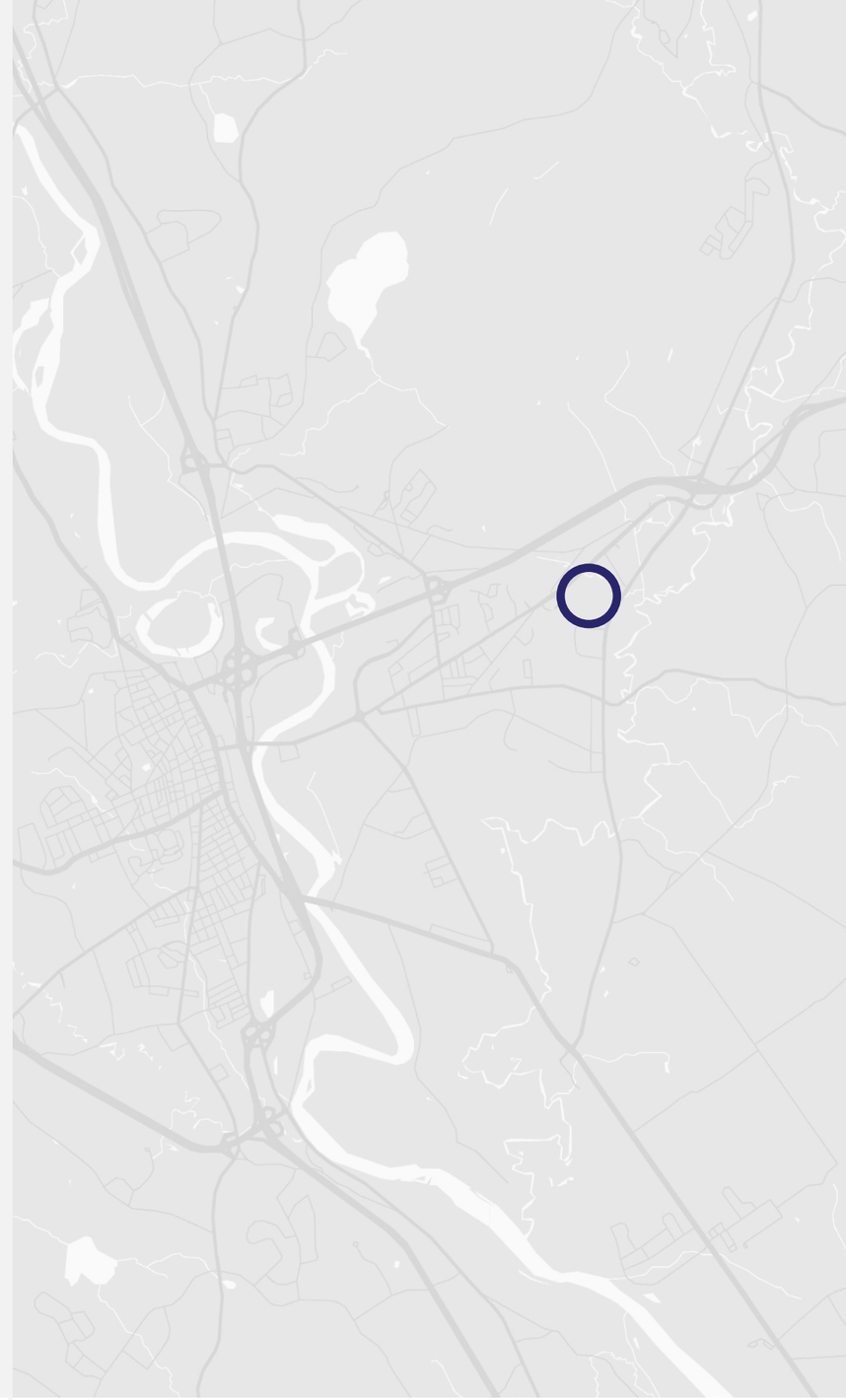
**ONYX PARTNERS LTD**

PLANNING BOARD

# 270 LOUDON RD

CONCORD, NH 03301



EMBARC

NOVEMBER 20, 2024


## SITE PLAN - AXONOMETRIC VIEW

R1 RESIDENTIAL 5 STORIES 170 UNITS 82 PARKING BELOW

R2 RESIDENTIAL 5 STORIES 310 UNITS 176 PARKING BELOW

R3 RESIDENTIAL 5 STORIES 120 UNITS 100 PARKING BELOW

RETAIL 3,000 SF

RETAIL 10,000 SF

RETAIL 35,000 SF

PROPOSED PARK

R3

EXISTING SITE ENTRANCE

EXISTING SITE ENTRANCE

PROPOSED PARK

RETAIL 173,000 SF

COURTYARD

COURTYARD

R2

R2

EXISTING RETAIL

LOUDON RD

SHEEP DAVIS RD

RETAIL GAS

EXISTING RETAIL

EXISTING JC Penny 61,880 SF

R1

COURTYARD

GROUND LEVEL RETAIL 10,000 SF

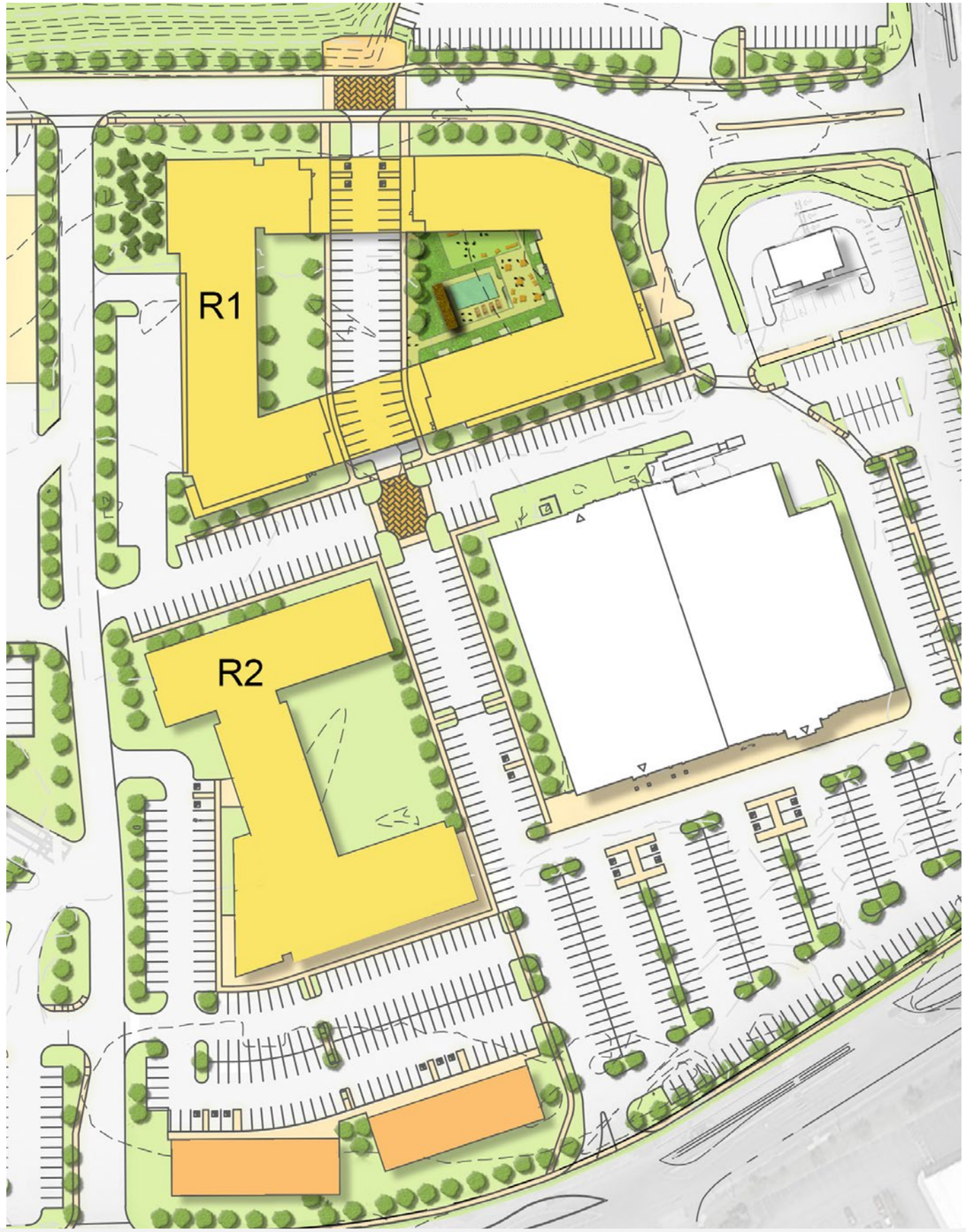
EXISTING MALL 35,000 SF 35,191 SF

RETAIL

RETAIL

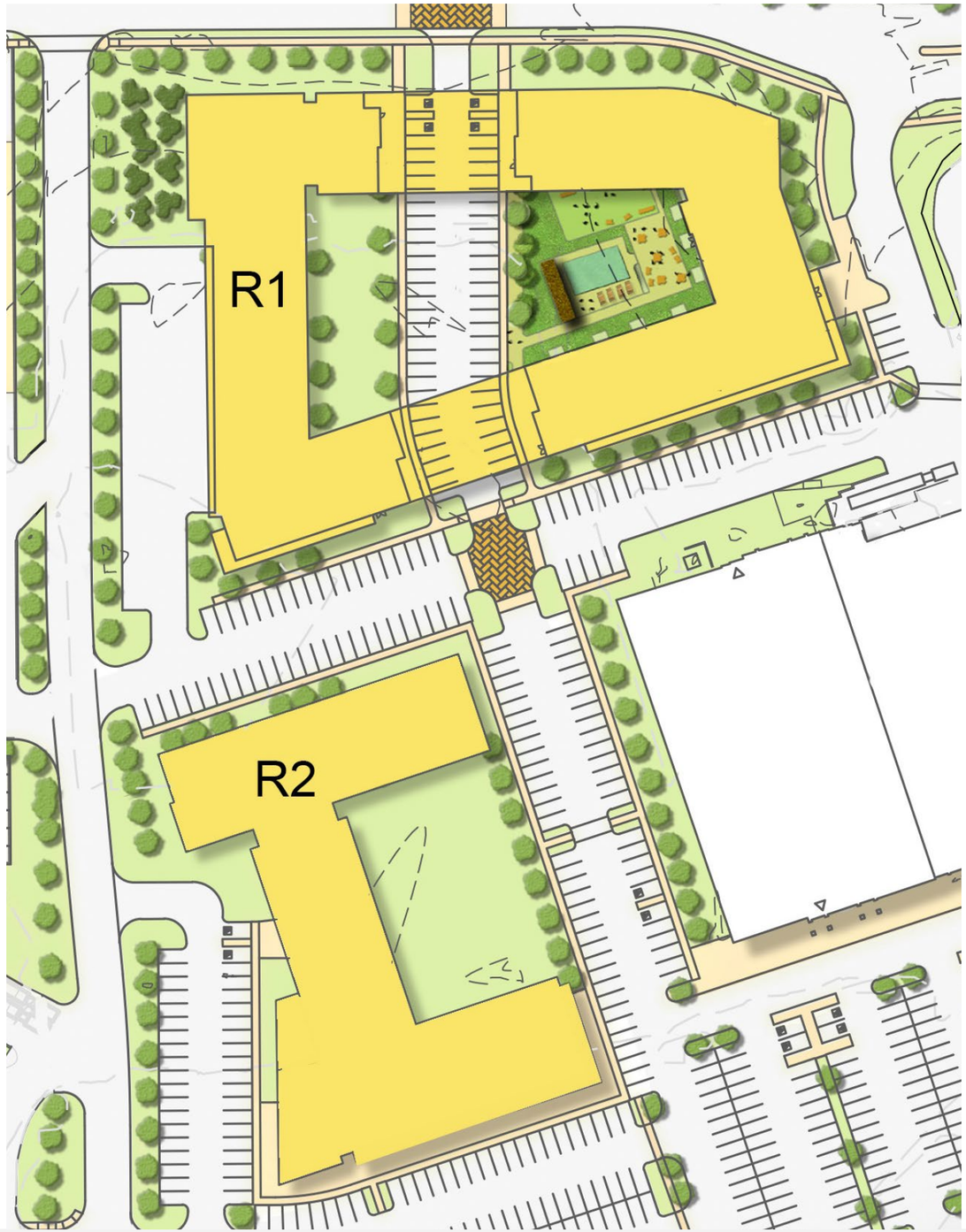
D'AMANTE DRIVE

# PROPOSED SITE PLAN

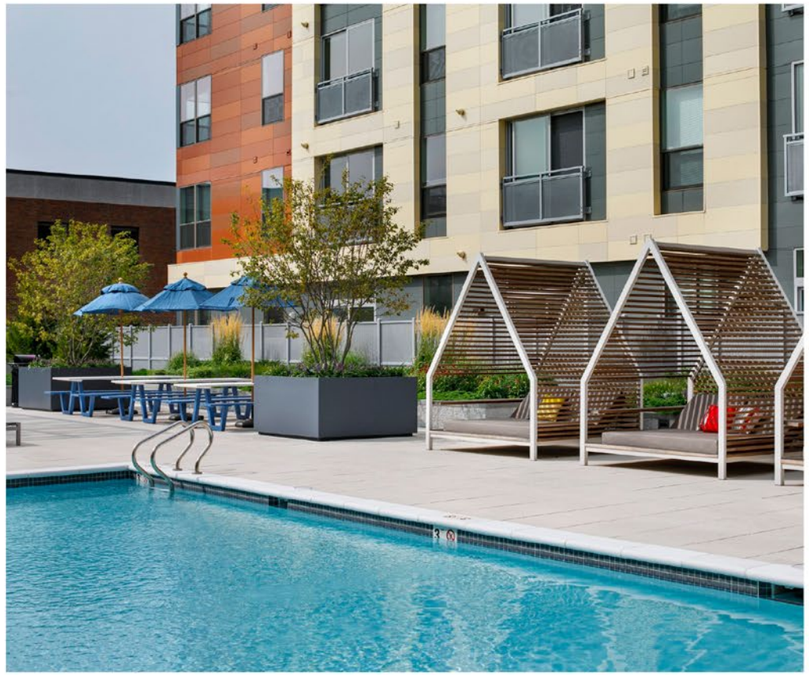



## STREETSCAPES

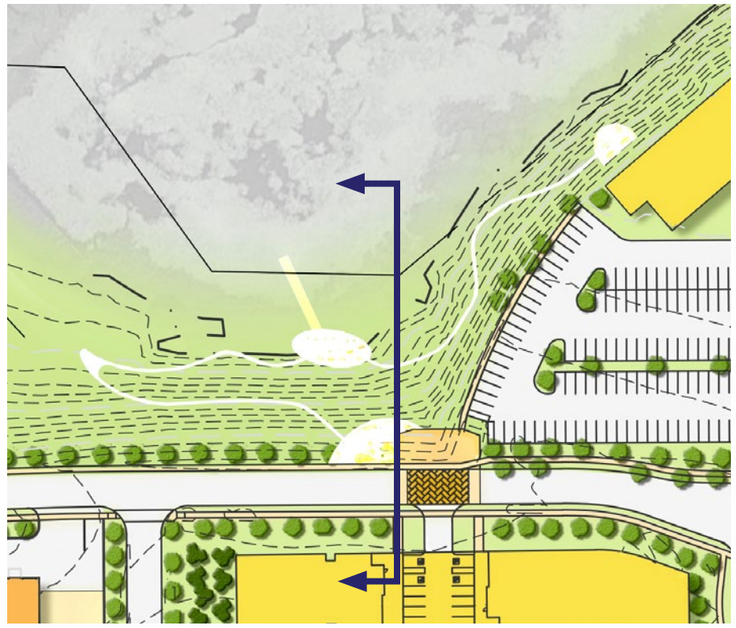

## OPEN SPACE CONCEPTS



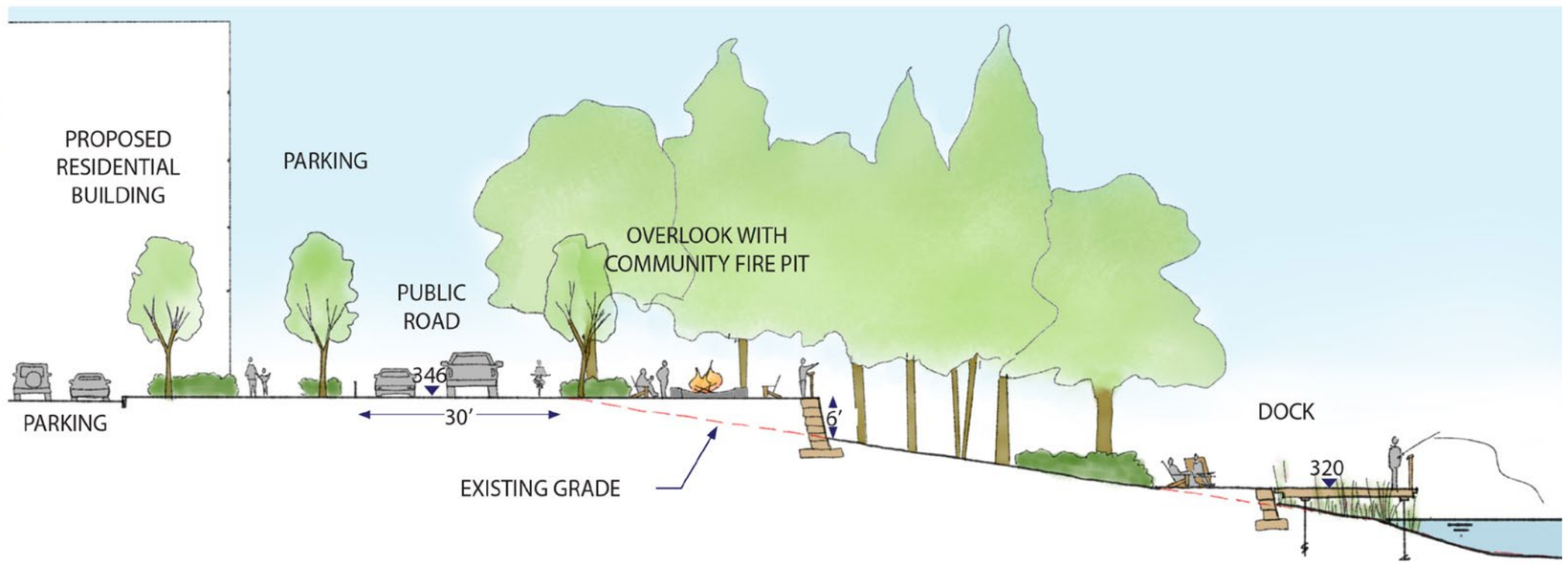

## COURTYARDS

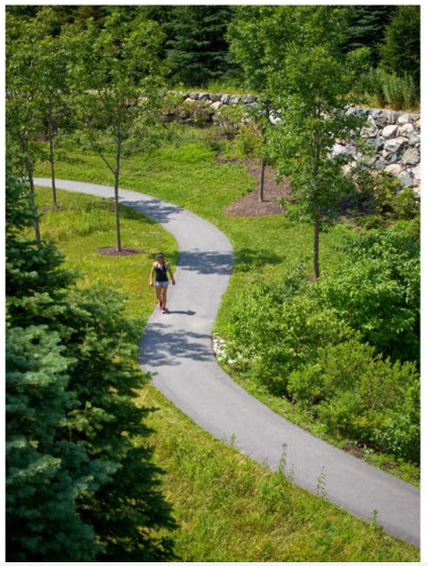


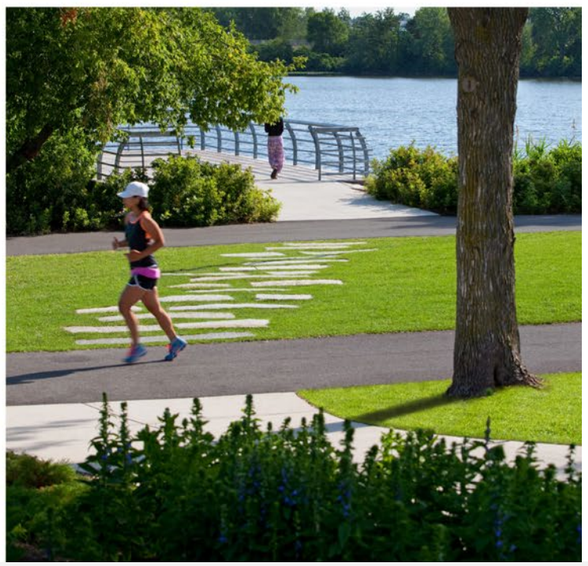
## OPEN SPACE CONCEPTS



## WATERFRONT PARK

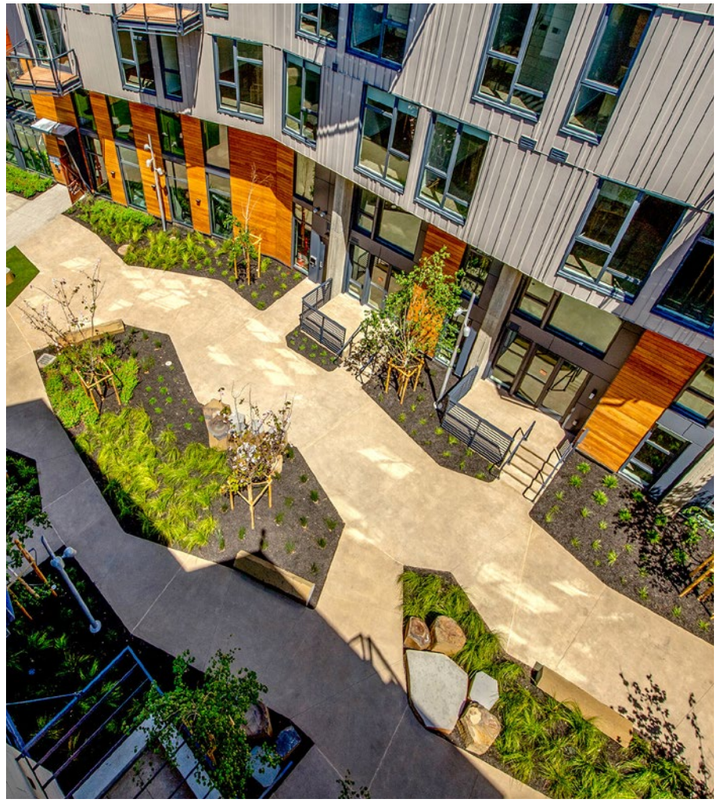


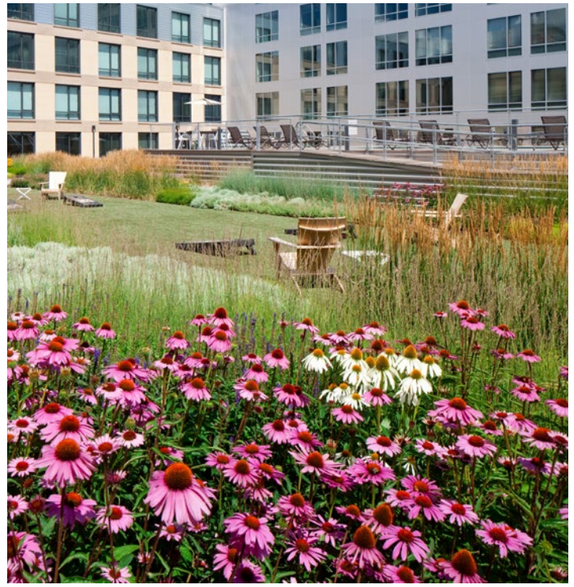



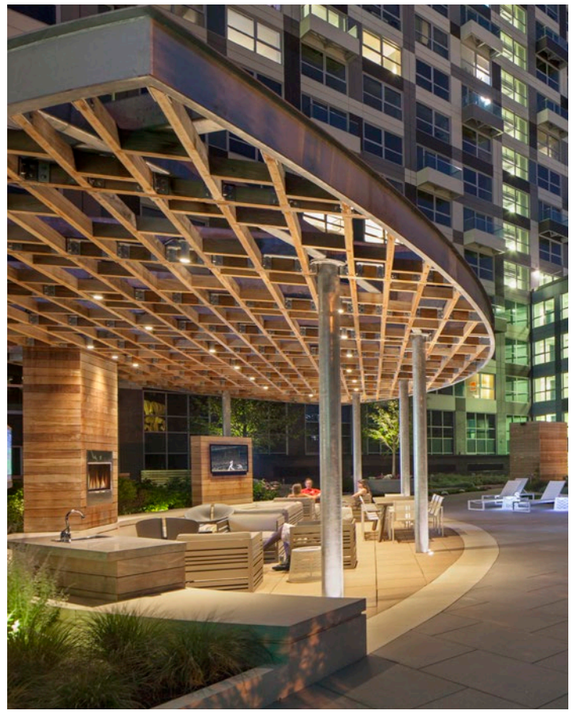


