## PROJECT APPROVAL SHEET
(Pursuant to SAFETEA-LU Matrix)

| A. IPP Approval: | The project is ready to be added to the Regional Capital Program and project scoping can begin.  
The IPP was approved by:  
Sam Zhou  
Regional Director  
9/16/14 |
|-----------------|------------------------------------------------------------------------------------------------|

<table>
<thead>
<tr>
<th>B. Public Hearing Certification (23 USC 128):</th>
<th>A public hearing was held on July 29, 2015 in accordance with 23 USC 128.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project Manager</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>C. Recommendation for Design Approval:</th>
<th>The project cost and schedule are consistent with the Regional Capital Program.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regional Program Manager</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Recommendation for Design Approval:</th>
<th>All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regional Design Engineer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Nonstandard Feature Approval:</th>
<th>No nonstandard features have been identified, created, or retained.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>F. Scoping &amp; Design Approval:</th>
<th>The required environmental determinations have been made and the preferred alternative for this project is ready for final design.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regional Director</td>
</tr>
</tbody>
</table>
LIST OF PREPARERS

Group Director Responsible for Production of the Design Approval Document:

James P. Bridges, P.E., Regional Design Engineer, NYSDOT Region 1

This report was prepared by the following NYSDOT staff:

David M. Robertson, P.E., Project Manager, NYSDOT Region 1

Description of Work Performed:
Directly supervised the preparation of the Final Design Report Chapters 1 through 3 in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

Note: It is a violation of law for any person, unless they are acting under the direction of a licensed professional engineer, architect, landscape architect, or land surveyor, to alter an item in any way. If an item bearing the stamp of a licensed professional is altered, the altering engineer, architect, landscape architect, or land surveyor shall stamp the document and include the notation "altered by" followed by their signature, the date of such alteration, and a specific description of the alteration.
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4.4.19 Hazardous Waste and Contaminated Materials .................................................................4-14
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4.6 Indirect and Secondary Effects .............................................................................................4-15
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### Appendices

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</tr>
<tr>
<td>K.</td>
<td>Project Photos</td>
</tr>
</tbody>
</table>
CHAPTER 1 - EXECUTIVE SUMMARY

1.1. Introduction

This report documents the social, economic, environmental and engineering considerations for addressing the safety deficiencies along the NYS Route 146 corridor in the Town of Rotterdam, Schenectady County.

This report was prepared in accordance with the NYSDOT Project Development Manual, 17 NYCRR (New York Codes, Rules and Regulations) Part 15, and 23 CFR (Code of Federal Regulations) 771.

Transportation needs have been identified (section 1.2.2), objectives established (1.2.3) to address the needs, and cost-effective alternatives developed (1.3).

This project is 80% federally funded and 20% state funded.

1.2. Purpose and Need

1.2.1. Where is the Project Located?

The general project location is shown in Exhibit 1.2-A on Page 1-2 and the project limits are shown in Exhibit 1.2-B on Page 1-2.

(1) Route number – NYS Route 146

(2) Route name – Hamburg Street

(3) State Highway (SH) Number and official description - SH 0577; Schenectady - Guilderland

(4) Bridge Identification Number (BIN) number and feature crossed – BIN 1038330 over Chrisler Avenue

(5) City/Village/Township – Town of Rotterdam

(6) County – Schenectady County

(7) Length – 1.7 miles. See Exhibit 1.2-B on Page 1-2 for project limit overview.

(8) From Reference Marker (RM) 146-1603-1004 (Curry Road Roundabout) To RM 146-1603-1021 (City of Schenectady Line, near Glengary Road.)
Exhibit 1.2-A – Project Location

NYS Route 146 Safety Improvement Project
PIN 1085.33
Schenectady County
Town of Rotterdam
Exhibit 1.2-B – Project Limits

1.2.2. Why is the Project Needed?

This project was initiated from a highway safety investigation for the section of NYS Route 146 from RM 146-1603-1008 to RM 146-1603-1016. This particular section of NYS Route 146 has been a persistent High Accident Location (HAL), appearing on every high accident location list since 1992 with the exception of 2005. The most recent investigation yielded a high accident rate, more than that of similar facilities statewide. During the 45 month accident study period between January 1, 2007 and November 30, 2010, there were 65 total accidents. The accident rate is 5.06 Accidents per Million Vehicle Miles traveled (ACC/MVM) from RM 146-1603-1008 to RM 146-1603-1016. This is higher than the statewide
average of 3.94 ACC/MVM for two lane undivided Urban Principal Arterial highways with free access. The predominant accident types were rear end and turning movement accidents. This is based on a high percentage of turning vehicles entering and exiting the free flow of NYS Route 146.

The accident study resulted in a recommendation to construct a paved flush median to provide refuge for turning vehicles. This project is intended to construct that flush median and to address safety, congestion, access management and sidewalk deficiencies within the project limits.

1.2.3. What are the Objectives/Purposes of the Project?

The primary objectives of this project are as follows:

1. Provide safety and operational improvements along the NYS Route 146 corridor.
2. Provide bicycle and ADA compliant pedestrian accommodations within the project limits.
3. Extend the pavement service life and maintain rideability of the highway

1.3. What Alternative(s) Are Being Considered?

**Alternative #1 – Null Alternative**

The null alternative provides only for the continued maintenance of existing features and no safety or operational improvements to the roadway or intersection approaches. The safety and operational efficiency of the project area will continue to deteriorate. This alternative does not meet project objectives, but will be carried forward for comparison purposes to the feasible build alternative.

**Alternative #2 – 12 Foot Travel Lanes with 5 Foot Shoulders**

This alternative was considered, but eliminated as part of the project scoping phase. Refer to Section 3.1 of this report for more detailed information regarding this alternative.

**Alternative #3 – 14 Foot Shared Use Travel Lanes**

Included in this alternative is access management of driveways and the addition of a two-way left turn lane (TWLTL) from Stoodley Place (RM 146-1603-1008) to Cardiff Road (RM 146-1603-1016). These safety improvements would help address the high accident rate associated with this section of NYS Route 146.

In addition, this alternative includes a mill and fill of the asphalt pavement (of varying depth) throughout the project limits. A full depth box-out widening pavement treatment of the shoulders will occur in various spots as needed.

This alternative would also include the installation of concrete sidewalks along both sides of NYS Route 146 from the Curry Road roundabout to Second Street (right side) and Caldicott Road (left side). The proposed sidewalks will connect with the existing sidewalks located at the roundabout. Approximately 200 right-of-way acquisitions (combined permanent acquisitions (FEs), temporary easements (TEs), and permanent easements (PEs)) would be required for the purposes of widening the roadway, constructing new sidewalks and addressing access management concerns. Additional drainage facilities will need to be installed throughout the project wherever new curbing and sidewalk will be installed. Also, due to the conflict with the new proposed roadway and/or sidewalk, the majority of the utility poles throughout the project will have to be relocated. There are two existing traffic signals as well as pedestrian facilities (crosswalks, ped buttons) that will be fully upgraded and/or installed. North of the bridge, work on the existing sidewalks would be limited to bringing sidewalk ramps into conformance with ADA requirements.

This alternative would meet all of the project objectives.
For a more in-depth discussion of the design criteria and nonstandard features see Section 3.2.3 - Design Criteria for Feasible Alternative.

1.4 How will the Alternative(s) Affect the Environment?

<table>
<thead>
<tr>
<th>Category</th>
<th>Alternative</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland impacts</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>100 year floodplain impact</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Archeological Sites Impacted</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Noise</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Impact to forested areas</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Noise Impacts</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Utility Relocation Required</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Property impacts</td>
<td>None</td>
<td>111 TE Acquisitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>87 FEE Acquisitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 PE Acquisition</td>
</tr>
<tr>
<td>Operation at ETC + 20</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>20 year Crash Costs</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Construction Cost</td>
<td>None</td>
<td>$7.40 M*</td>
</tr>
</tbody>
</table>

*Construction costs do not reflect the societal costs associated with utility relocation costs incurred by others. See section 3.3.3.9. Utilities for more information.

Anticipated Permits/Certifications/Coordination:

Permits
- New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit

Coordination
- New York Natural Heritage Program
- Federal Highway Administration (FHWA)
1.5. What Are The Costs & Schedule?

Design Approval is scheduled for August of 2015 with construction scheduled to last 20 months beginning in April of 2017.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Occurred/Tentative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scoping Approval</td>
<td>August 2015</td>
</tr>
<tr>
<td>Design Approval</td>
<td>August 2015</td>
</tr>
<tr>
<td>ROW Acquisition Complete</td>
<td>November 2016</td>
</tr>
<tr>
<td>Construction Start</td>
<td>April 2017</td>
</tr>
<tr>
<td>Construction Complete</td>
<td>December 2018</td>
</tr>
</tbody>
</table>

Exhibit 1.5-B Comparison of Alternatives' Total Project Cost (Millions)

<table>
<thead>
<tr>
<th>Total Cost</th>
<th>Alternate 1 (Null)</th>
<th>Alternate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td></td>
<td>$9.34*</td>
</tr>
</tbody>
</table>

*For more detail on costs for Alternative 3 refer to Section 3.2.1.

1.6. Which Alternative is Preferred?

The alternative that best meets the project objectives is Alternative 3. See Section 3.2.2 for a detailed discussion and comparison of all the alternatives.

1.7. What are the Opportunities for Public Involvement?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Occurred/Tentative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting with Town Reps.</td>
<td>September 2014</td>
</tr>
<tr>
<td>In-house DOT scoping meeting</td>
<td>December 2014</td>
</tr>
<tr>
<td>Stakeholder Meeting(s)</td>
<td>March 2015</td>
</tr>
<tr>
<td></td>
<td>April 2015</td>
</tr>
<tr>
<td>Public Informational Meeting/Hearing</td>
<td>July 2015</td>
</tr>
</tbody>
</table>

Refer to Appendix E for the Public Involvement (PI) Plan and other related information.
Comments were accepted in variety of ways prior to Design Approval. A Public Meeting and Hearing was held on July 29, 2015 where local residents spoke with Department representatives, made formal statements for the public record, and left written comments or forwarded comment forms prior to the comment deadline.

In the future, comments and questions should be directed to:

David Robertson, Project Manager
Email: Dave.Robertson@dot.ny.gov
Telephone: (518) 457-8909

Mailing Address:
New York State Department of Transportation
Region 1 Design, POD 2-3
50 Wolf Road
Albany, New York 12232

Please include the six digit Project Identification Number (PIN) 1085.33

The remainder of this report is a detailed technical evaluation of the existing conditions, the proposed alternatives, the impacts of the alternatives, copies of technical reports and plans and other supporting information.
CHAPTER 2 - PROJECT CONTEXT: HISTORY, TRANSPORTATION PLANS, CONDITIONS AND NEEDS

This chapter addresses the history and existing context of the project site, including the existing conditions, deficiencies, and needs within this section of the NYS Route 146 corridor.

