Submerged Aquatic Vegetation
<input type="checkbox"/>	Waterbody:	<input type="checkbox"/>	Sole Source Aquifer
	<input type="checkbox"/> Category One	<input type="checkbox"/>	Forested Areas
	<input type="checkbox"/> Trout Production	<input type="checkbox"/>	Threatened and Endangered Species:
	<input type="checkbox"/> Trout Maintenance		<input type="checkbox"/> State-listed species
	<input type="checkbox"/> Non-Trout		<input type="checkbox"/> Federally listed species
<input type="checkbox"/>	Wild and Scenic River	<input type="checkbox"/>	Other (specify):
<input type="checkbox"/>	Essential Fish Habitat		

Federally Listed Threatened & Endangered Species Checklist:	
[See http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html for guidance on the current US Fish and Wildlife Service (USFWS) Consultation Procedures.]	
No Effect:	
<input type="checkbox"/>	USFWS's Information, Planning and Conservation System (IPAC) revealed <i>no federally listed species</i> potentially present in the project's <i>action area</i> (see <i>USFWS website</i>). Therefore, the proposed activities will have no effect on federally listed species. Relevant general recommendations to protect other wildlife resources will be addressed in the project design. No further action is required under the Endangered Species Act.
Potential Effect:	
<input type="checkbox"/>	USFWS's IPAC revealed no federally listed species potentially present in the project's <i>action area</i> . However, <i>USFWS general recommendations to protect other wildlife species could not be implemented</i> . Consultation with the USFWS required.
<input type="checkbox"/>	USFWS's IPAC revealed <i>one (1) or more federally listed species</i> as potentially present in the project's <i>action area</i> . Section 7 Consultation required.
USFWS Consultation:	
<input type="checkbox"/>	The project requires authorization under the Freshwater Wetlands Protection Act. USFWS consultation will be coordinated with the NJ Division of Land Use Regulation during permit time. NOTE: Depending on the potential level of impact, consultation may be initiated prior to permit application. (Explain in comments below.)
<input type="checkbox"/>	The project is not anticipated to require authorization under the Freshwater Wetlands Protection Act. Consultation has been initiated with the USFWS NJ Field office. Correspondence attached.

Conclusion:	
<input type="checkbox"/>	No significant impact anticipated
<input type="checkbox"/>	Further studies are needed to obtain permits. Project still satisfies CE criteria.
Comments (briefly describe all potential ecological constraints):	

D. Anticipated Environmental Permits/Approvals/Coordination (check those that apply)			
<input type="checkbox"/>	US Coast Guard	<input type="checkbox"/>	NJDEP Pollutant Discharge
<input type="checkbox"/>	USACOE Section 10 (Navigable Waters)	<input type="checkbox"/>	NJDEP Dam Safety
<input type="checkbox"/>	USACOE Section 404 (Nationwide)	<input type="checkbox"/>	NJDEP Remediation Approval
<input type="checkbox"/>	USACOE Section 404 (Individual)	<input type="checkbox"/>	NJDEP Tidelands Conveyance
<input type="checkbox"/>	USEPA Sole Source Aquifer	<input type="checkbox"/>	EO 11990 Wetlands
<input type="checkbox"/>	NJDEP Freshwater Wetlands—GP	<input type="checkbox"/>	EO 11988 Floodplains
<input type="checkbox"/>	NJDEP Freshwater Wetlands—IP	<input type="checkbox"/>	NJDEP Highlands Preservation Area:
<input type="checkbox"/>	NJDEP Transition Area Waiver	<input type="checkbox"/>	<input type="checkbox"/> Exempt
<input type="checkbox"/>	NJDEP Coastal Wetlands	<input type="checkbox"/>	<input type="checkbox"/> Highlands Applicability Determination
<input type="checkbox"/>	NJDEP Waterfront Development	<input type="checkbox"/>	<input type="checkbox"/> Highlands Preservation Area Approval
<input type="checkbox"/>	NJDEP CAFRA	<input type="checkbox"/>	USDA-Farmland Conversion (Form AD 1006)
<input type="checkbox"/>	NJDEP Flood Hazard Area Permit—GP	<input type="checkbox"/>	NJ Agriculture Development Area
<input type="checkbox"/>	NJDEP Flood Hazard Area Permit—IP	<input type="checkbox"/>	NJDEP Green Acres Program/State House Comm.
<input type="checkbox"/>	NJDEP Stormwater Management:	<input type="checkbox"/>	National Marine Fisheries Service
<input type="checkbox"/>	<input type="checkbox"/> ≥ 0.25 acre additional net impervious surface	<input type="checkbox"/>	NJDEP Parks & Forestry (PL 2001 Chapter 10 Reforestation)
<input type="checkbox"/>	<input type="checkbox"/> ≥ 1.0 acre disturbance	<input type="checkbox"/>	D&R Canal Commission
<input type="checkbox"/>	<input type="checkbox"/> Unknown at this time	<input type="checkbox"/>	Meadowlands Commission
<input type="checkbox"/>	<input type="checkbox"/> Approval through NJDEP LURP Permit (or)	<input type="checkbox"/>	Pinelands Commission
<input type="checkbox"/>	<input type="checkbox"/> NJDOT self-certification	<input type="checkbox"/>	Endangered Species Act Section 7 Consultation
<input type="checkbox"/>	NJPDES Construction Activity Stormwater GP (RFA)	<input type="checkbox"/>	NJDEP Threatened & Endangered Species Coordination
<input type="checkbox"/>	NJDEP Water Quality Certificate	<input type="checkbox"/>	Other (specify):
Comments:			