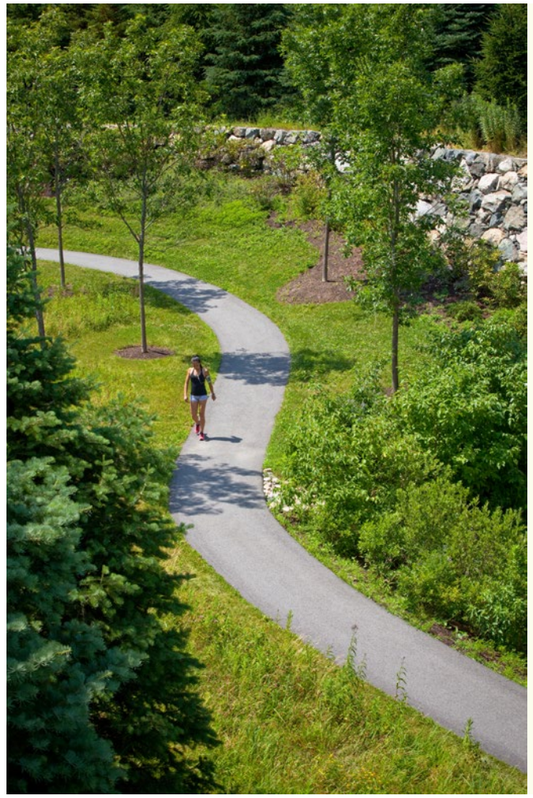
## OPEN SPACE CONCEPTS

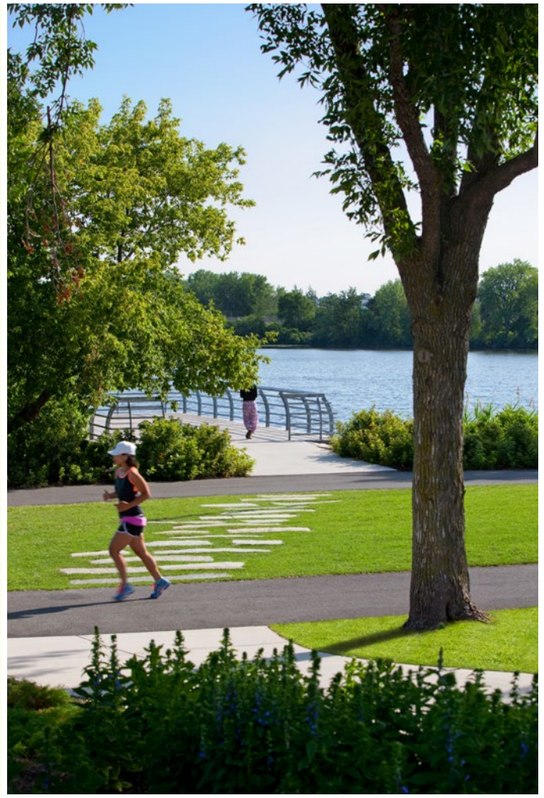

BATH
&BODY







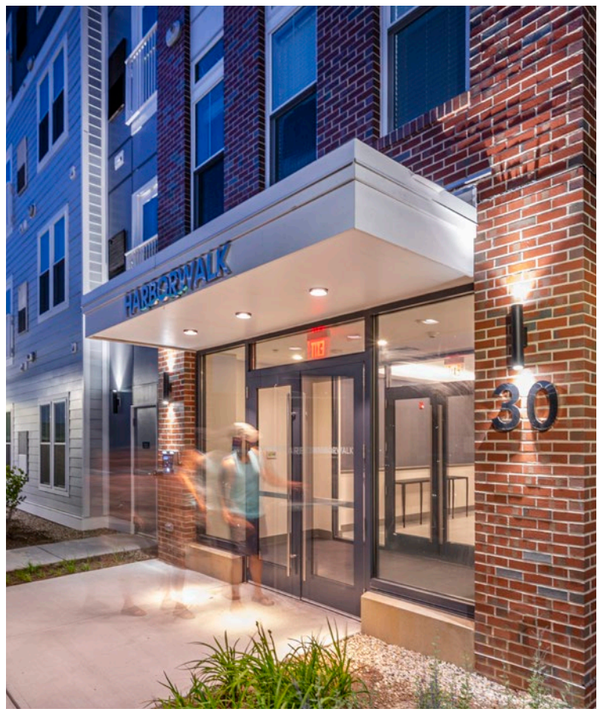




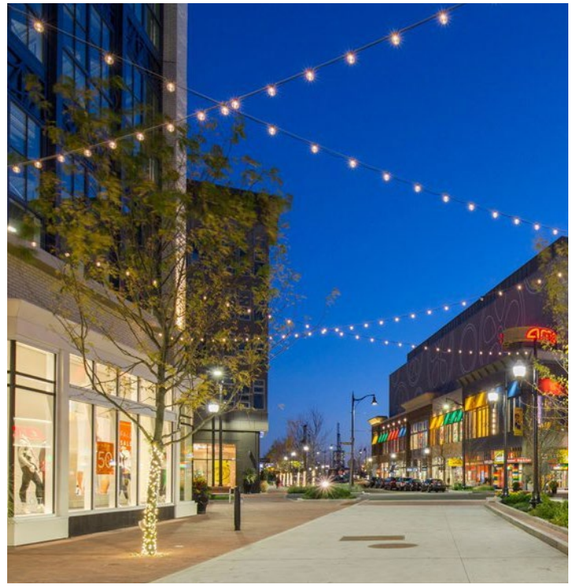

BURGERS


Besaws
Besaws


Hampton Inn & Suites
Hampton Inn


HARBORWALK
30


THE BOATHOUSE
THE BOATHOUSE




SIGNAGE


COCHECHO RIVER WATERFRONT PARK


BORETUM ROAD

# COMPREHENSIVE DEVELOPMENT PLAN
# "STEEPLEGATE & REGAL REDEVELOPMENTS"
## TAX MAP 611Z, LOTS 39, 40-1, 40-2, 40-3, 40-4 & 41
## LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

811 Know what's **below** **811** before you dig

### GENERAL LEGEND

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| | | PROPERTY LINES |
| | | SETBACK LINES |
| | | CENTERLINE |
| | | FRESHWATER WETLANDS LINE |
| | | TIDAL WETLANDS LINE |
| | | STREAM CHANNEL |
| | | TREE LINE |
| | | STONEWALL |
| | | BARBED WIRE |
| | | FENCE |
| | | STOCKADE FENCE |
| | | SOIL BOUNDARY |
| | | AQUIFER PROTECTION LINE |
| | | FLOOD PLAIN LINE |
| | | ZONELINE |
| | | EASEMENT |
| 100 | 100 | MAJOR CONTOUR |
| 98 | 98 | MINOR CONTOUR |
| VGC / SGC / CCB | VGC / SGC / CCB | EDGE OF PAVEMENT |
| | | CURBING |
| | | SILT FENCE |
| D | D | DRAINAGE LINE |
| S | S | SEWER LINE |
| FM | FM | SEWER FORCE MAIN |