2.1. Project History

This project was initiated as a result of this section of NYS Route 146 having a persistent accident problem. It has appeared on every High Accident Location (HAL) list since the first list was generated in 1993 through the most current list that was generated in 2013. This location was investigated as part of the 1996 Regional Highway Safety Improvement Work Program. The study (completed January 24, 1997) resulted in a recommendation for initiation of a Safety Capital Project for reconstruction of NYS Route 146 with a flush paved median. The recommendation was based on the high accident types (rear end, left turn and sideswipe) that could be mitigated by providing the median for turning vehicles. The calculated accident reduction factor of 24% justified a $2.7M construction cost and the average accident reduction factor of 44% justified a $5.0M construction cost. PIN 1085.33 was created on August 21, 2000, however the project never progressed due to lack of funding. On May 17, 2010, a local project (PIN 1759.18) was established in order to reconstruct NYS Route 146 from RM 1009 to RM 1015 and construct sidewalks from RM 1004 to RM 1017. The project never received funding and therefore never progressed.

NYS Route 146 was placed on the 2011 Regional Highway Safety Improvement Work Program for further evaluation. The study (completed August 20, 2012) showed that the types and frequency of accidents had remained the same as the previous study. The recommendation was made to combine the scope of the two projects under PIN 1085.33, expanding the project limits in order to do so.

On June 10, 2014, Governor Andrew Cuomo announced $75.6 M in federal Highway Safety Improvement Program funding for 33 projects throughout the state. NYSDOT R-1 allocated $5.0 M of this fund to reconstruct NYS Route 146 and install a paved median/two-way left turn lane as a refuge for turning vehicles. NYSDOT R-1 also allocated an additional $2.5 M in federal funding in order to make pedestrian and bicycle accommodation improvements as well as operational and safety improvements at the signalized intersection of Hamburg Street and East Campbell Road.

In August, 2014, an Initial Project Proposal (IPP) was created under PIN 1085.33 to improve the safety and provide operational improvements within this portion of NYS Route 146. The IPP was approved in September 2014. A scoping meeting was held in December 2014.

2.2. Transportation Plans and Land Use

2.2.1. Local Plans for the Project Area

2.2.1.1. Local Comprehensive Plans (“Master Plan”)

The Regional Planning Group has reviewed the local comprehensive plan prepared for the Town of Rotterdam. This project is consistent with the local comprehensive plan (Refer to Section 4.2.1.2).

2.2.1.2. Local Private Development Plans

There are no approved developments planned within the project area that would affect traffic operations.
2.2.2. Transportation Corridor

2.2.2.1. Importance of the Project Route Segment

This section of NYS Route 146 is a busy thoroughfare that provides access to the NYS Thruway for residents of the Town of Rotterdam. There are a large number of businesses and residencies located along this section of NYS Route 146.

2.2.2.2. Alternate Routes

There are no alternative routes that would be suitable as a detour.

2.2.2.3. Corridor Deficiencies and Needs

The accident rate is 5.06 accidents per million vehicle miles traveled (ACC/MVM) from RM 146-1603-1008 to RM 146-1603-1016. This is higher than the statewide average of 3.94 ACC/MVM for two lane undivided urban principal arterial highways with free access. The predominant accident types were rear end and turning movement accidents. NYS Route 146 was a high accident location (HAL) from RM 146-1603-1008 to RM 146-1603-1016.

Drainage of the pavement surface within the project limits is poor in many areas. There are existing drainage structures that need to be replaced, relocated, or cleaned. Many driveways do not conform to NYSDOT requirements and in some instances existing parking spaces encroach into the State right-of-way. Sidewalks within the project limits are sporadic, and those that do exist are in generally poor condition. Curbing within the project limits is also sporadic and deteriorated.

2.2.2.4. Transportation Plans

This project is on the Capital District Transportation Committee’s (CDTC) Transportation Improvement Program (TIP) as project No. S192.

2.2.2.5. Abutting Highway Segments and Future Plans for Abutting Highway Segments

The Regional Planning Group has confirmed that there are no plans to reconstruct or widen abutting highway segments, within the next 20 years.

2.3. Transportation Conditions, Deficiencies and Engineering Considerations

2.3.1. Operations (Traffic and Safety) & Maintenance

2.3.1.1. Functional Classification and National Highway System (NHS)

<table>
<thead>
<tr>
<th>Exhibit 2.3.1.1 Classification Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route(s)</td>
</tr>
<tr>
<td>Functional Classification</td>
</tr>
<tr>
<td>National Highway System (NHS)</td>
</tr>
<tr>
<td>Designated Truck Access Route</td>
</tr>
<tr>
<td>Qualifying Highway</td>
</tr>
<tr>
<td>Within 1 mile of a Qualifying Highway</td>
</tr>
<tr>
<td>Within the 16 foot vertical clearance network</td>
</tr>
</tbody>
</table>
2.3.1.2. Control of Access

There is no control of access within the project limits.

2.3.1.3. Traffic Control Devices

There is a traffic signal at the intersection of NYS Route 146 with East Campbell Road. There is an emergency signal located in front of the Carmen Volunteer Fire Department. All other side street intersections throughout the project limits are stop-controlled. There are pavement markings and highway signs located throughout the project limits which are in need of replacement.

2.3.1.4. Intelligent Transportation Systems (ITS)

There are no ITS systems in operation or planned for the project area.

2.3.1.5. Speeds and Delay

| Exhibit 2.3.1.5  
Speed Data |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Route</td>
<td>NYS Route 146</td>
</tr>
<tr>
<td>Existing Speed Limit</td>
<td>35 mph*</td>
</tr>
<tr>
<td>Operating Speed and Method Used for Measurement</td>
<td>40 mph/85th % Speed (Speed Study)</td>
</tr>
</tbody>
</table>

*There is a 25 mph school zone located 175 feet south of Stoodley Place to 50 feet north of William Street; a total of approximately 1,500 feet. The school zone speed limit operates Monday – Friday; 7:00 AM to 6:00 PM.

2.3.1.6. Traffic Volumes

Refer to Appendix C of this report for traffic flow diagrams. The traffic data was obtained in the year 2014.

2.3.1.6. (1) Existing traffic volumes

Refer to Exhibits 2.3.1.6-1 and 2.3.1.6-2 for a summary of the traffic data. A discussion of the traffic count methodology, peak hour, and turning movement volumes for all major intersections are included in Appendix C.

| Exhibit 2.3.1.6-1  
Traffic Data |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Route</td>
<td>NYS Route 146</td>
</tr>
<tr>
<td>Directional Distribution</td>
<td>48/52 EB/WB AM, 50/50 EB/WB PM</td>
</tr>
<tr>
<td>Peak Hour Factor</td>
<td>0.90</td>
</tr>
<tr>
<td>% Peak Hour Trucks</td>
<td>Not Available¹</td>
</tr>
<tr>
<td>% Daily Trucks</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

¹The percentage of heavy vehicles in the peak hour was determined not to be critical to the scope of the project.
Exhibit 2.3.1.6-2
Existing and Forecast Traffic Volumes

<table>
<thead>
<tr>
<th>Route</th>
<th>Year</th>
<th>AADT</th>
<th>DHV</th>
<th>DDHV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYS Route 146</td>
<td>Existing (2013)</td>
<td>9,209</td>
<td>775</td>
<td>388</td>
</tr>
<tr>
<td></td>
<td>ETC* (2018)</td>
<td>9,283</td>
<td>781</td>
<td>391</td>
</tr>
<tr>
<td></td>
<td>ETC*+10 (2028)</td>
<td>9,433</td>
<td>794</td>
<td>397</td>
</tr>
</tbody>
</table>

*ETC is the Estimated Time of Completion

2.3.1.6. (2) Future no-build design year traffic volume forecasts

The Estimated Time of Completion (ETC)+10 design year was selected per PDM Appendix 5. Peak hour turning movement volumes for all major intersections are included for the design year(s) in Appendix C.

2.3.1.7. Level of Service and Mobility

2.3.1.7. (1) Existing level of service and capacity analysis

Exhibit 2.3.1.7-2
Intersection Level of Service and Delays (sec)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Turn Movement*</th>
<th>Existing (2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM Peak (X (Y.Y))</td>
</tr>
<tr>
<td>NYS Route 146/E Campbell Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYS Route 146 NB</td>
<td>LTR</td>
<td>A (3.9)</td>
</tr>
<tr>
<td>NYS Route 146 SB</td>
<td>LTR</td>
<td>A (7.5)</td>
</tr>
<tr>
<td>East Campbell Road WB</td>
<td>LTR</td>
<td>B (12.2)</td>
</tr>
<tr>
<td>Schenectady Communications Center EB</td>
<td>LTR</td>
<td>A (0.0)</td>
</tr>
</tbody>
</table>

*LTR = Left, Through, Right Turns

2.3.1.8. Safety Considerations, Accident History and Analysis

An accident study was performed in accordance with Highway Design Manual Chapter 5 for the 46 month period from 2007 to 2010. The accident rate for this segment of NYS Route 146 was 5.06 accidents per million vehicle miles (ACC/MVM). This is above the statewide accident rate for similar facilities, which is 3.94 accidents per million vehicle miles (ACC/MVM).

The 0.9 mile section of NYS Route 146 from 146-1603-1008 to 146-1603-1016 is a high accident location (HAL) within the study area.
The predominate accident types are:

<table>
<thead>
<tr>
<th>Type of Collision</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear End</td>
<td>28</td>
<td>43%</td>
</tr>
<tr>
<td>Turning Movement</td>
<td>27</td>
<td>42%</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>15%</td>
</tr>
</tbody>
</table>

An accident analysis including an accident summary, collision diagrams, and recommendations for improvements is included in Appendix C. The analysis recommends the construction of a flush paved median/two-way left turn lane (TWLTL) from 146-1603-1008 to 146-1603-1016.

2.3.1.9. Existing Police, Fire Protection and Ambulance Access

The Carmen Fire Department (Rotterdam Fire District #3) is located on Route NYS Route 146 within the project limits. Although there are no police or ambulance facilities located within the project limits, Rotterdam Emergency Management Services (EMS) and Rotterdam Police Department frequently travel through the project area.

2.3.1.10. Parking Regulations and Parking Related Conditions

Near the Curry Road roundabout there are ‘No Parking’ signs. Throughout the rest of the project limits there are no areas regulated by parking signs.

2.3.1.11. Lighting

There is street lighting throughout the project limits. The lighting consists of utility company fixtures on wooden utility poles with high pressure sodium luminaires. These are owned and maintained by National Grid for the Town of Rotterdam.

2.3.1.12. Ownership and Maintenance Jurisdiction
2.3.2. Multimodal

2.3.2.1. Pedestrians

There are limited provisions for pedestrians on Hamburg Street. Intermittent segments of non-compliant ADA sidewalk and asphalt paths exist throughout the project limits along both sides of the road. The widths of these sidewalks vary from 3 feet to 4 feet. There is a mid-block crossing located approximately 620 feet north of the Route 7 roundabout. The primary purpose of this crossing is to provide a pedestrian connection to the church on the west side of Hamburg Street. There are two crosswalks at the intersections of Arlene Street and East Campbell Road. The subject intersections do not include pedestrian signals or ADA compliant curb ramps.

Hamburg Street is a segment of the Capital District Transportation Committee’s (CDTC) Bike/Pedestrian Priority Network. The Town of Rotterdam recently applied for projects along this corridor to increase the safety of the pedestrians going to the Bradt Elementary School and a project to improve air quality along the corridor. Even though neither of the projects were approved, The Town of Rotterdam remains committed to improvements on Hamburg Street. Pedestrian will need to be maintained through or around the project for the duration of construction.