E. Cultural Resources	
Technical Findings:	
<input type="checkbox"/>	Project is not an undertaking for Section 106 purposes; concurrence has been received from FHWA.
<input type="checkbox"/>	No Effect per DOT/SHPO Agreement of 05/14/09; subject to conditions identified in the Agreement.
<input type="checkbox"/>	No Section 106 Consultation per 5/25/01 SHPO concurrence with <i>Section 106 Compliance Procedures, Federally Funded Drainage Improvement Program</i> ; subject to conditions identified in the Agreement.
<input type="checkbox"/>	No Effect to significant properties if they exist in Area of Potential Effects (APE) per 36CFR800.3(a)(1) with SHPO concurrence. (Because the Section 106 regulations allow for a level of effort for conducting and evaluating cultural resources to be commensurate with the undertaking, this category of finding was developed to be used for certain projects when no cultural resources survey has been conducted; and self-imposed conditions, if applicable, are presented as part of the undertaking, e.g., Pipeline 3 or other small-scale projects.)
<input type="checkbox"/>	No National Register (NR) listed or eligible properties in APE (Section 106 Findings = No Historic Properties Affected).
<input type="checkbox"/>	New Jersey Register <i>listed</i> properties in APE (see comments and K. Environmental Commitments below).
<input type="checkbox"/>	National Register listed/eligible properties exist within APE (see consultation summary below).

Archaeology	Architecture				Section 106 Finding
	Bridge	Building	District	Other	
					NR listed/eligible property(ies)— No Historic Properties Affected
					NR listed/eligible property(ies)— No Adverse Effect (NAE)
					NR listed/eligible property(ies)— NAE with conditions
					NR listed/eligible property(ies)— Adverse Effect

Section 106 Consultation Summary		Date
<input type="checkbox"/>	FHWA concurred with Adverse Effect Finding	
<input type="checkbox"/>	SHPO provided Section 106 consultation comments	
<input type="checkbox"/>	FHWA concurred with No Adverse Effect with Conditions	
<input type="checkbox"/>	ACHP notified of Adverse Effect	
<input type="checkbox"/>	ACHP responded to notification (check one/enter date): <input type="checkbox"/> ACHP will participate in consultation <input type="checkbox"/> ACHP declined to participate in consultation	
<input type="checkbox"/>	MOA executed by FHWA (check one/enter date): <input type="checkbox"/> MOA filed with ACHP <input type="checkbox"/> ACHP accepted/signed MOA	
Comments (include MOA stipulations or other conditions, if applicable) :		

F. Section 4(f) Involvement	
Section 1: Historic Sites	
<input type="checkbox"/>	No Section 4(f) Involvement
<input type="checkbox"/>	Project results in a "constructive use" of Section 4(f) property.
<input type="checkbox"/>	Project results in a use of Historic site(s) on or eligible for the National Register of Historic Places (check one below):
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under de minimis Evaluation of Impacts and all applicability criteria have been met, including concurrence <i>first</i> by the FHWA that the project meets the applicability criteria, and <i>then</i> concurrence by SHPO with the "No Effect" or "No Adverse Effect" determination <i>after</i> they are notified of the intent to use a <i>de minimis</i> finding.
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under the Nationwide Section 4(f) Programmatic Evaluation for minor involvement and all applicability criteria have been met, including concurrence by the SHPO (or ACHP) with the "No Effect" or "No Adverse Effect" determination.
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under the Nationwide Section 4(f) Programmatic Evaluation for Net Benefits and all applicability criteria have been met, including notification to and concurrence by the FHWA with the determination.
<input type="checkbox"/>	Section 4(f) Involvement. Project has an "Adverse Effect" determination. Individual Section 4(f) was prepared.
Comments:	

Section 2: Historic Bridges	
<input type="checkbox"/>	No Section 4(f) Involvement

<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under the Nationwide Section 4(f) Programmatic Evaluation for Historic Bridges.
Comments:	