| G | G | GAS LINE |
| W | W | WATER LINE |
| WS | WS | WAR SERVICE |
| OHE | OHE | OVERHEAD ELECTRIC |
| UGE | UGE | UNDERGROUND ELECTRIC |
| | | GUARDRAIL |
| UD | UD | UNDERDRAIN |
| F | F | FIRE PROTECTION LINE |
| | W | THRUST BLOCK |
| | | IRON PIPE/IRON ROD |
| | | DRILL HOLE |
| | | IRON ROD/DRILL HOLE |
| | | STONE/GRANITE BOUND |
| 100x0 100.00 | 100x0 100.00 | SPOT GRADE |
| | | PAVEMENT SPOT GRADE |
| 100.00 99.50 | 100.00 99.50 | CURB SPOT GRADE |
| | | BENCHMARK (TBM) |
| | | DOUBLE POST SIGN |
| | | SINGLE POST SIGN |
| | | WELL |
| | | TEST PIT |
| | | FAILED TEST PIT |
| | | MONITORING WELL |
| | | PERC TEST |
| | | PHOTO LOCATION |
| | | TREES AND BUSHES |
| | | UTILITY POLE |
| | | LIGHT POLES |
| | | DRAIN MANHOLE |
| | | SEWER MANHOLE |
| | | HYDRANT |
| | | WATER GATE |
| | | WATER SHUT OFF |
| | | REDUCER |
| | | SINGLE GRATE CATCH BASIN |
| | | DOUBLE GRATE CATCH BASIN |
| | | TRANSFORMER |
| | | CULVERT W/WINGWALLS |
| | | CULVERT W/FLARED END SECTION |
| | | CULVERT W/STRAIGHT HEADWALL |
| | | STONE CHECK DAM |
| | | DRAINAGE FLOW DIRECTION |
| | | RIPRAP |
| | | PAVEMENT HATCH |
| | | FRESHWATER WETLANDS |
| | | STABILIZED CONSTRUCTION ENTRANCE |
| | | CONCRETE |
| | | GRAVEL |
| | | SNOW STORAGE |
| | | RETAINING WALL |