Improving the sidewalks will encourage walking. This will reduce provide an alternative to driving for local trips and also improve pedestrian safety and quality of life.

A pedestrian generator checklist is included in Appendix C.

2.3.2.2. Bicyclists

Hamburg Street is a segment of the CDTC Bike/Pedestrian Priority Network and is part of State Bike Route 5. This is a signed on-road bike route. There are no separate provisions for bicyclists along the highway corridor. Bicyclists are currently utilizing the paved shoulders on each side of the roadway. Bicycle traffic will need to be maintained through and around the project for the duration of construction. Improving bicycle accommodations will encourage biking.

2.3.2.3. Transit

There are currently no transit providers operating within the project limits. Capital District Transportation Authority (CDTA) used to operate within this part of NYS Route 146 but discontinued operation in 2010. Existing signage for the bus route still exists but will be removed as part of this project. There are no plans to re-establish a bus route within the project limits.

2.3.2.4. Airports, Railroad Stations, and Ports

There are no airports, railroad stations or port entrances within or in the vicinity of the project limits.

2.3.2.5. Access to Recreation Areas (Parks, Trails, Waterways, State Lands)

There is an entrance to Carmen Park off of Fourth Street located one block east, directly behind the Carmen Fire Department.

2.3.3. Infrastructure
2.3.3.1. Existing Highway Section

The existing section of NYS Route 146 consists of 11 foot travel lanes with 4 foot shoulders. See Typical Section drawings in Appendix A.

2.3.3.2. Geometric Design Elements Not Meeting Minimum Standards

There are no existing nonstandard features when compared with the 3R design standards outlined in Chapter 7 of the NYS Highway Design Manual.

2.3.3.2.(1) Other Design Parameters

The Highway Design Manual recommends a minimum sidewalk width of 5 feet. There are some locations within the project limits where the sidewalk is less than or greater than 5 feet wide.

2.3.3.3. Pavement and Shoulder

According to the 2013 pavement data report, the pavement condition rating is a 6 (surface distress is clearly visible). Core samples taken in 2014 showed existing asphalt thicknesses range from 7 inches to 9 inches. A recommendation from the Regional Materials Group and the pavement core report is included in Appendix D.

2.3.3.4. Drainage Systems

The existing Town drainage system runs throughout the Town of Rotterdam, crossing underneath NYS Route 146 and eventually outletting into the Mohawk River. Within the project limits there are occasional leaching basins, some which seem to be functioning well and others that seem completely plugged with debris and not functioning at all.

2.3.3.5. Geotechnical

There is a privately owned 2 foot tall concrete block retaining wall encroaching within the State ROW in front of a home on the eastbound side of the road at 2783 Hamburg Street. There are no special geotechnical concerns with the soils or rock slopes within the project area.

2.3.3.6. Structure

2.3.3.6. (1) Description

(a) BIN – 1-03833-0
(b) Feature carried and crossed – NYS Route 146 (Carried), Chrisler Avenue/Railroad (Crossed)
(c) Type of bridge, number and length of spans – Prestressed concrete bridge with 3 spans (64 feet long)
(d) Width of travel lanes, parking lanes, and shoulders – 11 foot travel lanes, 4 foot shoulders. There are no parking lanes.
(e) Sidewalks – There are 5 foot sidewalks on both sides of the bridge.
(f) Utilities carried – There are no utilities carried.

2.3.3.6.(2) Clearances (Horizontal/Vertical)

Horizontal – 30 feet
Vertical – 22 feet, 1 inch

2.3.3.6.(3) History & Deficiencies
The bridge was constructed in 1993 under contract D254120. The bridge superstructure was cleaned in 1998 under contract D257275. The wearing surface is rated a 3 out of 7 and the bridge deck is in need of minor repair.

2.3.3.6.(4) Inspection
The following ratings are based on the 2013 Bridge Inspection Report:
  (a) Federal Sufficiency Rating – 62.9
  (b) State Condition Rating – 5.473

2.3.3.6.(5) Restrictions
There are no restrictions on this bridge.

2.3.3.6.(6) Future Conditions
The bridge will be resurfaced and repaired to improve rideability and provide a service life comparable to the project.

2.3.3.6.(7) Waterway
A Coast Guard Checklist is not required.

2.3.3.7. Hydraulics of Bridges and Culverts
There is a bridge within the project limits but no waterways are crossed.

2.3.3.8. Guide Railing, Median Barriers and Impact Attenuators
There is no guide railing present within the project limits.

2.3.3.9. Utilities

<table>
<thead>
<tr>
<th>Owner</th>
<th>Type</th>
<th>Location/Side</th>
<th>Length</th>
<th>Condition/Conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Grid</td>
<td>Gas Main</td>
<td>Underground EB Side</td>
<td></td>
<td>Partially deteriorated. May conflict with proposed drainage</td>
</tr>
<tr>
<td></td>
<td>OH Power Line</td>
<td>Above Ground EB/WB Sides</td>
<td>1.3 mile</td>
<td>Conflicts with proposed design</td>
</tr>
<tr>
<td>Verizon</td>
<td>Telephone</td>
<td>Above Ground EB/WB Sides</td>
<td></td>
<td>Conflicts with proposed design</td>
</tr>
<tr>
<td>Time Warner</td>
<td>Cable</td>
<td>Above Ground EB/WB Sides</td>
<td></td>
<td>Conflicts with proposed design</td>
</tr>
<tr>
<td>Town of Rotterdam</td>
<td>Water Line</td>
<td>Underground EB Side</td>
<td></td>
<td>May conflict with proposed drainage</td>
</tr>
</tbody>
</table>

2.3.3.10. Railroad Facilities
NYS Route 146 crosses over Chrisler Avenue as well as the CSX Trans/Amtrak railroad near the northern end of the project.
2.3.4. Potential Enhancement Opportunities

This section focuses on the existing areas to identify potential enhancement opportunities related to the project and to help avoid and minimize impacts. Chapter 4 focuses on the impacts, enhancements, and mitigation.

2.3.4.1. Landscape

2.3.4.1. (1) Terrain

The terrain within the project area is classified as ‘level’ (with the grade separated crossing over Chrisler Avenue and CSXT Railroad not withstanding).

2.3.4.1. (2) Unusual Weather Conditions

There are no unusual weather conditions within the project area.

2.3.4.1. (3) Visual Resources

The visual environment within the project area consists of a mix of residential and commercial properties.

2.3.4.2. Opportunities for Environmental Enhancements

Opportunities for environmental enhancements include improving the aesthetics of the streetscape and improving bicycle/pedestrian accommodations. See Sections 3.3.4.2 and 4.4.13.
CHAPTER 3 – ALTERNATIVES

This chapter discusses the alternatives considered and examines the engineering aspects of all feasible alternatives for addressing the project objectives listed in Chapter 1 of this report.

3.1. Alternatives Considered and Eliminated from Further Study

Alternative #1 – Null Alternative

The null alternative only provides for the continued maintenance of existing features and includes no safety or operational improvements. The safety and operational efficiency of the project area would continue to deteriorate. This alternative does not meet the project objectives.

Alternative #2 – 12 Foot Travel Lanes with 5 Foot Shoulders

This alternative included the addition of a two-way left turn lane (TWLTL) on NYS Route 146 from RM 146-1603-1008 to 146-1603-1016 with two 11 foot lanes and 5 foot wide shoulders. The 5 foot wide shoulders were investigated based on their preference for accommodating bicycle traffic on this designated state bicycle route. This alternative was eliminated from further study during the project scoping process due to additional impacts to adjacent businesses and residencies, additional environmental effects (such as on stormwater drainage), and the approximate additional $0.5M cost.

3.2. Feasible Build Alternatives

3.2.1. Description of Feasible Alternatives

Alternative #3 – 14 Foot Shared Use Travel Lanes

Included in this alternative is the addition of a two-way left turn lane (TWLTL) on NYS Route 146 from RM 146-1603-1008 to 146-1603-1016. Currently there are two 11 foot wide lanes with 4 foot wide shoulders. This alternative would include the removal of all shoulders and the installation of 14 foot wide shared use travel lanes for vehicles and bicyclists. At the East Campbell Road intersection the turning lane would be carried through to create a left turn lane at the intersection for northbound and southbound traffic. These changes would reduce congestion and decrease accident potential. To further help reduce accident potential, access management strategies including bringing driveways into conformance with NYSDOT’s “Policy and Standards for the Design of Entrances to State Highways” would be employed. Channelizing driveways through the addition or extension of sidewalks and curb will help to improve pedestrian safety throughout the project limits.

This alternative would also include the replacement and/or installation of sidewalks along both sides of NYS Route 146 from the Curry Road roundabout to Second Street (right side) and Caldicott Road (left side). The proposed sidewalks would connect with the existing sidewalks located at the roundabout at the southern project limit as well as any sidewalks that may exist on the side streets throughout the project. There would need to be approximately 200 right-of-way acquisitions (combined permanent acquisitions (FEEs), temporary easements (TEs), and permanent easements (PEs)) for the purposes of widening the roadway, constructing new sidewalks and addressing access management. Additional drainage would need to be installed wherever curbing and sidewalk is installed in new locations. There are currently leaching basins as well as drainage structures connected to the town’s drainage system. The proposed drainage into the Town’s system from the project site will not exceed the existing inflow. Infiltration chambers will be used as needed. Also, due to the conflict with the new proposed roadway and/or sidewalk, the majority of the utility poles throughout the project would have to be relocated. There are two existing traffic signals as well as pedestrian facilities (crosswalks, ped buttons) that would be fully upgraded and/or installed.
In addition, this alternative includes a mill and fill of the pavement (of varying depths) throughout the project limits. Due to the deteriorated nature of the existing shoulders as well as the proposed widening of the roadway, any pavement to be constructed outside of the existing traveled way would be full-depth.

North of the bridge over Chrisler Avenue and CSXT Railroad, work would be limited to milling and resurfacing the pavement and bringing sidewalk ramps into conformance with ADA requirements.

This alternative would meet all of the project objectives.

Geometry
- This alternative includes eliminating the existing 4 foot wide shoulder on both sides of NYS Route 146 while creating two 14 foot wide shared use travel lanes south of the Chrisler Avenue / CSXT Railroad bridge.
- Installation of an 11 foot wide two-way left turn lane (TWLTL) from RM 146-1603-1008 to RM 146-1603-1016.
- Continuous sidewalk and curb would be installed south of the Chrisler Avenue / CSXT Railroad bridge.

Operational
- Operational and safety improvements would be achieved by the addition of the two-way left turn lane.

Control of Access
- NYS Route 146 is not a controlled access highway.

Right of Way
- Mainline improvements would require approximately 200 acquisitions from approximately 100 properties (Combined FEE, TE and PE).

Environmental
- No significant environmental effects.

Cost
- Total estimated construction cost of this alternative is $7.40 M.

Project Goals
- These improvements meet all of the project objectives.