Section 3: Publicly Owned Park, Recreation Area, Wildlife or Waterfowl Refuge	
<input type="checkbox"/>	No Section 4(f) Involvement
<input type="checkbox"/>	Project results in a "Constructive Use" of Section 4(f) property (fill out Site Information below)
<input type="checkbox"/>	Project requires acquisition from publicly owned recreation land (fill out Site Information below):
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under de minimis Evaluation of Impacts and all applicability criteria and conditions have been met, including concurrence <i>first</i> by the FHWA that the project meets the applicability criteria, and <i>then</i> notification to the officials with jurisdiction of the intent to use a <i>de minimis</i> finding.
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under Nationwide Section 4(f) Programmatic Evaluation for minor involvement and all applicability criteria and conditions have been met, including concurrence by the officials having jurisdiction over the property.
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under the Nationwide Section 4(f) Programmatic Evaluation for Net Benefits and all applicability criteria have been met, including notification to and concurrence by the FHWA with the determination.
<input type="checkbox"/>	Section 4(f) Involvement. Nationwide Section 4(f) Programmatic applicability criteria were not met; Individual Section 4(f) Evaluation was prepared.
Site Information (for projects involving "Constructive Use" or acquisition from publicly owned recreation land, wildlife or waterfowl refuge): Name of Site (use local name): _____ Lot and Block: _____ Total acreage of site: _____ Acreage of site affected (acquisition and permanent easements): _____	
<input type="checkbox"/>	Federal encumbrances involved (e.g., Wild and Scenic Rivers Act, Land and Water Conservation Fund Act, Rivers and Harbors Act).
Comments:	

Section 4: Independent Walkway & Bikeway Construction Projects	
<input type="checkbox"/>	No Section 4(f) Involvement
<input type="checkbox"/>	Section 4(f) Involvement. Project is covered under the Nationwide Section 4(f) Programmatic Evaluation . Project requires use of recreation and park areas established and maintained primarily for active recreation, open space, or similar purposes. All applicability criteria have been met, including approval in writing by the official with jurisdiction over the property that the project is acceptable and consistent with the designated use of the property and that all possible planning to minimize harm has been accomplished in the location and design of the bikeway or walkway facility.
Comments:	

G. Hazardous Materials and Landfills	
<input type="checkbox"/>	Known or suspected contaminated site within project limits.
<input type="checkbox"/>	Underground storage tanks within project limits.
<input type="checkbox"/>	Questionable fill material within project limits.
Conclusion:	

<input type="checkbox"/>	Low potential for involvement with contamination; no further investigation required.
<input type="checkbox"/>	Low potential for involvement with contamination; verification required based upon plan review.
<input type="checkbox"/>	Further investigation and/or sampling required to determine extent of involvement with contamination. Project still meets FHWA criteria for a CE.

Comments:

H. Socioeconomics

☐ The project will **not** result in any significant socioeconomic impacts.

Comments:

I. Environmental Justice

☐ Project will have **no** disproportionately high or adverse effects on low income and/or minority communities.

☐ Project will have disproportionately high and adverse effects on low income and/or minority communities.

Conclusion:

☐ Project is in compliance with the goals of Executive Order 12898 and the requirements of the Civil Rights Act of 1964.

☐ Project is in compliance with the goals of Executive Order 12898 and the requirements of the Civil Rights Act of 1964, through the identification of measures to address disproportionate effects, including actions to avoid or mitigate them. Project satisfies CE criteria.

Comments:

J. Public Reaction (briefly describe input from the Office of Community Relations or current status of public reaction):

K. Environmental Commitments (refer to MOA stipulations or other conditions noted in Section D, if applicable; permit conditions, etc.):

DETERMINATION OF CATEGORICAL EXCLUSION

Project name and location: _____

CE #: _____

The proposed project satisfies the Categorical Exclusion definition outlined in 23 CFR 771.117 (a) and will not result in significant environmental impacts.

Prepared/Reviewed by: _____
Environmental Coordinator Date

Recommended by: _____
Environmental Supervisor Date

Project Manager, Division of Project Management Date

Certified ☐
(or)
Approved ☐

Manager, Bur of Landscape Arch Environ Solutions Date

Concurrence
(non-self certified CEs) _____
Division Administrator, Federal Highway Administration Date

enclosures (please include any correspondence referenced in the CED):

- ☐ Project Location Map
- ☐ NJ Natural Heritage Program letter
- ☐ USFWS coordination letter(s) (e.g., IPAC Species List, Effects/No Effects Determination, etc.)
- ☐ NMFS coordination letter
- ☐ SHPO Eligibility & Effects concurrence letter
- ☐ Signed MOA
- ☐ Final Nationwide Section 4(f) Programmatic Evaluation for:
 - ☐ Minor Involvement with Historic Sites
 - ☐ Use of Historic Bridges
 - ☐ Minor Involvement with Publicly Owned Park, Recreation Area, Wildlife or Waterfowl Refuge
 - ☐ Independent Walkway and Bikeway Construction Projects
 - ☐ Net Benefits
 - ☐ *De minimis* Evaluation of Impacts documentation (i.e., notice to SHPO, *de minimis* template)

- ☐ Final Individual Section 4(f)
- ☐ Resolution of Support from Municipality/County
- ☐ Other (specify): _____