### APPLICANT / OWNER
ONYX STEEPLEGATE CONCORD, LLC
ONYX REGAL CONCORD, LLC
220 RESERVOIR STREET
SUITE 3
NEEDHAM, MA 02494
(603) 617-448-7948
CONTACT: DOUG RICHARDSON

### CIVIL ENGINEER / SURVEYOR
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746

CONTACT: WAYNE MORRILL
EMAIL: WMORRILL@JONESANDBEACH.COM

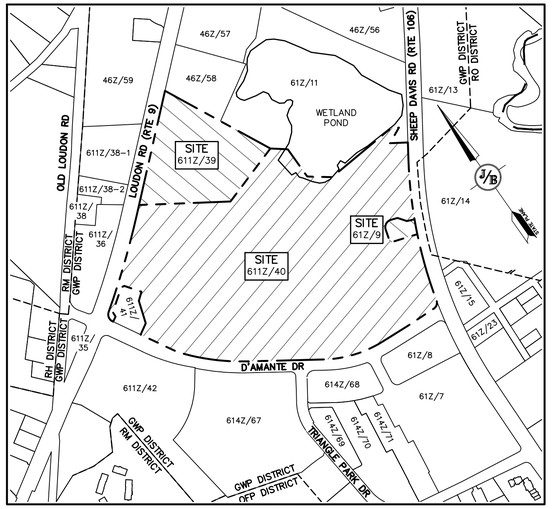
CONTACT: IAN MACKINNON, P.E.
EMAIL: IMACKINNON@JONESANDBEACH.COM

### TRAFFIC ENGINEER
VANASSE & ASSOCIATES, INC.
10 N.E. BUSINESS CENTER DRIVE, SUITE 314
ANDOVER, MA 01810
(978) 474-8800
CONTACT: JEFFREY DIRK, P.E.

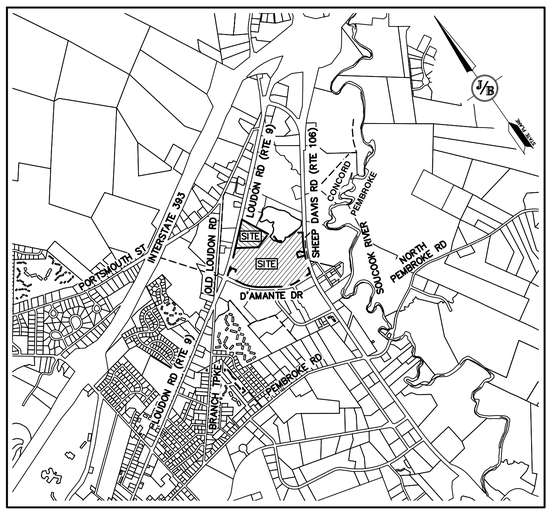
### WETLAND CONSULTANT
WEST ENVIRONMENTAL, INC.
122 MAST ROAD, SUITE 6
LEE, NH 03824
(603) 659-0416
CONTACT: MARK WEST, CWS

### ARCHITECT
EMBARC DESIGN
580 HARRISON AVE
SUITE 2W
BOSTON, MA 02118
(617) 765-8000
CONTACT: ROBERT DEL SAVIO, RA

### LANDSCAPE ARCHITECT
COPLEY WOLF
10 POST OFFICE SQUARE
SUITE 1315
BOSTON, MA 02109
(617) 654-9000
CONTACT: JENNIFER MARTEL, ASLA, PLA




LOCUS MAP
SCALE 1" = 500'




VICINITY MAP
SCALE 1" = 2000'

### SHEET INDEX



### PERMITS

| TYPE OF PERMIT | STATUS |
|---|---|
| **CONCORD PLANNING BOARD APPROVAL: COMPREHENSIVE DEVELOPMENT APPLICATION** | SUBMITTED: |
| CITY OF CONCORD PLANNING BOARD<br>41 GREEN STREET<br>CONCORD, NEW HAMPSHIRE 03301<br>(603) 225-8515<br>RESPONSIBLE CONSULTANT:<br>JONES & BEACH ENGINEERS, INC. | PERMIT NO.<br><br><br><br><br>DATED:<br><br>EXPIRATION: |
| **NHDOT DRIVEWAY PERMIT:** | SUBMITTED: |
| NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, DISTRICT SIX<br>P.O. BOX 740<br>DURHAM, NEW HAMPSHIRE 03824<br>(603) 868-1133<br>RESPONSIBLE CONSULTANT-<br>VANESSE & ASSOCIATES, INC. | PERMIT NO.<br><br><br>DATED:<br><br>EXPIRATION: |

**PROJECT PARCELS**
CITY OF CONCORD
TAX MAP 611Z, LOTS 39 & 40
TAX MAP 61Z, LOT 9

**APPLICANT/OWNER**
ONYX STEEPLEGATE CONCORD, LLC
ONYX REGAL CONCORD, LLC
ONYX TD CONCORD, LLC
220 RESERVOIR STREET,SUITE 3
NEEDHAM, MA 02494

**LOT 39 AREA**
396,960 SQ. FT.
9.11 ACRES
**LOT 40 AREA**
2,186,385 SQ. FT.
50.19 ACRES

| | |
|---|---|
| Design: ISM | Draft: GAP |
| Checked: WGM | Scale: AS NOTED |
| Drawing Name: 23031-PLAN_CDP.dwg | |

Date: 11/20/24
Project No.: 23031



STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – EWEN I. MACKINNON No.16659 LICENSED
11/20/2024

| REV. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| 0 | 11/20/24 | ISSUED FOR REVIEW | ISM |


Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
*Civil Engineering Services*
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM


Plan Name: COVER SHEET
Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH
Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
CS
SHEET 1 OF 17
JBE PROJECT NO. 23031

COMPREHENSIVE DEVELOPMENT PLAN, LOUDON ROAD & SHEEP DAVIS ROAD
JBE # 23031

## IMPACTED STUDIES REQUIRED:

DRAINAGE STUDY: A DRAINAGE STUDY WILL BE COMPILED AND PROVIDED TO THE PLANNING BOARD AS PART OF THE FUTURE SITE PLAN & SUBDIVISION APPLICATIONS.

WETLAND STUDY: A WETLANDS REPORT ADDRESSING THE FUNCTIONS & ASSESSMENT OF THE ADJACENT WETLAND IS IN PROCESS AND WILL BE PROVIDED AS PART OF FUTURE APPLICATIONS TO THE PLANNING BOARD. THE WETLANDS HAVE BEEN DELINEATED BY MARK WEST, CWS IN SEPTEMBER 2023

TRAFFIC STUDY: THE TRAFFIC IMPACT ASSESSMENT FOR THE PROJECT HAS BEEN COMPLETED BY VANESSE & ASSOCIATES AND IS CURRENT UNDER REVIEW BY THE CITY AND NHDOT.

WATER/SEWER STUDY: THE DEVELOPMENT TEAM IS WORKING WITH THE CITY'S CONSULTING ENGINEER, WRIGHT-PIERCE, ON THE AREA SEWER STUDY IN CONJUNCTION WITH THEIR DESIGN & PLANNING OF THE CITY'S NEW SEWER LIFT STATION.

## PROJECT PHASING:

PHASE 1: PHASE 1 CONSISTS OF THE CONTINUED DEMOLITION OF THE MALL SECTIONS THAT REMAIN AND ARE INTENDED TO BE REDEVELOPED. IT'S EXPECTED THAT THIS PHASE WILL INCLUDE THE REMOVAL OF FOUNDATIONS AND INITIAL EARTH WORK TO LOWER THE GRADE WITHIN THE EXISTING MALL'S FOOTPRINT. THIS EXCAVATED MATERIAL WILL BE PLACED ON LOT 39. IT'S LIKELY THIS PHASE WILL ALSO CONSIST OF SOME INITIAL UTILITY WORK COORDINATED WITH THE CITY'S EFFORTS TO BUILD A NEW SEWER LIFT STATION. BASED ON THE CURRENT SCHEDULE, THIS PHASE IS EXPECTED TO BEGIN IN SPRING 2025.

PHASE 2: PHASE 2 CONSISTS OF THE ROADWAY AND INFRASTRUCTURE WORK RELATED TO ROAD #1 & ROAD #2, THE CONSTRUCTION OF THE PROPOSED WHOLESALE RETAIL ON LOT 40, AND CONTINUED EARTHWORK AND CONSTRUCTION OF THE PROPOSED RETAIL & BANK USES ON LOT 39. THE PROPOSED OFF-SITE IMPROVEMENTS WILL BE CONSTRUCTED DURING THIS PHASE IS EXPECTED TO BEGIN SUMMER 2025.

PHASE 3: THIS PHASE CONSISTS OF THE 120-UNIT RESIDENTIAL DEVELOPMENT ON LOT 40-3.

PHASE 4: THIS PHASE CONSISTS OF THE 170-UNIT AND 310-UNIT RESIDENTIAL DEVELOPMENTS AND NEW RETAIL STRUCTURE ON LOT 40-2. PARKING LOT IMPROVEMENTS ASSOCIATED WITH THE TWO EXISTING STRUCTURES WILL ALSO BE COMPLETED.

## ZONING VARIANCES GRANTED:

ARTICLE 28-4-1(h), TABLE OF DIMENSIONAL REGULATIONS, MAXIMUM HEIGHT, TO ALLOW A MAXIMUM HEIGHT OF 59-FEET 8-INCHES WHERE 45' IS ALLOWED

ARTICLE 28-2-4(j), TABLE OF PRINCIAPL AND ACCESSORY USES, TO ALLOW A TIRE CENTER (J-8) WHERE PROHIBITED IN A GWP.

ARTICLE 28-4-1(c), TABLE OF DIMENSIONAL REGULATIONS, MINIMUM LOT FRONTAGE, TO ALLOW FRONTAGE TO BE CALCULATED BASED ON THE COMBINATION OF FRONTAGES OF A CORNER LOT RATHER THAN THE CALCULATION ALONG "ONE" STREET AS REQUIRED.

ARTICLE 28-4-1(h), TABLE OF DIMENSIONAL REGULATIONS, MAXIMUM LOT COVERAGE, TO ALLOW 91% COVERAGE WHERE 85% IS ALLOWED.

ARTICLE 28-7-7(f), DRIVEWAY WIDTHS, TO ALLOW A 30' DRIVEWAY WIDTH WHERE 28-FEET IS THE MAXIMUM.

ARTICLE 28-7-7(j), ILLUMINATION OF PARKING AREAS, TO ALLOW LIGHT POSTS AT 36-FEET AND 6-INCHES IN HEIGHT WHERE 25-FEET IS THE MAXIMUM.

ARTICLE28-7-13(c), DESIGN STANDARDS FOR LANDING SPACES, TO ALLOW 12-FEET WIDE LOADING SPACES WHERE 14-FEET IS THE MINIMUM.

ARTICLE 28-7-14(e), SCREENING OF REFUSE CONTAINERS, TO NOT SCREEN TRASH COMPACTORS WHERE SCREENING AROUND THREE SIDES IS REQUIRED.

ARTICLE 28-7-2(e), TABLE OF OFF-STREET PARKING REQUIREMENTS, TO ALLOW FEWER SPACES THAN REQUIRED.

a. LOT 40 AND 40-1 (COSTCO/JC PENNEY) 943 SPACES WHERE 1131 ARE REQUIRED.
b. LOT 40-2 (MIXED-USE RESIDENTIAL/FITNESS/RECREATIONAL/RETAIL) 1019 SPACES WHERE 2,055 ARE REQUIRED; AND
c. LOT 41 (APPLEBEE'S RESTAURANT) 56 SPACES WHERE 68 ARE REQUIRED.