<table>
<thead>
<tr>
<th>Exhibit 3.2.1 Summary of Alternative Costs – Million Dollars (Calculated Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities</strong></td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Bridge</td>
</tr>
<tr>
<td>Highway</td>
</tr>
<tr>
<td>Wetland Mitigation</td>
</tr>
<tr>
<td>Storm Pollution Discharge Elimination System (SPDES)</td>
</tr>
<tr>
<td>Subtotal (2015)</td>
</tr>
<tr>
<td>Incidental/Contingencies(^2) (20% @ Design/Scoping Approval)</td>
</tr>
<tr>
<td>Subtotal (2015)</td>
</tr>
<tr>
<td>Potential Field Change Payment</td>
</tr>
<tr>
<td>Subtotal (2015)</td>
</tr>
<tr>
<td>Mobilization (4%)</td>
</tr>
<tr>
<td>Subtotal (2015)</td>
</tr>
</tbody>
</table>
3.2.2. Preferred Alternative

Alternative #3 is the preferred alternative, as it is the only feasible alternative and it satisfies all project objectives.

3.2.3. Design Criteria for Feasible Alternative(s)

3.2.3.1. Design Standards

The design standards for this project are based on Chapter(s) 2 & 7 of the NYSDOT Highway Design Manual (HDM), 2009 edition as amended.

3.2.3.2. Critical Design Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Standard</th>
<th>HDM Reference</th>
<th>Existing Condition</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design Speed</td>
<td>40 mph (Minimum) 60 mph (Maximum)</td>
<td>2.7.2.2 A</td>
<td>40 mph</td>
<td>40 mph</td>
</tr>
<tr>
<td>2 Lane Width</td>
<td>12 ft (Minimum, Bicycles W/ Curb) 14 ft (Desirable, Bicycles W/ Curb)</td>
<td>2.7.2.2 B</td>
<td>11 ft</td>
<td>14 ft</td>
</tr>
<tr>
<td>Turning Lane</td>
<td>11 ft (Minimum)</td>
<td>N/A</td>
<td>11 ft</td>
<td></td>
</tr>
<tr>
<td>3 Shoulder Width</td>
<td>0 ft (Minimum) 5 ft (Maximum)</td>
<td>7.5.2.2 C</td>
<td>4 ft</td>
<td>0 ft</td>
</tr>
<tr>
<td>4 Bridge Roadway Width</td>
<td>30 ft (Minimum)</td>
<td>BM Section 2.3 2.7.2.2 D</td>
<td>30 ft</td>
<td>30 ft</td>
</tr>
<tr>
<td>5 Maximum Grade</td>
<td>No minimum or maximum</td>
<td>7.5.2.2 E</td>
<td>1.58%</td>
<td>1.58%</td>
</tr>
<tr>
<td>6 Horizontal Curvature</td>
<td>154 ft @ e=4.0% (Minimum)</td>
<td>7.5.2.2 F</td>
<td>1,000 ft</td>
<td>1,000 ft</td>
</tr>
<tr>
<td>7 Superelevation</td>
<td>4% (Maximum)</td>
<td>7.5.2.2 G</td>
<td>3.6%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
### Exhibit 3.2.3.2
Critical Design Elements for Route NYS Route 146
(Curry Avenue Roundabout to the bridge over Chrisler Ave. / CSXT Railroad)

<table>
<thead>
<tr>
<th>No.</th>
<th>Element</th>
<th>Standard Criteria</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Stopping Sight Distance</td>
<td>Horizontal: 305 ft (Minimum) Vertical: No Minimum</td>
<td>7.5.2.2 H H: 395 ft V: 279 ft</td>
</tr>
<tr>
<td>9</td>
<td>Horizontal Clearance</td>
<td>Shoulder width or 1.5 ft (Roadway) Shoulder width or 3 ft (Intersections)</td>
<td>7.5.2.2 I 1.5 ft 1.5 ft</td>
</tr>
<tr>
<td>10</td>
<td>Vertical Clearance</td>
<td>14 ft (Minimum) 14’-6” (Desirable)</td>
<td>BM Section 2.4 22’-1” 22’-1”</td>
</tr>
<tr>
<td>11</td>
<td>Travel Lane Cross Slope Shoulder Cross Slope</td>
<td>1.5% (Minimum) 3.0% (Maximum) 2.0% (Minimum) 8.0% (Maximum)</td>
<td>7.5.2.2 K 2.0% 2.0% 6.0% N/A</td>
</tr>
<tr>
<td>12</td>
<td>Rollover Between Lanes: Edge of Travel:</td>
<td>4.0% (Maximum) 8.0% (Maximum)</td>
<td>7.5.2.2 L 4.0% 0.0%</td>
</tr>
<tr>
<td>13</td>
<td>Pedestrian Accommodation</td>
<td>In accordance with Chapter 18 of HDM</td>
<td>In accordance with Chapter 18 of HDM In accordance with Chapter 18 of HDM</td>
</tr>
</tbody>
</table>

1. The Regional Traffic Engineer has concurred with the selected design speed.
2. Wide travel lanes may be used in low-speed segments.

From the northern bridge approach to the end of the project the asphalt pavement would be milled and filled between the existing curbs and sidewalk ramps brought into conformance with ADA requirements. Design criteria is not established for this 1R treatment and all existing geometric features would be retained.

#### 3.2.3.3. Other Design Parameters

| Exhibit 3.2.3.3a
Other Design Parameters |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

| Exhibit 3.2.3.3b
Other Design Parameter: Design Vehicle |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
</tr>
</tbody>
</table>
3.3. Engineering Considerations

3.3.1. Operations (Traffic and Safety) & Maintenance

3.3.1.1. Functional Classification and National Highway System

This project will not change the functional classification of the highway.

3.3.1.2. Control of Access

All adjoining properties will remain with access to NYS Route 146.

3.3.1.3. Traffic Control Devices

3.3.1.3. (1) Traffic Signals

The traffic signal at the East Campbell Road intersection would need to be upgraded in order to accommodate the proposed northbound and southbound left turn lanes. Pedestrian signals would be updated/installed at the East Campbell Road intersection. The existing emergency signal at the Rotterdam Fire House would be replaced and upgraded to control traffic on NYS Route 146 as well as Careleon Street.

To govern the speed limit throughout the signed school zone on NYS Route 146, the installation of school warning signs with flashing beacons would be considered in consultation with the local school district.

3.3.1.3. (2) Signs

Existing signs would be removed and re-installed to meet current Departmental standards. New signs would be added in relation to the shared use travel lane and the two-way left turn lane.

3.3.1.4. Intelligent Transportation Systems (ITS)

No ITS measures are proposed.

3.3.1.5. Speeds and Delay

3.3.1.5. (1) Proposed Speed Limit

The existing posted speed limits of 35 mph (throughout the project) and 25 mph (school zone) would be retained upon completion of the project. Travel time estimates are not included as the feasible alternative would not result in any change the capacity. See Section 2.3.1.5 for existing speed data.

3.3.1.6. Traffic Volumes

<table>
<thead>
<tr>
<th>Residential Driveways</th>
<th>P</th>
<th>Passenger Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Driveways with no deliveries</td>
<td>S-Bus 12</td>
<td>Large School Bus</td>
</tr>
<tr>
<td>Side Streets</td>
<td>SU</td>
<td>Single Unit Truck</td>
</tr>
<tr>
<td>Minor Commercial Driveways with deliveries</td>
<td>WB-15</td>
<td>Intermediate Semi Tractor Trailer</td>
</tr>
<tr>
<td>NYS Route 146 Eastbound and Westbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Campbell Road Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Commercial Driveways</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See Exhibit 3.3.1.7-2 for proposed Level of Service data.*
Refer to Appendix C for traffic flow diagrams. Refer to Exhibits 2.3.1.6-1 for a summary of the traffic data. Peak hour turning movement volumes for the East Campbell Road intersection are included in Appendix C.

<table>
<thead>
<tr>
<th>Route</th>
<th>Existing and Forecast Traffic Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>AADT</td>
</tr>
<tr>
<td>Existing (2013)</td>
<td>9,209</td>
</tr>
<tr>
<td>ETC (2018)</td>
<td>9,283</td>
</tr>
<tr>
<td>ETC + 10 (2028)</td>
<td>9,433</td>
</tr>
</tbody>
</table>

### 3.3.1.7. Level of Service and Mobility

### 3.3.1.7 (1) At Project Completion & Design Year

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Turn Movement</th>
<th>ETC (2018)</th>
<th>ETC + 10 (2028)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYS Route 146/E Campbell Road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYS Route 146 NB</td>
<td>L</td>
<td>A (8.0)</td>
<td>A (10.0)</td>
</tr>
<tr>
<td></td>
<td>TR</td>
<td>A (8.5)</td>
<td>B (19.0)</td>
</tr>
<tr>
<td>NYS Route 146 SB</td>
<td>L</td>
<td>A (6.5)</td>
<td>A (8.1)</td>
</tr>
<tr>
<td></td>
<td>TR</td>
<td>A (4.8)</td>
<td>A (8.5)</td>
</tr>
<tr>
<td>East Campbell Road WB</td>
<td>LTR</td>
<td>B (10.8)</td>
<td>B (14.9)</td>
</tr>
<tr>
<td>Schenectady Communications Center EB</td>
<td>LTR</td>
<td>A (0.0)</td>
<td>A (0.0)</td>
</tr>
</tbody>
</table>

*LTR = Left, Through, Right Turns

### 3.3.1.7 (2) – Work Zone Safety & Mobility

#### A. Work Zone Traffic Control Plan

This alternative would require moderate phasing plans and work zone traffic control plans to construct. NYS Route 146 would experience moderate disruptions and delays due to lane shifts/closures required to accomplish the pavement work. Pedestrians will need to be detoured to the opposite side of the roadway while sidewalk work is being performed. Routes for all emergency vehicles that access NYS Route 146 would be maintained and open during all construction phases.
Advanced signage including variable message boards would be installed along key routes leading to NYS Route 146 notifying motorists of the construction work and possible delays.

Work Zone Traffic Control would require temporary lane closures and lane shifts. Daily and holiday lane closures would be designated. Two lanes would be open during non-working hours.

B. Special Provisions

Night construction is not necessary and would not be utilized due to the close proximity to residential homes. The use of contractor incentives/disincentives will be evaluated during final design. All work zone traffic control plans will need to be coordinated with local officials and town residents.

C. Significant Projects (per 23 CFR 630.1010)

The Region has determined this project is not significant per 23 CFR 1010. A Transportation Management Plan (TMP) will be prepared for the project consistent with 23 CFR 630.1012. The TMP will consist of a Temporary Traffic Control (TTC) plan. Transportation operations (TO) and public information (PI) components of the TMP will be considered during final design.

3.3.1.8. Safety Considerations, Accident History and Analysis

As shown in Section 2.3.1.8, the section of NYS Route 146 from RM 146-1603-1008 to RM 146-1603-1016 has an accident rate above the statewide average for a similar facility. As Exhibit 2.3.1.8 shows, the predominant accident types are rear end and turning movement collisions.

By installing a two-way left turn lane throughout this portion, the accident rate is expected to decrease considerably. Improving access management at driveways would also help reduce the potential for accidents.

The installation of new sidewalks, adding pedestrian signals at East Campbell Road and bringing all driveways into conformance with NYS Policy on Entrances to State Highways will reduce the potential for accidents.

3.3.1.9. Impacts on Police, Fire Protection and Ambulance Access

Refer to Section 3.3.1.7(2) for a discussion of the anticipated work zone traffic control plan. If necessary, emergency vehicles could use local roads to avoid any congestion and potential delay that may be caused by construction.