ARTICLE 28-7-11(b), ALTERNATIVE PARKING ARRANGEMENTS, CONSTRUCTION OF FEWER PARKING SPACES, TO ALLOW THE PLANNING BOARD TO AUTHORIZE THE CONSTRUCTION OF FEWER PARKING SPACES ON LOT 40 AND 40-1 (COSTCO/JC PENNEY), WITHOUT "SHOWING THAT A SUFFICIENT LAND AREA IS ALLOCATED AND SHOWN ON A SITE PLAN FOR THE FULL NUMBER OF SPACES REQUIRED."

| | | |
|---|---|---|
| Design: ISM | Draft: GAP | Date: 11/20/24 |
| Checked: WGM | Scale: AS NOTED | Project No.: 23031 |
| Drawing Name: 23031-PLAN_CDP.dwg | | |



STATE OF NEW HAMPSHIRE – EWEN I. MACKINNON No.16659 – LICENSED PROFESSIONAL ENGINEER

11/20/2024

| REV. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| 0 | 11/20/24 | ISSUED FOR REVIEW | ISM |

Designed and Produced in NH

Jones & Beach Engineers, Inc.

85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

*Civil Engineering Services*

603-772-4746

E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: GENERAL NOTES

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

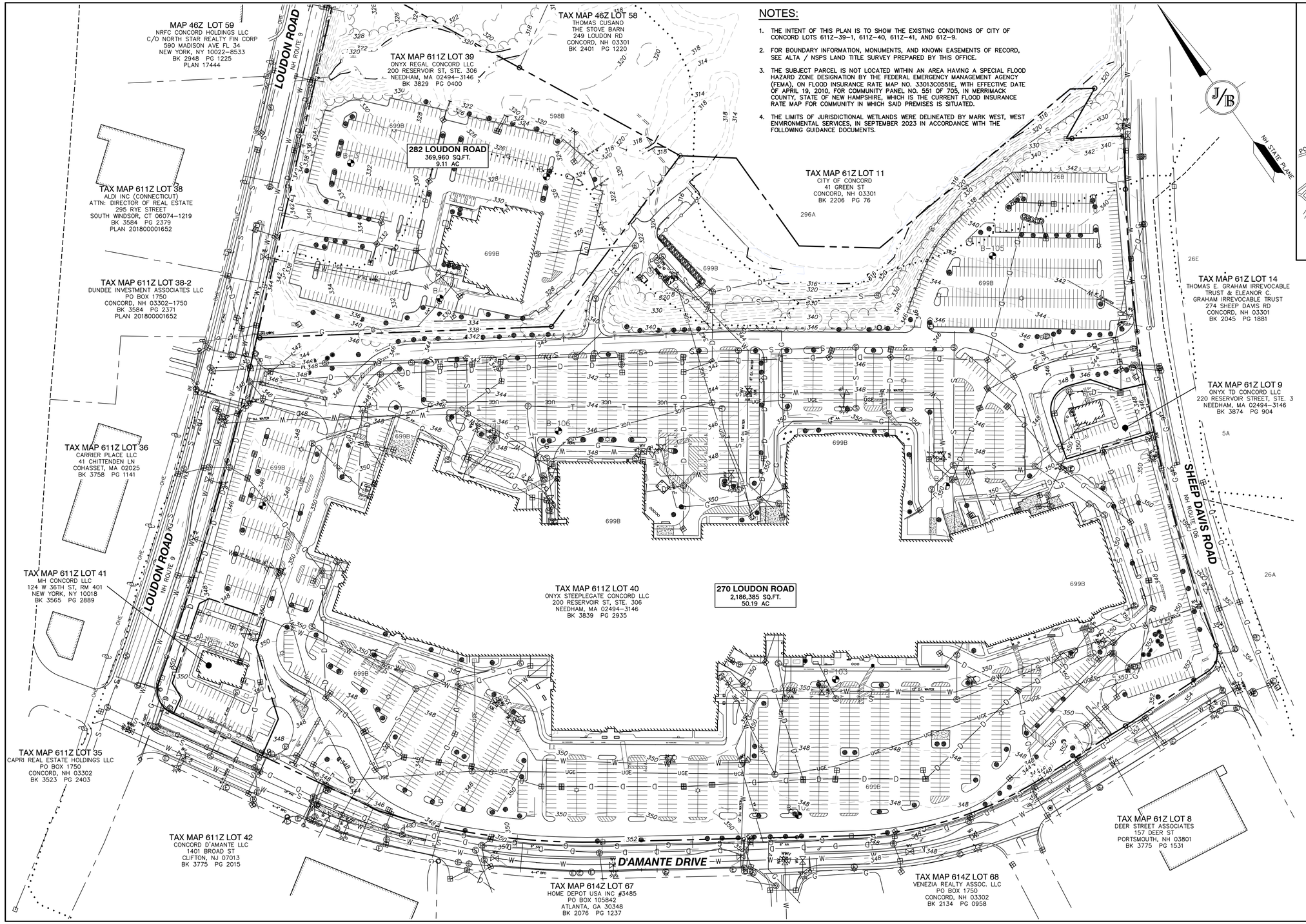
Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.

G1

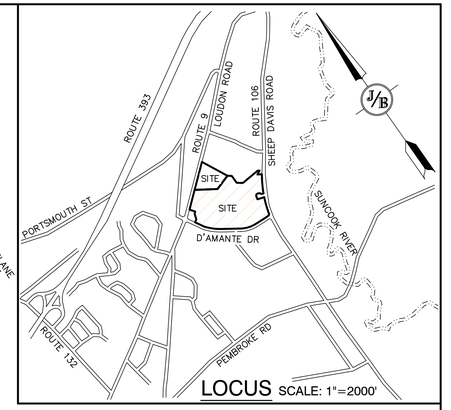


JBE PROJECT NO. 23031




## NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF CITY OF CONCORD LOTS 611Z-39-1, 611Z-40, 611Z-41, AND 61Z-9.
2. FOR BOUNDARY INFORMATION, MONUMENTS, AND KNOWN EASEMENTS OF RECORD, SEE ALTA / NSPS LAND TITLE SURVEY PREPARED BY THIS OFFICE.
3. THE SUBJECT PARCEL IS NOT LOCATED WITHIN AN AREA HAVING A SPECIAL FLOOD HAZARD ZONE DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33013C0551E, WITH EFFECTIVE DATE OF APRIL 19, 2010, FOR COMMUNITY PANEL NO. 551 OF 705, IN MERRIMACK COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
4. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARK WEST, WEST ENVIRONMENTAL SERVICES, IN SEPTEMBER 2023 IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS.




LOCUS SCALE: 1"=2000'

## LEGEND

| EXISTING | DESCRIPTION |
|---|---|
| | PROPERTY LINES |
| | CONDOMINIUM LINES |
| | SETBACK LINES |
| | FRESHWATER WETLANDS LINE |
| | STREAM CHANNEL |
| | TREE LINE |
| | BARBED WIRE |
| | FENCE |
| | STOCKADE FENCE |
| | SOIL BOUNDARY |
| | FLOOD PLAIN LINE |
| | ZONELINE |
| 100 | MAJOR CONTOUR |
| 98 | MINOR CONTOUR |
| VGC | EDGE OF PAVEMENT |
| SGC | VERTICAL GRANITE CURB |
| D | SLOPE GRANITE CURB |
| S | DRAINAGE LINE |
| FM | SEWER LINE |
| G | SEWER FORCE MAIN |
| W | GAS LINE |
| WS | WATER LINE |
| OHE | WATER SERVICE |
| UGE | OVERHEAD ELECTRIC |
| | UNDERGROUND ELECTRIC |
| | GUARDRAIL |
| | IRON PIPE/IRON ROD |
| | DRILL HOLE |
| | STONE/GRANITE BOUND |
| IP | IRON PIPE |
| IR | IRON ROD |
| DH | IRON ROD |
| BND | BOUND |
| | BENCHMARK (TBM) |
| | DOUBLE POST SIGN |
| | SINGLE POST SIGN |
| | TREES AND BUSHES |
| | UTILITY POLE |
| | GUY WIRE ANCHOR |
| | UTILITY SUPPORT POLE |
| | LIGHT POLES |
| D | DRAIN MANHOLE |
| S | SEWER MANHOLE |
| | HYDRANT |
| | WATER GATE |
| | WATER SHUT OFF |
| GV | FIRE DEPARTMENT CONNECTION |
| | GAS GATE VALVE |
| | GAS METER |
| | SINGLE GRATE CATCH BASIN |
| | DOUBLE GRATE CATCH BASIN |
| | TRANSFORMER |
| | ELECTRIC METER |
| D | CULVERT W/WINGWALLS |
| D | CULVERT W/FLARED END SECTION |
| D | CULVERT W/STRAIGHT HEADWALL |
| | DRAINAGE FLOW DIRECTION |
| | FRESHWATER WETLANDS |
| | CONCRETE |
| | GRAVEL |
| | RETAINING WALL |

GRAPHIC SCALE

100 0 50 100 200 400

( IN FEET )
1 inch = 100 feet

| | | |
|---|---|---|
| Design: WGM | Draft: MJS | Date: 3/16/23 |
| Checked: WGM | Scale: AS NOTED | Project No.: 23031 |
| Drawing Name: 23031-EX-CONDITIONS.dwg | | |



STATE OF NEW HAMPSHIRE — No. 1030 — MATTHEW J. SALVUCCI — LAND SURVEYOR — SIGNATURE

| REV. | DATE | REVISION | BY |
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Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: OVERALL EXISTING CONDITIONS PLAN

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, NEEDHAM, MA 02494

DRAWING No.
C1
SHEET 1 OF 9
JBE PROJECT NO. 23031

## LOT AREAS:

MAP 611Z/LOT 39 (282 LOUDON ROAD)
TOTAL LOT AREA = 396,960 SQ.FT. = 9.113 AC
TOTAL WETLAND AREA = 20,859 SQ.FT. = 0.479 AC
TOTAL BUILDABLE AREA = 376,101 SQ.FT. = 8.634 AC
TOTAL IMPERVIOUS AREA =
TOTAL BUILDING AREA =

MAP 611Z/LOT 40 (270 LOUDON ROAD)
TOTAL LOT AREA = 2,186,385 SQ.FT. = 50.192 AC
TOTAL WETLAND AREA = 40,787 SQ.FT. = 0.936 AC
TOTAL BUILDABLE AREA = 2,145,598 SQ.FT. = 49.256 AC
TOTAL IMPERVIOUS AREA =
TOTAL BUILDING AREA =

MAP 611Z/LOT 41
TOTAL LOT AREA = XX,XXX SQ.FT. = 1.01 AC
TOTAL WETLAND AREA =
TOTAL BUILDABLE AREA =
TOTAL IMPERVIOUS AREA =
TOTAL BUILDING AREA =

MAP 61Z/LOT 9
TOTAL LOT AREA = XX,XXX SQ.FT. = 0.56 AC
TOTAL WETLAND AREA =
TOTAL BUILDABLE AREA =
TOTAL IMPERVIOUS AREA =
TOTAL BUILDING AREA =

## NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE BOUNDARY AND EXISTING CONDITIONS OF CITY OF CONCORD LOTS 611Z–39, 611Z–40, 611Z–41 AND 61Z–9.

2. CURRENT OWNERS OF RECORD:

   MAP 611Z/LOT 39 – 282 LOUDON ROAD
   ONYX REGAL CONCORD, LLC
   200 RESERVOIR STREET
   SUITE 306
   NEEDHAM, MA 02494
   BK 3829, PG 400

   MAP 611Z/LOT 40 – 270 LOUDON ROAD
   ONYX STEEPLEGATE CONCORD, LLC
   200 RESERVOIR STREET
   SUITE 306
   NEEDHAM, MA 02494
   BK 3839, PG 2935

   MAP 611Z/LOT 41 – 260 LOUDON ROAD
   MH CONCORD, LLC
   124 WEST 36TH STREET
   ROOM 401
   NEW YORK, NY 10018
   BK 3565, PG 2889

   MAP 61Z/LOT 9 – 277 SHEEP DAVIS ROAD
   ONYX TD CONCORD, LLC
   220 RESERVOIR STREET, STE. 3
   NEEDHAM, MA 02494
   BK 3874, PG 903

3. ZONING DISTRICT: GWP – GATEWAY PERFORMANCE DISTRICT

4. THE FEATURES SHOWN ON THIS PLAT ARE A RESULT OF SURVEY PERFORMED ON THE GROUND IN FEBRUARY AND MARCH 2023. LAST SITE VISIT WAS OCTOBER 2025.
   A. OBSERVATIONS ON THE SUBJECT PREMISES, AS OF THE LAST SITE VISIT HAVE BEEN PLOTTED.
   B. NO EVIDENCE WAS OBSERVED THAT THE SUBJECT PREMISES WERE BEING USED AS A SOLID WASTE DUMP, SUMP, OR SANITARY LANDFILL, AS OF THE LAST SITE VISIT.
   C. NO CEMETERIES WERE OBSERVED ON THE PARCEL SURVEYED.

6. THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE, AND PLANS OF RECORD. LOCATIONS SHOULD BE CONSIDERED APPROXIMATE ONLY. NO SUBSURFACE INVESTIGATION OF UTILITIES WAS PERFORMED. LOCATION, DEPTH, SIZE, TYPE, EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES AND/OR UNDERGROUND STORAGE TANKS WAS NOT VERIFIED BY THIS SURVEY. ALL CONTRACTORS SHOULD NOTIFY IN WRITING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES PRIOR TO ANY EXCAVATION WORK OR CALL DIG–SAFE AT 1–888–DIG–SAFE.

7. THE SUBJECT PARCEL IS NOT LOCATED WITHIN AN AREA HAVING A SPECIAL FLOOD HAZARD ZONE DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33013C0551E, WITH EFFECTIVE DATE OF APRIL 19, 2010, FOR COMMUNITY PANEL NO. 551 OF 705, IN MERRIMACK COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.

8. BASIS OF BEARING: HORIZONTAL – NH STATE PLANE. VERTICAL – NAVD88.

9. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.

10. ALL BOOK AND PAGE NUMBERS REFER TO THE MERRIMACK COUNTY REGISTRY OF DEEDS.

11. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE CITY OF CONCORD TAX RECORDS AND ARE SUBJECT TO CHANGE.

12. RESEARCH WAS PERFORMED AT THE CITY OF CONCORD ENGINEER'S OFFICE, THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, AND THE MERRIMACK COUNTY REGISTRY OF DEEDS.

13. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.

14. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL, TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.

15. JURISDICTIONAL WETLANDS WERE WERE NOT DELINEATED AS A PART OF THIS SURVEY.

16. SURVEY TIE LINES SHOWN HEREON ARE NOT BOUNDARY LINES. THEY SHOULD ONLY BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY THIS SURVEY.

17. DUE TO LARGE SNOW BANKS ON SITE AT THE TIME OF THE SURVEY, A PORTION OF THE DETAIL SHOWN HEREON IS FROM PUBLIC–SOURCE AERIAL IMAGERY. DETAIL WILL BE UPDATED AS AVAILABLE.

18. THE SURVEYED PROPERTY IS UNIT 1 OF THE STEEPLEGATE MALL LAND CONDOMINIUM. A BRICK SIGN LOCATED WITHIN UNIT 2, AND THREE SIGN LOCATIONS WITHIN UNIT 1 ARE COMMON AREA.

19. THERE ARE NO KNOWN PROPOSED CHANGED IN STREET RIGHT OF WAY LINES THAT ABUT THE SURVEYED PROPERTY. THERE ARE SEVERAL RIGHT OF WAY EASEMENTS GRANTED TO THE STATE OF NEW HAMPSHIRE, AND TO THE CITY OF CONCORD THAT ENCUMBER THE SURVEYED PROPERTY ALONG EXISTING PUBLIC WAYS. IT IS THE OPINION OF THIS SURVEY THAT THE LAND UNDER THESE EASEMENTS IS NOT A PART OF THE PUBLIC RIGHT OF WAY, BUT IS STILL A PART OF THE SURVEYED PROPERTY. SEE PLAN REFERENCE 24.

20. THE PROPERTY SURVEYED AND SHOW HEREON IS THE SAME PROPERTY REFERENCED IN COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE COMPANY.

21. THE PROPERTY SURVEYED IS NOT WITHIN A WELLHEAD PROTECTION AREA, AS DEFINED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, AND THERE ARE NO KNOWN PUBLIC WATER SUPPLY WELLS ON SITE.

22. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARK WEST, WEST ENVIRONMENTAL SERVICES, IN SEPTEMBER 2023 IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:

    a. THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.

    b. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.

    c. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.

    d. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.

## PLAN REFERENCES:


1. "SUBDIVISION & CONSOLIDATION PLAN PREPARED FOR ARMANTE R. & IDA P. D'AMANTE AND TRIANGLE PARK ASSOCIATES." DATED MARCH 1, 1988. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 10774.
2. "PRIVATE EASEMENT PREPARED FOR ARMANTE R. & IDA P. D'AMANTE." DATED NOVEMBER 11, 1988. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 10782.
3. "CONSOLIDATION & SUBDIVISION PLAN PREPARED FOR HOMART DEVELOPMENT CO." DATED MARCH 8, 1990. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 11721.
4. "SUBDIVISION BY LEASE, STEEPLEGATE MALL, PREPARED FOR PUB VENTURES OF NEW ENGLAND, INC. RECORD OWNER: HOMART DEVELOPMENT CO." DATED JULY 14, 1992. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 12730.
5. "CONDOMINIUM SITE PLAN OF THE STEEPLEGATE MALL, CONCORD, NH." DATED JUNE 2016. PREPARED BY RICHARD D. BARTLETT & ASSOCIATES, LLC. M.C.R.D. 201600014921.
6. "EXHIBIT A, SLOPE EASEMENT PLAN, LOUDON ROAD, PREPARED FOR HOMART DEVELOPMENT CO., INC." DATED FEBRUARY 2, 1990. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. BOOK 1838 PAGE 1906.
7. "LAND OF HOMART DEVELOPMENT CO., N.H. RTE. 106 EASEMENT PLAN, CONCORD, N.H." DATED FEBRUARY 2, 1990. PREPARED BY HOLDEN ENGINEERING & SURVEYING. M.C.R.D. BOOK 1838, PAGE 1915.
8. "EXHIBIT A, EASEMENT PLAN, SHEEP DAVIS ROAD, PREPARED FOR HO CONCORD LAND CO, INC. DATED DECEMBER 12, 1989. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. BOOK 1838 PAGE 1924.
9. "EXHIBIT A, EASEMENT PLAN, SHEEP DAVIS ROAD, PREPARED FOR ARMANTE R. & IDA P. D'AMANTE." DATED DECEMBER 8, 1989. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 1838 PAGE 1943.
10. "EXHIBIT A, R.O.W. EASEMENT PLAN, LOUDON ROAD, PREPARED FOR HOMART DEVELOPMENT CO., INC." DATED FEBRUARY 2, 1990. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 1838 PAGE 1949.
11. "BOUNDARY PLAN, CANAD CINEMAS, CONCORD, NH." DATED MARCH 13, 1996. PREPARED BY HOLDEN ENGINEERING & SURVEYING. M.C.R.D. 13576.
12. "PLAN OF LAND, J + F MACEACHRAN, CONCORD, NH. DATED OCTOBER 1939. PREPARED BY R. A. FOSTER. M.C.R.C. 906.
13. "EIGHT TRACTS OF LAND ON THE CONCORD PLAINS, PROPERTY OF ARMANTE R. D'AMANTE, CONCORD, N.H." DATED AUGUST 13, 1957. M.C.R.C. 1943.
14. "SURVEY OF THE LAND OF KENNETH H. & MIRIAM A. TILTON, CONCORD, N.H." DATED JANUARY 12, 1987. PREPARED BY HOLDEN ENGINEERING & SURVEYING. M.C.R.D. 10411.
15. "SUBDIVISION PLAN, TRIANGLE PARK, CONCORD. N.H." DATED NOVEMBER 9, 1987. PREPARED BY HOLDEN ENGINEERING & SURVEYING. M.C.R.D. 10526.
16. "SUBDIVISION PLAN, PREPARED FOR HODGES DEVELOPMENT CORPORATION." DATED NOVEMBER 16, 1988. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 10840.
17. "ALTA/ASCM LAND TITLE SURVEY, PREPARED FOR HOMART DEVELOPMENT CO." DATED SEPTEMBER 25, 1989. PREPARED BY ALLAN H. SWANSON, INC. M.C.R.D. 11305.
18. "IMPROVEMENTS PLAN OF LAND PREPARED FOR NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY, CONCORD, N.H." DATED DECEMBER 9, 1991. PREPARED BY HOLDEN ENGINEERING & SURVEYING. M.C.R.D. 12299.
19. "SUBDIVISION BY LEASE, STEEPLEGATE MALL, PREPARED FOR CONCORD SAVINGS BANK, RECORD OWNER HOMART DEVELOPMENT CO." DATED OCTOBER 18, 1993. PREPARED BY ALAN H. SWANSON, INC. M.C.R.D. 12936.
20. "TRACT NO. 4182–G, REAL ESTATE LIMITED PARTNERSHIP, CONCORD, N.H." DATED JANUARY 1982. PREPARED BY ERNEST E. VEINOTTE. M.C.R.D. 13577.
21. "PUBLIC SEWER EASEMENT PLAN, STEEPLEGATE MALL." DATED JULY 16, 1993. PREPARED BY ALAN H. SWANSON, INC. M.C.R.D. 14512.
22. "STORM DRAINAGE AREA / EXISTING WETLAND AREA PLAN." DATED JULY 14, 1992. PREPARED BY ALAN H. SWANSON, INC. M.C.R.D. 14513.
23. "PUBLIC SEWER EASEMENT PLAN, STEEPLEGATE MALL, PREPARED FOR GENERAL GROWTH PROPERTIES, INC. RECORD OWNER GGP–STEEPLEGATE, INC. DATED APRIL 20, 2000. PREPARED BY HSI HAYNER/SWANSON, INC. M.C.R.D. BOOK 2209 PAGE 48.
24. "ALTA / ASCM LAND TITLE SURVEY, STEEPLEGATE MALL, CONCORD, NH." DATED JUNE 25, 2004. PREPARED BY HSI HAYNER/SWANSON, INC. NOT RECORDED.
25. "TRACTS OF LAND ON THE CONCORD PLAINS, ARMANTE R. D'AMANTE." DATED APRIL 10, 1957. PREPARED BY E. N. ROBERTS. CITY OF CONCORD PLAN NO. 586_1.
26. "PROPOSED MINOR SUBDIVISION, ARMANTE R. & IDA P. D'AMANTE. CONCORD, N.H." DATED JULY 26, 1972. PREPARED BY THOMAS F. MORAN INC. CITY OF CONCORD PLAN NO. 586_2.
27. CONSOLIDATION AND SUBDIVISION PLAN FOR THE ROUSE COMPANY." DATED MAY 15, 1979. PREPARED BY ALAN H. SWANSON, INC. CITY OF CONCORD PLAN NOs. 1045_1 & 1045_2.
28. PLANS OF PROPOSED TRANSPORTATION AND ROADWAY IMPROVEMENTS, D'AMANTE DRIVE / LOUDON ROAD / NH ROUTE 106." DATED APRIL 6, 1999. PREPARED BY VANASSE HANGEN BRUSTLIN, INC. CITY OF CONCORD PLAN SET NO 3098.
29. "MASTER PLAN, LOUDON ROAD, CONCORD, N.H., PREPARED FOR MICRO BUSINESS SOFTWARE, INC." DATED MAY 13, 1983. PREPARED BY HAMILTON ENGINEERING ASSOCIATES. CITY OF CONCORD PLAN NO. 4131_1.
30. "SITE PLAN, LOUDON ROAD, CONCORD, N.H., PREPARED FOR MICRO BUSINESS SOFTWARE, INC." DATED JUNE 1983. PREPARED BY HAMILTON ENGINEERING ASSOCIATES. CITY OF CONCORD PLAN NO. 4131_2.
31. "SITE PLAN PHASE I, LOUDON ROAD, CONCORD, N.H., PREPARED FOR REALWORLD" DATED NOVEMBER 18, 1983. PREPARED BY HAMILTON ENGINEERING ASSOCIATES. CITY OF CONCORD PLAN NO. 4131_3.
32. "CONCEPTUAL SITE MASTER PLAN, LOUDON ROAD, CONCORD, N.H., PREPARED REALWORLD" DATED NOVEMBER 1983. PREPARED BY HAMILTON ENGINEERING ASSOCIATES. CITY OF CONCORD PLAN NO. 4131_4.
33. "STEEPLEGATE MALL, HOMART DEVELOPMENT, CITY OF CONCORD, JOB NO. 75658, 75668, 75688. DATED MARCH 1, 1989. ON FILE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
34. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT, PLANS OF PROPOSED FEDERAL AID SECONDARY PROJECT NO. S 21 (2) 0–796 SHEEP DAVIS ROAD. DATED MARCH 10, 1949. ON FILE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
35. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT, PLANS OF PROPOSED FEDERAL AID PROJECT NO. U–40 (7) P–2055 CENTRAL ROAD. DATED JUNE 28, 1945. ON FILE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.