3.3.1.10. Parking Regulations and Parking Related Issues

Existing shoulders are not wide enough for legal on-street parking. With the installation of 14 foot shared travel lanes and curbing throughout the project, there will be no parking allowed.

3.3.1.11. Lighting

No changes are proposed to existing street lighting. Utility company owned street lights on wooden utility poles would be relocated along any pole that needs to be moved.

3.3.1.12. Ownership and Maintenance Jurisdiction

NYSDOT will continue ownership and maintenance responsibilities for the highway. The Town of Rotterdam is responsible for maintenance of both existing and proposed sidewalks and drainage systems. National Grid will continue to own the street lighting and maintain it on behalf of the Town.
3.3.1.13. Constructability Review

Alternative #3 would require moderate construction phasing in order to construct the proposed improvements. A detailed constructability review would occur during final design of the project.

3.3.2. Multimodal

3.3.2.1. Pedestrians

A Pedestrian Generator Checklist is included in Appendix C.

Consistent with the Town of Rotterdam’s Comprehensive Plan and CDTC Bike/Pedestrian Priority Network recommendations, new pedestrian facilities would be constructed within the project limits.

Currently, not all of the sidewalks and pathways within the project limits meet NYSDOT or ADA standards. All new sidewalks will be five feet wide, which is NYSDOT’s minimum sidewalk width. Sidewalks and associated curb ramps will conform to Americans with Disabilities Act (ADA) standards. Pedestrian signals would be replaced/installed at the East Campbell Road intersection. Pedestrian traffic would be maintained on site for the duration of construction through, and/or around work zones.

3.3.2.2. Bicyclists

NYS Route 146 within the project limits is part of New York State Bicycle Route 5. Currently, bicyclists use the 4 foot wide shoulders. The proposed alternative would eliminate the 4 foot shoulders and install a 14 foot wide shared use travel lanes for use by both motor vehicles and bicycles. By installing shared use travel lanes rather than 11 foot wide travel lanes and 5 foot wide shoulders (Alternative #2), the proposed accident countermeasure (i.e., two-way left turn lane) can be introduced while minimizing impacts to adjacent properties.

In addition to the installation of the 14 foot wide shared travel lanes, bicycle signage including “in lane” placards would be installed to notify motorists and bicyclists they must share the travel lane.

During construction, bicycle traffic would be maintained through any work zone.

3.3.2.3. Transit

No changes are proposed.

3.3.2.4. Airports, Railroad Stations, and Ports

No changes are proposed.

3.3.2.5. Access to Recreation Areas (Parks, Trails, Waterways, and State Lands)

No changes are proposed.

3.3.3. Infrastructure

3.3.3.1. Proposed Highway Section

Refer to Appendix A for typical sections.

3.3.3.1. (1) Right of Way
There are approximately 200 proposed acquisitions (FEEs, permanent easements (PEs) and temporary easements (TEs) required to construct the proposed alternative. The FEEs are needed to accommodate the widening of the roadway and the installation of curbing (roadside and back curbing) and sidewalks within the project limits. The PEs are needed for maintaining drainage structures and the TEs are to provide room for contractor access and grading. In some instances these TEs extend to building faces in order to allow for parking lot restriping where affected by access management improvements. See Appendix G for the Table of Anticipated ROW acquisitions.

3.3.3.1. (2) Curb

Six inch reveal curbing would be provided on both sides of NYS Route 146 south of the bridge over Chrisler Avenue. At residential and commercial driveways, drop curbing (1 inch reveal) will be utilized. In order to separate parking areas from the proposed ADA compliant sidewalks, back curbing would be installed where proposed sidewalk is adjacent to parking areas. This would help to ensure vehicle overhang and/or car door swings does not conflict with pedestrian movement.

3.3.3.1. (3) Grades

The proposed pavement treatment consists of milling and resurfacing and therefore would not change the existing grade of the roadway. Grades along the roadway south of the bridge over Chrisler Avenue are relatively flat ranging from 0.18 % to a maximum of 1.58% which occurs near the beginning of the project.

3.3.3.1. (4) Intersection Geometry and Conditions

The East Campbell Road intersection will be altered with the addition of a left turn lane northbound and southbound on NYS Route 146. See the General Plans in Appendix A.

3.3.3.1. (5) Roadside Elements

3.3.3.1. (5)(a) Snow Storage, Sidewalks, Utility Strips, Bikeways, Bus Stops

Sidewalks would be replaced/installed/repaired within the project limits in accordance with NYSDOT standards. A snow storage area/utility strip between the proposed curb and sidewalk would be provided. In areas where back curbing is proposed, a back snow storage area would be provided between the back edge of sidewalk and the face of the back curbing. These snow storage areas would either be treated with a hard surface (such as stamped asphalt) or grass. Bicyclists would use the proposed shared use travel lanes. There are no bus stops within this section of NYS Route 146.

3.3.3.1. (5)(b) Driveways

All driveways would be brought into conformance with the NYSDOT “Policy and Standards for Design of Entrances to State Highways”, as necessary. Driveway grading would occur within the TE acquisition areas. If necessary, grading releases would be obtained during Construction.

3.3.3.1. (5)(c) Horizontal Clearance/Clear Zone

The minimum horizontal clearance requirement of 1.5 feet from face of curb to vertical obstructions such as utility poles would be provided.

3.3.3.2. Special Geometric Design Elements

3.3.3.2. (1) Nonstandard Features

There would be no non-standard features as part of the proposed alternative.

3.3.3.2. (2) Non-Conforming Features
There would be no non-conforming features as part of the proposed alternative.

3.3.3.3. Pavement and Shoulder

The existing pavement on NYS Route 146 is in moderate condition with low-severity cracking and rutting. The proposed pavement treatment is a single course mill and fill. In areas where new pavement is proposed outside of the existing travel lanes, new full-depth asphalt pavement would be constructed. This would change the 6% shoulder grade to a 2% grade across all of the proposed travel way. Additional information about the recommended pavement treatment is included in the Pavement Evaluation & Treatment Selection Report (PETSР) in Appendix D.

3.3.3.4. Drainage Systems

The existing Town drainage system runs throughout the Town of Rotterdam, crossing underneath NYS Route 146 within the project limits and eventually outlets into the Mohawk River.

Existing drainage structures would be cleaned and altered as necessary. Other proposed work consists of installing leaching basins or infiltration chambers where necessary. Some new drainage structures may need to be installed and connected to existing drainage structures which will require those structures be capped with manhole covers.

3.3.3.5. Geotechnical

There is a privately owned 2 foot tall concrete block retaining wall encroaching within the State ROW in front of a home on the eastbound side of the road at 2783 Hamburg Street that may be replaced with a similar wall as part of the proposed alternative. There are no special geotechnical concerns with the soils or rock slopes within the project area.

3.3.3.6. Structures

The proposed alternative would include minor deck patching and resurfacing of the bridge carrying NYS Route 146 over Chrisler Avenue and the CSX Trans/Amtrak railroad.

3.3.3.7. Hydraulics of Bridges and Culverts

There are no bridges or culverts over waterways within the project limits.

3.3.3.8. Guide Railing, Median Barriers and Impact Attenuators

There is no guide rail, median barrier or impact attenuators within the project limits and no new guide rail is proposed.

3.3.3.9. Utilities

Utility impacts from the proposed alternative include the relocation of the majority of utility poles due to widening of the roadway. Overhead lines owned by National Grid, Verizon and Time Warner would be affected by these relocations. Most of these poles would need to be moved back approximately two feet and will fall within the proposed four foot snow storage/utility strip area. Some may require lateral relocation as well. In addition, part of an underground National Grid gas line as well as a Town water main may need to be moved depending on the exact location of proposed drainage pipes and structures.
Also, the elevations of various manhole covers and valves located within the existing sidewalk and/or pavement areas would need to be adjusted. Coordination with the affected utility companies is ongoing.

The cost of relocating public utilities, such as the Town water line, as well as all utility service line relocations or alterations that are normally the responsibility of the private property owner, would be paid for by the State. These costs are included in the preliminary engineer’s estimate of construction costs. The cost of relocating private Utilities, such as wooden utility poles and overhead lines owned by National Grid, Verizon, Time Warner, and other similar companies, would be paid for by those companies. The total cost to these companies for this work may be on the order of $1.5 Million.

A utility disposition sheet is included in Appendix F.

3.3.3.10. Railroad Facilities

There is a railroad crossing located at the northern end of the project. The railroad is located under BIN 1-03833-0 and would incur no work as part of this project.

3.3.4. Landscape and Environmental Enhancements

3.3.4.1. Landscape Development and Other Aesthetics Improvements

Under the proposed alternative, landscaping improvements would be provided in order to provide a pleasing visual appearance and to compliment and/or enhance the surrounding existing features. Details regarding the use of plantings, using colored asphalt in snow storage areas and installation of bicycle racks will be developed during final design. Coordination with the Town of Rotterdam will continue during final design.

3.3.4.2. Environmental Enhancements

Under the proposed alternative, infiltration chambers would be installed in order to treat stormwater on site as opposed to adding roadway runoff into the existing closed drainage system.

3.3.5. Miscellaneous

NYS Smart Growth Public Infrastructure Policy Act (SGPIPA)

Pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act (SGPIPA).

To the extent practicable this project has met the relevant criteria as described in ECL § 6-0107. The Smart Growth Screening Tool was used to assess the project’s consistency and alignment with relevant Smart Growth criteria. The tool was completed by the Region’s Planning and Program Management group on May 26th, 2015 and reflects the current project scope.
CHAPTER 4 - SOCIAL, ECONOMIC and ENVIRONMENTAL CONDITIONS and CONSEQUENCES

4.1 Introduction

4.1.1 Environmental Classification

4.1.1.1 NEPA Classification

This project is federally funded and is subject to a National Environmental Policy Act (NEPA) review. This project is being progressed as a Class II action (Categorical Exclusion) because it does not individually or cumulatively have a significant environmental impact and is excluded from the requirement to prepare an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) as documented in the Federal Environmental Approvals Worksheet (FEAW) and following discussion in this chapter.

Specifically, in accordance with the Federal Highway Administration’s regulations in 23 CFR 771.117 (c) this project is one of the project types described in the “C” list as primarily a modernization of an existing highway by resurfacing, restoration, rehabilitation, and reconstruction and does not significantly impact the environment. Refer to Appendix B for the completed Federal Environmental Approvals Worksheet (FEAW).