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| Design: WGM | Draft: MJS | Date: 3/16/23 |
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Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
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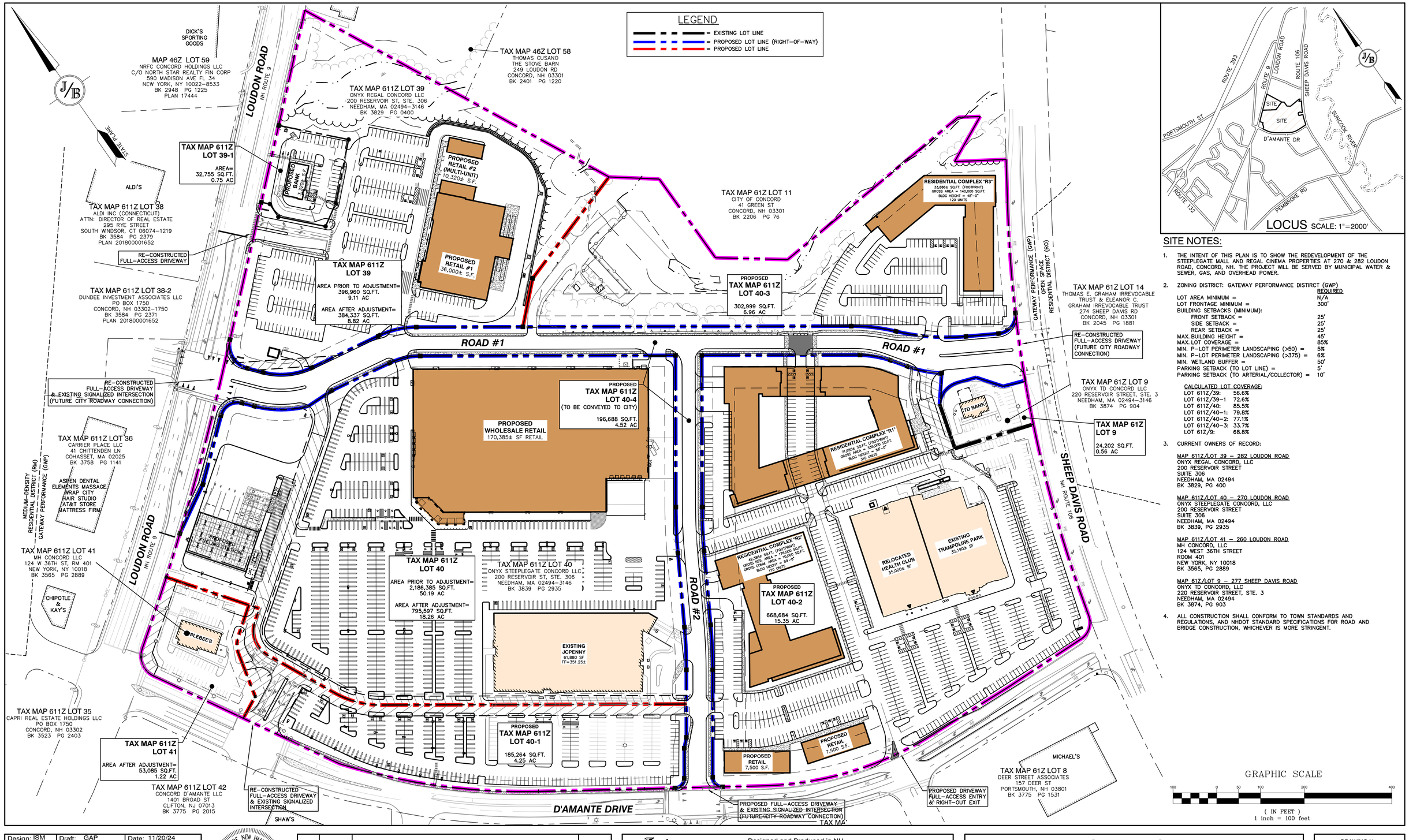
PO Box 219
Stratham, NH 03885
*Civil Engineering Services*
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM


Plan Name: EXISTING CONDITIONS NOTES

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, NEEDHAM, MA 02494

DRAWING No.
C1.7
SHEET 8 OF 9
JBE PROJECT NO. 23031







## SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE REDEVELOPMENT OF THE STEEPLEGATE MALL AND REGAL CINEMA PROPERTIES AT 270 & 282 LOUDON ROAD, CONCORD, NH. THE PROJECT WILL BE SERVED BY MUNICIPAL WATER & SEWER, GAS, AND OVERHEAD POWER.

2. ZONING DISTRICT: GATEWAY PERFORMANCE DISTRICT (GWP)

| | REQUIRED |
|---|---|
| LOT AREA MINIMUM = | N/A |
| LOT FRONTAGE MINIMUM = | 300' |
| BUILDING SETBACKS (MINIMUM): | |
| FRONT SETBACK = | 25' |
| SIDE SETBACK = | 25' |
| REAR SETBACK = | 25' |
| MAX. BUILDING HEIGHT = | 45' |
| MAX. LOT COVERAGE = | 85% |
| MIN. P-LOT PERIMETER LANDSCAPING (>50) = | 5% |
| MIN. P-LOT PERIMETER LANDSCAPING (>375) = | 6% |
| MIN. WETLAND BUFFER = | 50' |
| PARKING SETBACK (TO LOT LINE) = | 5' |
| PARKING SETBACK (TO ARTERIAL/COLLECTOR) = | 10' |

CALCULATED LOT COVERAGE:

| | |
|---|---|
| LOT 611Z/39: | 56.6% |
| LOT 611Z/39-1 | 72.6% |
| LOT 611Z/40: | 85.5% |
| LOT 611Z/40-1: | 79.8% |
| LOT 611Z/40-2: | 77.1% |
| LOT 611Z/40-3: | 33.7% |
| LOT 61Z/9: | 68.8% |

3. CURRENT OWNERS OF RECORD:

MAP 611Z/LOT 39 – 282 LOUDON ROAD
ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET
SUITE 306
NEEDHAM, MA 02494
BK 3829, PG 400

MAP 611Z/LOT 40 – 270 LOUDON ROAD
ONYX STEEPLEGATE CONCORD, LLC
200 RESERVOIR STREET
SUITE 306
NEEDHAM, MA 02494
BK 3839, PG 2935

MAP 611Z/LOT 41 – 260 LOUDON ROAD
MH CONCORD, LLC
124 WEST 36TH STREET
ROOM 401
NEW YORK, NY 10018
BK 3565, PG 2889

MAP 61Z/LOT 9 – 277 SHEEP DAVIS ROAD
ONYX TD CONCORD, LLC
220 RESERVOIR STREET, STE. 3
NEEDHAM, MA 02494
BK 3874, PG 903

4. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.

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| Checked: WGM | Scale: AS NOTED | Project No.: 23031 |
| Drawing Name: 23031-PLAN_CDP.dwg | | |