4.1.1.2 SEQR Classification

The project has been progressed in accordance with 17 NYCRR, Part 15, "Procedures For Implementation of State Environmental Quality Review Act" The SEQR “lead agency” for this action is the New York State Department of Transportation (NYSDOT). The NYSDOT has determined that this project is a SEQR Type II Action and requires no further SEQR processing. The project has been identified as a Type II action, per 17 NYCRR, Part 15, Section 15.14, Subdivision (e), Item 37, Paragraph (i) . This permits a highway and associated construction project to be classified as Type II if that project is consistent with the criteria contained in subdivision (d) of Section 15.14, and is of a scale and scope illustrated by the following:

“(i) minor improvements to existing highways, such as adding or widening shoulders, adding auxiliary lanes for weaving, climbing, turning or speed change, or correction of substandard intersections;
(ii) installation on existing highways of traffic control devices, surveillance systems, pavement markings, lighting, signs, and other similar operational improvements;
(v) minor reconstruction or rehabilitation of existing highways within existing highways within existing right-of-way, or involving minimal right-of-way acquisition;”

Specifically, the project does not include or result in:

a. The acquisition of an occupied dwelling or business structure;
b. Significant changes in passenger or vehicle traffic volumes, vehicle mix, local travel patterns or access;
c. More than minor social, economic or environmental effects upon occupied dwelling units, businesses, abutting properties or other established human activities;
d. Significant inconsistency with current plans or goals that have been adopted by local government bodies;
e. Physical alteration of more than 1 ha (2.5 ac) of publicly owned or operated park land, recreational
area or designated open space;

f. An effect on a district, building, structure or site eligible for, or listed on, the National Register of Historic Places;

g. More than minor alteration of, or adverse effect upon, any property, protected area, or natural or man-made resource of national, State or local significance, including but not limited to:
   (i) Wetlands and associated areas;
   (ii) Floodplains;
   (iii) Prime or unique agricultural land;
   (iv) Agricultural districts, when more than one acre may be affected;
   (v) Water resources, including lakes, reservoirs, rivers and streams;
   (vi) Water supply sources;
   (vii) Designated wild, scenic and recreational rivers;
   (viii) Unique ecological, natural wooded or scenic areas;
   (ix) Rare, threatened or endangered species;
   (x) Any area designated as a critical environmental area;

h. Requirement for an indirect air source quality permit.

4.1.2 Coordination with Agencies

4.1.2.1 NEPA Cooperating and Participating Agencies

The following agencies are Cooperating Agencies in accordance with 23 CFR 771.111(c):

- New York Natural Heritage Program
- Federal Highway Administration (FHWA)
- US Fish and Wildlife Service
- NYS Historic Preservation Officer (SHPO)
- Schenectady County
- Town of Rotterdam

4.2 Social

The majority of Hamburg Street is zoned "retail business", with the majority of the land surrounding Hamburg Street zoned "one-family residential". There are single family homes intermingled with businesses on Hamburg Street.

The primary objective of this project is to provide safety and operational improvements. The accident rate in this corridor was nearly twice the expected accident rate for similar highways statewide. Additionally, the corridor does not provide safe or sufficient pedestrian facilities. The project will reconstruct the roadway from RM 1010 to 1015 by adding a center two-way left turn lane (TWLTL), will create access management through definition of driveway openings, and improve operation at the signalized intersections.

According to results from an investigation from the 1996 Regional Highway Safety Improvement Work Program it was calculated that by adding the TWLTL would reduce the current accident rate by 44%. Additionally the project will construct continuous ADA compliant sidewalks on both sides of the road from the intersection with Route 7 to Second Street, add new high visibility crosswalks, and add pedestrian signals with countdown timers at the signalized intersection with East Campbell Road. This will provide direction to pedestrians, and better delineation of pedestrian facilities for motorists.

Pedestrian traffic would be maintained on the existing sidewalk system and/or on temporary sidewalks during construction. Negative impacts to the local neighborhoods and community are not anticipated.
4.2.1 Land Use

The land use within the immediate project area consists of an existing transportation corridor. There are residential and business land uses adjacent to the project area. The affected population of this area is a mixture of commuters, residents, retail shoppers, and professionals. The transportation corridor is a key route that allows these users access to the area.

The proposed project is compatible with the local land use plans developed by the Town. The project will improve pedestrian accommodations, vehicular traffic operations, and will also address the community's goals of improving quality of life.

4.2.1.1 Demographics and Affected Population

The project area surrounding Hamburg Street is single family residential. Along Hamburg Street there are single family homes intermingled with small businesses.

As of the census of 2000, there were 28,316 people residing in the Town of Rotterdam. The racial makeup of the town was 97.26% white and 0.95% African American. Of the 11,544 households 29.4% included children under the age of 18 and 12.6% had someone living alone who was 65 years of age or older. The median age was 41 years.

The median income for a household in the town was $46,267. About 2.8% of families and 4.5% of the population were below the poverty line, including 5.2% of those under age 18 and 5.9% of those ages 65 or over.

4.2.1.2 Comprehensive Plans and Zoning

The proposed safety improvements along Hamburg Street are consistent with local planning goals. The Town of Rotterdam recently completed a Comprehensive Plan which includes the project corridor. This project is consistent with the goals of that Comprehensive Plan and will:

- Attract appropriate development;
- Minimize impacts to the transportation system;
- Compliment the surrounding residential neighborhoods; and
- Provide a new and inspired identity to the Hamburg Street Commercial District.

4.2.2 Neighborhoods and Community Cohesion

4.2.2.1 Community Cohesion

The project will not divide neighborhoods, isolate part of a neighborhood, or otherwise affect community cohesion. The age and ethnic background of the affected population is of a similar composition as the rest of the Town of Rotterdam.

The project corridor consists of predominately older, relatively well-kept 20th century residential properties with some scattered commercial properties. Sidewalks are not continuous within the project corridor. Bradt School and three churches are located along Hamburg Street within the project limits. Retail businesses within the project limits are mostly vehicle oriented and automobiles are the primary mode of transportation for patrons. There is some pedestrian activity, primarily youths walking to and from the nearby mall and is evidenced by worn paths. Conditions for bicycling are relatively good; however the existing pavement condition may deter some.

The improved streetscape and pedestrian accommodations will improve aesthetics and help to create a more positive business environment. The addition of sidewalks and a shared use lane for bicyclists will
allow pedestrians and bicyclists in the surrounding area to walk and cycle to local businesses. The project will not otherwise affect community cohesion.

4.2.2.2 Home and Business Relocations

This project involves the repair of an existing highway on the existing alignment and does not require the acquisition of occupied dwellings/businesses. It will therefore not cause adverse impacts to neighborhood character or stability. The proposed alternative would require no displacement of residences or businesses and there would be no relocation impacts.

4.2.3 Social Groups Benefited or Harmed

4.2.3.1 Elderly and/or Disabled Persons or Groups

A review of US Census data for Schenectady County indicates that there is no significant concentration of elderly or disabled persons in the project area. However, the Pedestrian Generator Checklist found in Appendix C indicates that the existing highway consists of sidewalks along both sides of the roadway throughout the project limits. Those existing sidewalks are intermittent and in fair to poor condition. In several locations, these sidewalks do not comply with current American with Disabilities Act Accessibility Guidelines (ADAAG) requirements with respect to ramp slopes, ramp texture, sidewalk width, and surface conditions. This project proposes new sidewalks on both sides of Hamburg Street and delineated crosswalks within the project limits. This will improve accessibility for all pedestrians.

4.2.3.2 Transit Dependent

There are no transit providers operating within the project limits.

4.2.3.3 Low Income, Minority and Ethnic Groups (Environmental Justice)

The project is not located in or near an environmental justice area.

4.2.4 School Districts, Recreational Areas, and Places of Worship

4.2.4.1 School Districts

The proposed project corridor is within the Mohonasen Central School District. The Bradt Primary School, located within the project limits at 2719 Hamburg Street, includes grades kindergarten through second grade. This school busses all of their students. The Pinewood School, serving grades three through five, and the Mohonasen High School are both located outside of the project limits but their bus routes include Hamburg Street. The existing intermittent sidewalk within the project limits are used by some students from the adjacent neighborhoods. The proposed improvements to pedestrian facilities would be beneficial to these students. Pedestrian traffic would be maintained on the existing sidewalk system and/or on temporary sidewalks during construction.

4.2.4.2 Recreational Areas

There are two municipal parks each a block away from the project limits. Fort Hunter Park is located on Curry Road just west of the roundabout at the intersection of Route 7 and Route 146, and Carmen Park is located just east of Hamburg Street between 3rd and 4th Streets. This project will have no impacts to these municipal parks.

4.2.4.3 Places of Worship

There are four places of worship within the project limits: Abounding Grace, St. Gabriel’s, Victory Church, and Carmen United Methodist Church. There will be no adverse impacts to access or egress from the
places of worship because Hamburg Street will stay open for traffic during construction. Negative impacts are not anticipated to places of worship.

4.3 Economic

4.3.1 Regional and Local Economies

The proposed project involves rehabilitation of Hamburg Street to improve traffic operations and pedestrian accessibility. Recent investments in the renovation of the former Grand Union, in excess of $2 million, and the opening of a new United Communications Center are significant, and will provide jobs and attract additional business to invest in locating along Hamburg Street. In addition, this project would improve the streetscape through the installation of new curb, sidewalk, and snow storage area surface treatments.

Access will be maintained throughout the corridor during construction. No major impacts to the local business are anticipated. It is expected that the proposed project will have a positive affect on the regional and local economy when complete. Improving the corridor will preserve and enhance the visitor experience attracting new visitors.

4.3.2 Business District Impacts

The safety and operational improvements provided under the proposed alternative will help make the area more attractive to both motorists and pedestrians. In this way people will be encouraged to shop in the local stores, eat at the local restaurants, and work at the local businesses, thus fostering future economic development within this portion of the Town of Rotterdam.

4.3.3 Specific Business Impacts

There are businesses located on both sides of Hamburg Street within the project limits. These businesses include: Tina King’s Hair Studio, Symmetry Hair Design, Marco TV Service, Sons of Italy, SJ Auto Plus, Ferrara Dance Studio, Joseph J. Mazzone Public Accounting, St. Peter’s Addiction Recovery Center, Andrea’s Hair Studio, Vintage Grooming Parlor (pet grooming), Joe Elis Appliances, Kathleen’s Massage, Quality Inn, Stewart’s Shops, Rollarama Skating Center, Car Wash Detail Express, First Class Products T-Shirt Design, 1st National Bank of Scotia, NYS Association of Chiefs of Police, Schenectady County Unified Communications Center, Rotterdam Senior Citizen Center, E-Z Wash, Redwood Diner, CVS Pharmacy, Tracy Hair Salon, Center Stage Deli, DeAngelo’s Play by Play Sports Bar and Grill, U-Haul Moving and Storage of Schenectady, Sunoco Gas Station, and J.T. Cutting Salon. There may be minor temporary impacts to parking and accessibility for some of these businesses. During construction there could be some temporary impacts from delays for people traveling thru the corridor, parking and accessibility for some of these businesses. With the exception of some businesses having some reduced parking due to the roadway widening and new pedestrian facilities, the long-term impacts are anticipated to be positive with improved road conditions, traffic flow, and new sidewalks. The project is therefore expected to be a benefit to these businesses and services.

4.4 Environmental

4.4.1 Wetlands

4.4.1.1 State Freshwater Wetlands

There are no NYSDEC regulated freshwater wetlands or regulated adjacent areas (100 ft) within the project area, as per the NYSDEC Freshwater Wetlands Maps for Schenectady County, Schenectady quadrangle 2014. A site visit was performed to verify this. No further investigation is required and Environmental Conservation Law, Article 24 is satisfied.
4.4.1.2 State Tidal Wetlands
A review of the NYSDEC GIS wetland data files indicates that there are no NYSDEC jurisdictional tidal wetlands or regulated adjacent areas within or near the project limits, and ECL Article 25 does not apply.

4.4.1.3 Federal Jurisdiction Wetlands
The project site has been reviewed for wetlands in accordance with the criteria defined in the 1987 US Army Corps of Engineers Wetland Delineation Manual and the January 2012 Regional Guidance. It has been determined the project will not impact areas that meet these criteria.

4.4.1.4 Executive Order 11990
Based on a site visit, there are no wetlands located within the project’s area of potential effect. Executive Order 11990 does not apply to this project.

4.4.1.5 Mitigation Summary
No wetland mitigation/monitoring plan is required for this project, since no wetlands are impacted.

4.4.2 Surface Waterbodies and Watercourses
4.4.2.1 Surface Waters
The proposed project activities do not involve excavation in or the discharge of dredged or fill material into, Waters of the U.S. No permits under this Section are anticipated.

4.4.2.2 Surface Water Classification and Standards
Based upon a review of the NYSDEC GIS data maps for regulated streams, there are no surface waterways within the proposed project limits.

The project is not located within or adjacent to a TMDL Watershed.

4.4.2.3 Stream Bed and Bank Protection
Based upon a review of the NYSDEC GIS database, and as verified by a site visit, there are no regulated stream beds or banks in the project area.

4.4.2.4 Airport and Airway Improvement
The project does not involve improvement of an airport or airway.

4.4.2.5 Mitigation Summary
Surface water impacts will not be caused by this project. Therefore no mitigation is required or proposed.

4.4.3 Wild, Scenic, and Recreational Rivers
4.4.3.1 State Wild, Scenic and Recreational Rivers
There are no NYSDEC Designated, Study or Inventory State Wild, Scenic or Recreational Rivers within or adjacent to the proposed project site. No further review is required.
4.4.3.2 National Wild and Scenic Rivers

The project does not involve a National Wild and Scenic River as shown by the Nationwide Rivers Inventory List of National Wild and Scenic Rivers. No further review is required.

4.4.3.3 Section 4(f) Involvement

The proposed project does not involve work in or adjacent to a wildlife or waterfowl refuge. No further consideration is required.

4.4.3.4 Mitigation Summary

There will be no permanent impacts, therefore no mitigation is required or proposed.

4.4.4 Navigable Waters

4.4.4.1 State Regulated Waters

There are no state regulated navigable waters located within the project’s area of potential effect that will be impacted by the work.

4.4.4.2 Office of General Services Lands and Navigable Waters

There are no OGS underwater holdings located within the project’s area of potential effect that will be impacted by the work.

4.4.4.3 Rivers and Harbors Act – Section 9

Since the project does not involve the construction or modification of any bridge, dam, dike, or causeway over any navigable water of the United States, Section 9 is not applicable.

4.4.4.4 Rivers and Harbors Act – Section 10

Since the project does not involve the creation of any obstruction to the navigable capacity of any of the waters of the United States, or in any manner alter or modify the course, location, condition, or capacity of any navigable water of the United States, Section 10 is not applicable.

4.4.5 Floodplains

4.4.5.1 State Flood Insurance Compliance Program

The project corridor is not within a 100 year floodplain.

4.4.5.2 Executive Order 11988

The project will not impact any floodplains. EO 11988 does not apply.

4.4.6 Coastal Resources

4.4.6.1 State Coastal Zone Management Program

The proposed project is not located in a State Coastal Zone Management (CZM) area, according to the Coastal Zone Area Map from the NYS Department of State’s Coastal Zone Management Unit.
4.4.6.2 State Coastal Erosion Hazard Area

The proposed project is not located in or near a Coastal Erosion Hazard Area.

4.4.6.3 Waterfront Revitalization and Coastal Resources Program

According to NYS DOS “List of Approved Coastal Local Waterfront Revitalization Programs (LWRPs),” dated March 2007, the proposed project is not located in a Local Waterfront Revitalization Area. No further action is required.

4.4.6.4 Federal Coastal Barrier Resources Act (CBRA) and Coastal Barrier Improvement Act (CBIA)

The proposed project is not located in, or near a coastal area under the jurisdiction of the Coastal Barrier Resources Act (CBRA) or the Coastal Barrier Improvement Act (CBIA).

4.4.7 Groundwater Resources, Aquifers, and Reservoirs

4.4.7.1 Aquifers

NYSDEC aquifer GIS data files have been reviewed and it has been determined that the proposed project is located in the Sole Source, Schenectady-Niskayuna primary aquifer. The scope of work involves improvements to the vehicular and pedestrian accommodations along Hamburg Street within the project limits. There are no proposed deep excavations and no watercourses would be altered by the proposed alternative therefore there will be no impacts to the aquifer.

The project location is also within Zone 4 of the Federal Sole Source Aquifer. Measures will be taken during final design and construction of this project to avoid, minimize or mitigate any possible adverse impacts to this aquifer. During construction, areas approved by the Engineer for the storage of equipment and materials will be located away from drainage courses to reduce the potential for water pollution. As normally part of any NYSDOT construction project, a supply of absorbent materials is kept on hand so that it may be rapidly deployed to soak up any spill. Debris generated by project construction will be disposed of properly and not within the project limits. There will be no future disposal of waste water; de-icing compounds or salt storage; disposal or storage of construction and demolition debris; petroleum or hazardous materials storage; fertilizer, herbicide or insecticide storage; mining or extraction of soils, sands and gravels allowed within the highway boundary within the project limits. These measures are intended to minimize contamination from highway runoff and construction activities both during construction and in the future. Project activities will comply with the applicable standards in 6 NYCRR Part 703. There will be no impact to aquifers, wells, or reservoirs.

4.4.7.2 Drinking Water Supply Wells (Public and Private Wells) and Reservoirs

There are no municipal drinking water wells, wellhead influence zones, or reservoirs within or near the project limits, according to the GIS data files. During the design phase, measures to avoid, minimize or mitigate adverse impacts to the Sole Source Aquifer will be identified. Best Management Practices (BMPs) to protect the aquifer will be employed, including Erosion and Sediment Control, Stormwater Management and Construction Chemical Storage and Handling.

4.4.8 Stormwater Management

A New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities, GP-0-15-002, will be required for this redevelopment project because the proposed alternative has more than one acre of soil disturbance. A Stormwater Pollution Prevention Plan (SWPPP) with the appropriate sediment and erosion control measures will be developed. Based on the anticipated area of disturbance, replaced
impervious material and new impervious cover to be added, permanent stormwater management practices will be required. The practices will be sized in accordance with NYSDEC’s Stormwater Management Design Manual.

Erosion and sedimentation control plans and details will be developed during final design and the resulting work constructed in accordance with Section 209 Soil Erosion and Sediment Control of the NYSDOT Standard Specifications and the project the requirements of the SPDES permit. These plans and details will include both temporary and permanent measures to prevent soil erosion. Such measures may include: straw mulch, erosion control fabric, temporary seeding, silt fence, check dams, and inlet protection. These measures will serve to minimize the potential for pollutants from the proposed project to reach any environmentally sensitive area.

The project corridor is not adjacent to or discharging water to a total maximum daily load (TMDL) watershed or a listed impaired or threatened waterbody (303 (d) waterbody).

4.4.9 General Ecology and Wildlife Resources

4.4.9.1 Fish, Wildlife, and Waterfowl

A review of the project’s area of potential effect indicates there are no special habitats or breeding areas for any species of plants or animals.

4.4.9.2 Habitat Areas, Wildlife Refuges, and Wildfowl Refuges

The proposed project does not involve work in, or adjacent to, a wildlife or waterfowl refuge. No further consideration is required.

4.4.9.3 Endangered and Threatened Species

The U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation (IPaC) System website for federally endangered species lists Northern Long-eared Bat and Karner Blue Butterfly.

1. The threatened northern long-eared bat (*Myotis septentrionalis*). Several street trees within the project limits would need to be removed under the proposed alternative. These trees would be cut during the Conservation Cutting Window of October 31st to March 31st. This is the time period that northern long-eared bats (*Myotis septentrionalis*) are in hibernation. These proposed tree cuttings would result in a “may effect but not likely to adversely effect” determination for this species. The project site is located approximately 8 miles from the closest northern long-eared bat hibernacula. There are no known captures, acoustical survey records or known roost areas in the project area or anywhere within NYSDOT Region 1.

2. The endangered Karner blue butterfly (*Lycaeides melissa samuelis*), is restricted to dry sandy areas with open woods and clearings supporting wild blue lupine. This type of habitat is usually associated with pitch pine/scrub oak or oak savannah communities maintained by fire at an early stage of plant succession. All staging of equipment to support this project will be required to occupy only previously disturbed areas within the highway’s Right of Way. This developed project area is not suitable habitat to this species. A field visit in July 30, 2014 showed no lupine in the project area. Therefore, there will be no effect to this species.

3. GIS data was screened for Bald Eagle (*Haliaeetus leucocephalus*) nests or habitat. A site visit in July 30, 2014 confirmed the GIS information that no habitat or nesting sites are within 5 miles of the project site. The closest known nesting site is located on the south side of the lower Mohawk River, northwest of Lock Number 7 and east of Niskayuna. There will be ‘no effect’ to the bald eagle as a result of this project at either location.

Project activities will be contained on or near the roadway pavement, and staging of equipment and vehicles will not be allowed off the paved surfaces or other previously disturbed areas without pre-
approval from NYSDOT, so Federal or State Listed Endangered or threatened species are unlikely to be affected. The USFWS was contacted by NYSDOT (through FHWA) on September 12, 2014. They received updated project information on May 19, 2015. The final letter of concurrence dated July 6, 2015 is included in Appendix B.

According to the NY Natural Heritage database of threatened and endangered species, there are no State listed species within 0.5 miles of the project location.

### 4.4.9.4 Invasive Species

A field review of the project limits did not indicate any presence of known invasive species within the right-of-way. The following precautions will be taken to prevent the introduction of new or additional invasive species, intentionally or accidentally, during project design and construction:

1. The NYSDOT Standard Specifications Section 107-01, Laws, Rules, Regulations and Permits requires that the Contractor thoroughly clean all construction equipment and vehicles operating in infested areas prior to moving into non-infested areas. This includes cleaning by pressure washing all equipment suspected of containing the roots, seeds, or other viable parts of invasive plant species; such equipment might include excavators and trucks used for transportation of excavated soil or topsoil, stone, organic matter, trees, shrubs and vines or other similar material. Cleaning shall be accomplished prior to equipment arriving at the work site, after working in known invasive species areas, and before each piece of equipment leaves the project site.

2. Standard Specifications Section 713-01 requires that topsoil shall be free from any seeds or other viable propagules of invasive plants. Therefore, any excavated materials that contain the roots, seeds, or other viable parts of invasive plant species may not be used as topsoil and must be handled and placed in a manner that does not promote the spread of invasive plants into non-infested areas.

### 4.4.9.5 Roadside Vegetation Management

Existing roadside vegetation consists primarily of maintained lawn areas. Lawn areas disturbed by construction would be restored in-kind.

### 4.4.10 Critical Environmental Areas

#### 4.4.10.1 State Critical Environmental Areas

According to information obtained from NYSDEC, the proposed project does not involve work in or near a Critical Environmental Area.

#### 4.4.10.2 State Forest Preserve Lands

According to information obtained from NYSDEC, the proposed project does not involve work in or near state forest preserve lands.

### 4.4.11 Historic and Cultural Resources

#### 4.4.11.1 National Heritage Areas Program

The proposed project is located in Erie Canal National Heritage Area. The Management Entity has been contacted to ensure that the project is consistent with the Heritage Area Management Plan. The project is consistent with the plan.
4.4.11.2 National Historic Preservation Act – Section 106 / State Historic Preservation Act – Section 14.09

The proposed project will not require project activities within previously undisturbed areas that have the potential to contain archeological resources. Thus, an archeological survey will not be required. This concludes the Section 106 Process.

4.4.11.3 Architectural Resources

The proposed project does not involve federally owned, jurisdictional or controlled property that is eligible for inclusion in the National Register of Historic Places. Therefore, Section 110 does not apply.

4.4.11.4 Archaeological Resources

The proposed project will not require project activities within undisturbed areas that have the potential to contain archeological resources.

4.4.11.5 Historic Bridges

There are no bridges over 50 years old or listed on NYSDOT's Historic Bridge Inventory that are located within the project’s area of potential effect.

4.4.11.6 Historic Parkways

This project does not have to potential to impact any Historic Parkways.

4.4.11.7 Native American Involvement

The proposed project will not require project activities within previously undisturbed areas that have the potential to contain archeological resources. Thus, an archeological survey will not be required and no coordination with the Tribes is required.

4.4.11.8 Section 4(f) Involvement

The Department has determined that there are no properties on, or eligible for, the National Register of Historic Places, or properties over 50 years old that may be eligible within the project’s area of potential effect. Therefore, a Section 4(f) evaluation for historical resources is not required.

4.4.12 Parks and Recreational Resources

There are two municipal parks each a block away from the project limits. Fort Hunter Park is located on Curry Road just west of the roundabout at the intersection of Route 7 and Route 146, and Carmen Park is located just east of Hamburg Street between 3rd and 4th Streets. This project will have no impacts to these municipal parks.

4.4.12.1 State Heritage Area Program

The proposed project will not impact areas identified as the Mohawk Valley Heritage Area.

4.4.12.2 National Heritage Areas Program
The proposed project is located in Erie Canal National Heritage Area. The Management Entity has been contacted to ensure that the project is consistent with the Heritage Area Management Plan. The project is consistent with the plan.

4.4.12.3 National Registry of Natural Landmarks

There are no listed nationally significant natural areas within, or adjacent to, the project area.

4.4.12.4 Section 4(f) Involvement

There are no publicly owned parks or recreational facilities, protected under Section 4(f) of the USDOT Act, in or adjacent to the project area. No further action is required under this section.

4.4.12.5 Section 6(f) Involvement

The project does not impact parklands or facilities that have been partially or fully federally funded through the Land and Water Conservation Act. No further consideration under Section 6(f) is required.

4.4.12.6 Section 1010 Involvement

This project does not involve the use of land from a park to which Urban Park and Recreation Recovery Program funds have been applied.

4.4.13 Visual Resources

The proposed project is located in the Town of Rotterdam, within Schenectady County. The highway corridor predominately consists of a mix of 20th century residential and commercial structures. The commercial buildings are generally surrounded by large asphalt parking lots. Other land development within the project limits includes St. Adalbert Cemetery, Carman fire station, and Bradt Elementary School.

The highway corridor also includes a discontinuous sidewalk system that parallels the highway on both sides of the road. The existing sidewalks are in fair to poor condition. The surrounding area consists primarily of suburban residential neighborhoods. The landscaping along the corridor is limited to the residential and commercial properties. Landscaping is predominantly mowed lawns and formal plantings associated with the development. There are no significant visual resources within or adjacent to the project area that would be affected by the proposed scope of work.

The primary viewer groups are highway users (motorists and bicyclists), residential and commercial occupants from adjacent residences and businesses, and pedestrians. Their viewshed as they travel along Hamburg Street is generally limited to the roadway and the front sides of the abutting residential and commercial properties.

The major visual features of the project corridor are treed residential lawns, commercial structures, and the highway. Additional visual features include a cemetery, sidewalks, and overhead utilities with luminaries.

The project is proposing safety and operational improvements to NYS Route 146 (Hamburg Street) corridor. These improvements include widening of the highway, access management of driveways and the construction of a two-way left turn lane from Stoodley Place to Cardiff Road. The project also includes the installation of concrete sidewalks on both sides of the highway for the full length of the project.

The proposed alterations to the existing viewshed will result in a positive effect to the visual landscape. The most prominent streetscape alteration that would result from the proposed alternative would be the
widening of the roadway. This includes the addition of new curbing, maintenance strip with turf or colored and stamped asphalt, concrete sidewalks (both sides of the highway), and new street tree plantings. The visual quality of the existing streetscape is considered to be low. The project will improve and enhance the aesthetics of the highway corridor by incorporating new street tree plantings, creating a uniform maintenance strip of turf or a decorative paving material, and sidewalks separated from the street by green space or decorative pavement.

The proposed highway improvements to be provided by the proposed alternative would be compatible with, and would have a positive effect on the existing visual resources within the project limits. These improvements will promote a pleasing visual appearance and compliment and/or enhance the existing surrounding features. It is anticipated that the enhancements will be generally perceived as a positive change by most viewer groups.

4.4.14 Farmlands

4.4.14.1 State Farmland and Agricultural Districts

Based on a review of the NYS Agricultural District Maps for Schenectady County, the proposed project is not located in or adjacent to an Agricultural District.

4.4.14.2 Federal Prime and Unique Farmland

The proposed project activities will not convert any prime or unique farmland, or farmland of state or local importance, as defined by the USDA Natural Resources Conservation Service, to a nonagricultural use.

4.4.15 Air Quality

4.4.15.1 Regulatory Framework

Based on the scope of the work and pursuant of 40 CFR Parts 51 and 93 this project does not exceed any ambient air quality standards. An air quality analysis is not required since this project will not increase traffic volumes, reduce source-receptor distances by 10% or more, or change other existing conditions to such a degree as to jeopardize attainment of the National Ambient Air Quality Standards (NAAQS). Therefore, no additional analysis is required for this project.

4.4.15.2 Transportation Conformity

This project is located in Schenectady County which is considered an ozone attainment area. The project is considered an exempt project as per Table 2 in Section 93.126 of 40 CFR. In addition, this project is also exempt from Regional Emissions Analysis as per Table 3 in Section 93.127 of 40 CFR. Therefore, no additional analysis is required for this project.

4.4.15.3 Carbon Monoxide (CO) Microscale Analysis

An air quality analysis for CO is not required since this project will not increase traffic volumes, reduce source-receptor distances by 10% or more, or change other existing conditions to such a degree as to jeopardize attainment of the NAAQS. The project does not require a project-level conformity determination.

4.4.15.4 Mesoscale Analysis

A mesoscale analysis is not required for this project since it does not significantly affect air quality conditions over a large area and is not a regionally significant project.
4.4.15.5 Mobile Source Air Toxics (MSATs) Analysis

A MSAT Analysis is not required for this project, since the proposed alternative would have no impacts on traffic volumes or vehicle mix.

4.4.15.6 Particulate Matter (PM) Analysis

A PM microscale/hotspot analysis is not required for this project since there are no local air quality concerns and the proposed alternative would not jeopardize attainment of the NAAQS for particulate matter.

4.4.15.7 Greenhouse Gas Analysis

A greenhouse gas analysis is not required due to the limited size and scope of this project. The project does not significantly affect air quality conditions over a large area and is not a regionally significant project.

4.4.16 Energy

An energy assessment is not required for this project because the proposed alternative is not expected to:

a. Increase or decrease vehicle miles traveled (VMT);
b. Generate additional vehicle trips;
c. Significantly affect land use development patterns;
d. Result in a shift in travel patterns; or
e. Significantly increase or decrease vehicle operating speeds.

This project would therefore not significantly affect energy consumption.

4.4.17 Noise

The project will not significantly change either the horizontal or vertical alignment, or increase the number of through-traffic lanes. Therefore, this project is not a Type I project and does not require a traffic noise analysis as per 23 CFR 772.

4.4.18 Asbestos

4.4.18.1 Screening

An asbestos screening has been performed for this project. The screening did not find any suspect asbestos materials.

4.4.18.2 Assessment and Quantification

An asbestos assessment has been completed for this project. No suspect asbestos materials have been identified.

4.4.18.3 Mitigation Summary

No special site specific variances are anticipated for this project.

4.4.19 Hazardous Waste and Contaminated Materials
4.4.19.1 Screening

A Hazardous Waste/Contaminated Materials Site Screening has been conducted in accordance with NYSDOT Environmental Procedures Manual, Chapter 5, in order to document the likely presence or absence of hazardous/contaminated environmental conditions. This screening included a review of NYSDEC regulatory data files and a site walkover on October 17, 2014. A hazardous/contaminated environmental condition is the presence or likely presence of any hazardous substances or petroleum products (including products currently in compliance with applicable regulations) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.

4.4.19.2 Assessment and Quantification

Based on the above mentioned screening it was determined the proposed alternative does not have the potential to encounter hazardous waste or contaminated materials. Although there is an abandoned gas station within the project limits the tanks and any contaminated soil associated with them have previously been removed and the site remediated. In the event residual petroleum is encountered the contract proposal will contain a contaminated soil specification. This material, although contaminated, is not to be classified as hazardous waste. If hazardous material is encountered during construction they will be identified, segregated, and disposed of in accordance with NYSDOT specifications.

4.4.19.4 Mitigation Summary

No hazardous waste/contaminated materials were identified in the Hazardous Waste/Contaminated Materials Site Screening. No remediation activities are likely warranted for this project.

4.5 Construction Effects

4.5.1 Construction Impacts

Construction of this project is anticipated to take place over a two year period. When construction is underway, the traveling public will be made aware of the project by Variable Message Sign (VMS) boards and/or flaggers as necessary. Route 146 will not be closed to traffic during construction. Negative impacts to businesses are not anticipated.

Temporary air quality impacts are likely to occur during project construction. These impacts will consist mainly of dust generated during road removal and earthwork operations.

Construction staging areas are temporary in nature and all such areas would be restored at the end of their use.

4.5.2 Mitigation Measures

The below listed measures are normally included in NYSDOT projects of this nature to mitigate on-site dust. A project specific erosion & sediment control plan will be developed during final design.

1. Provide water truck to periodically wet unimproved areas.
2. Utilize stabilized construction entrances to help prevent the tracking of soil from the site.
3. Apply temporary seed to soil stockpiles.

4.6 Indirect and Secondary Effects
4.6.1 Indirect Socioeconomic Effects

The proposed project has the potential to indirectly affect social conditions by spurring growth.

4.6.2 Social Consequences

It is not expected there would be any adverse impacts to the residences, the school, or the churches as a result of construction of the proposed alternative. During construction people traveling thru the project limits could experience some minor delay. This would be a temporary and relatively minor impact. In the long-term, impacts should be positive with an improved pavement surface, improved traffic flow, and improved pedestrian accommodations.

4.6.3 Economic Consequences

Local businesses are likely to be positively affected by the improvements that would be provided under the proposed alternative. The project area has an established business economy capable of rising to meet the increased demand for goods and services that may result from the rehabilitation of Hamburg Street.

4.7 Cumulative Effects

Long-term impacts to residences, the school, the churches, and the businesses are anticipated to be positive.