STATE OF NEW HAMPSHIRE – EWEN I. MACKINNON No.16659 – LICENSED PROFESSIONAL ENGINEER
11/20/2024

| REV. | DATE | REVISION | BY |
|---|---|---|---|
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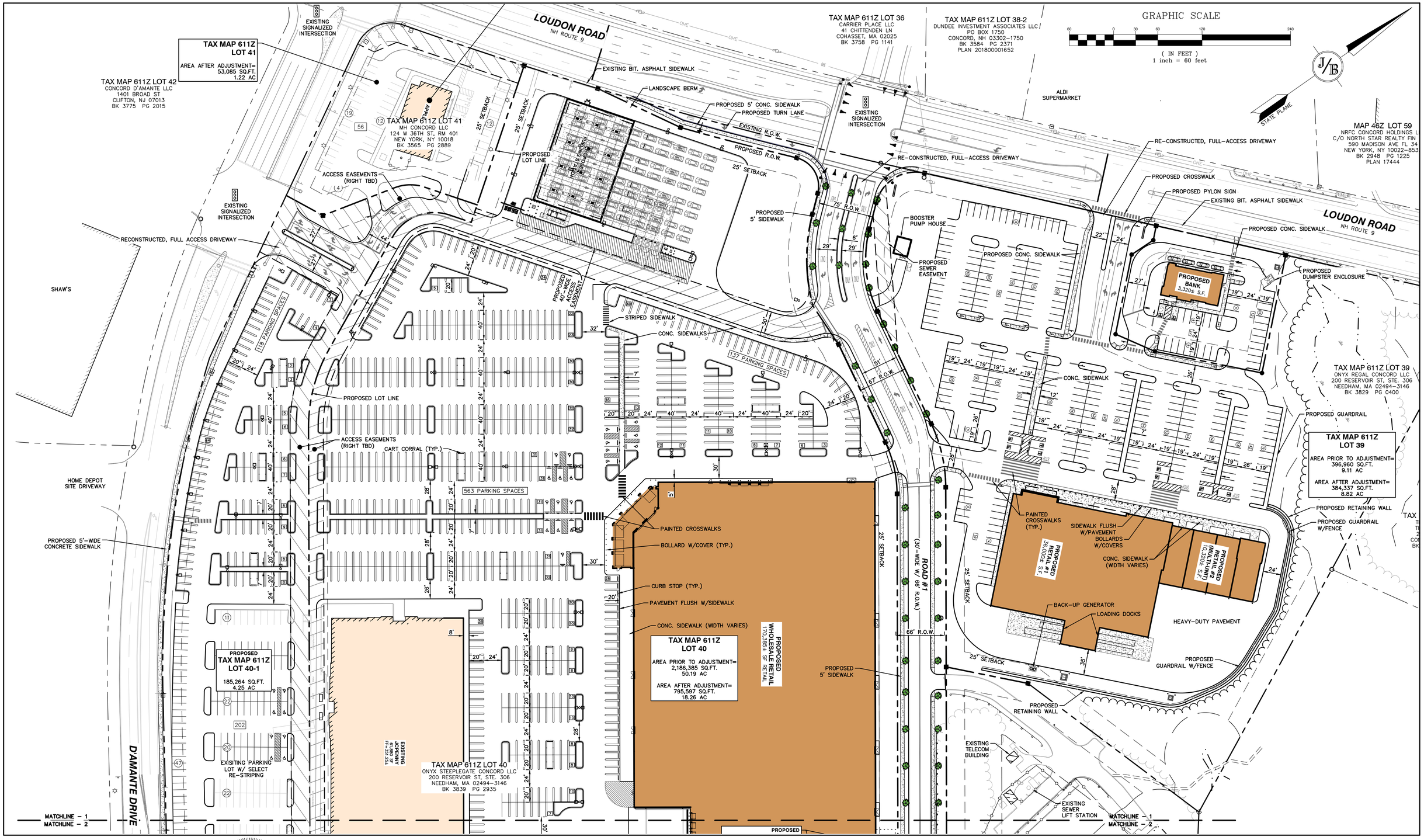
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: OVERALL SITE PLAN

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C2
SHEET 5 OF 17
JBE PROJECT NO. 23031

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| Design: ISM | Draft: GAP | Date: 11/20/24 | |
| Checked: WGM | Scale: AS NOTED | Project No.: 23031 | |
| Drawing Name: 23031-PLAN_CDP.dwg | | | |



STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

| REV. | DATE | REVISION | BY |
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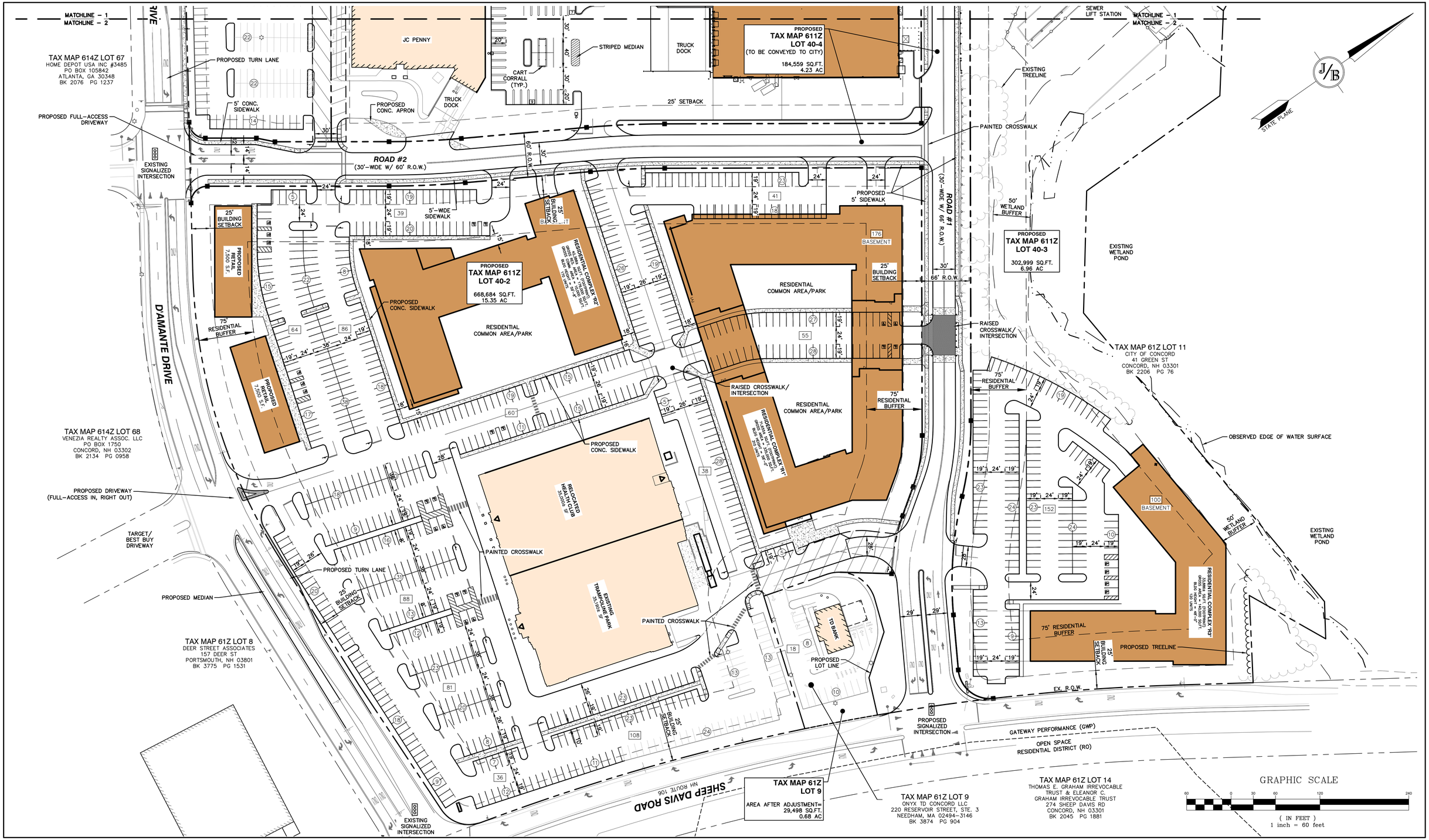
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: SITE PLAN - EAST

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C2.1
SHEET 6 OF 17
JBE PROJECT NO. 23031

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| Design: ISM | Draft: GAP |
| Checked: WGM | Scale: AS NOTED |
| Drawing Name: 23031-PLAN_CDP.dwg | |

Date: 11/20/24
Project No.: 23031



STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

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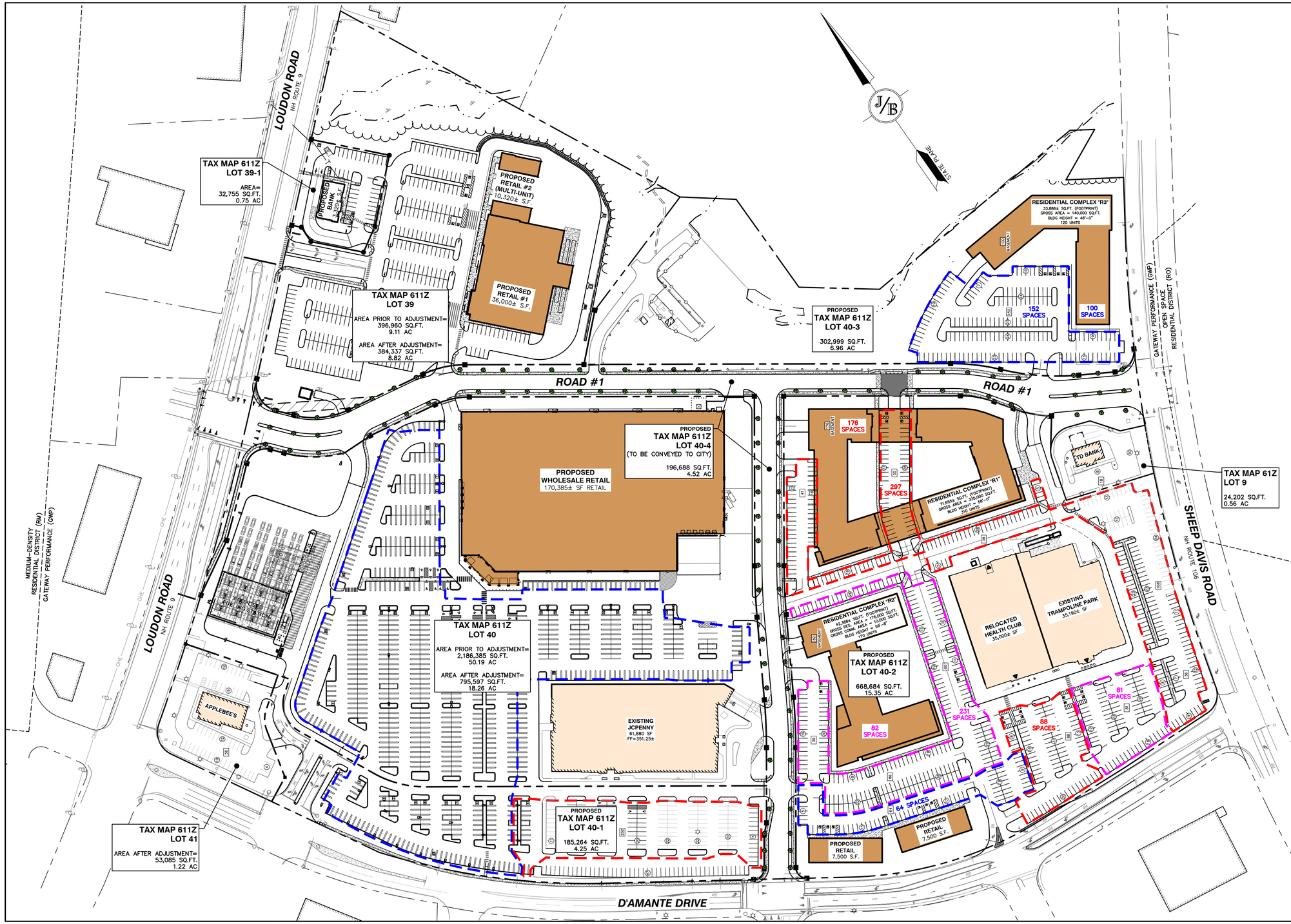
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: SITE PLAN - EAST

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C2.2
SHEET 7 OF 17
JBE PROJECT NO. 23031




## PARKING CALCULATIONS:

REQUIREMENTS BY USE:
RETAIL (<100,000 S.F.) – 1 SPACE/250 G.F.A.
RETAIL (>100,000 S.F.) – 1 SPACE/200 G.F.A.
FUELING STATION – 1 SPACE/FUEL PUMP
RESTAURANT w/o DRIVE–THRU – 1 SPACE/75 G.F.A.
RESTAURANT w/ DRIVE–THRU – 1 SPACE/75 G.F.A. + 11 STACKING SPACES
INDOOR RECREATION FACILITY – 1 SPACE/50 G.F.A.
COMMERCIAL RECREATION COMPLEX (TEAM PLAY) – 1 SPACE/300 G.F.A.
INDOOR HEALTH & FITNESS – 1 SPACE/120 G.F.A.
BANK W/ DRIVE–THRU WINDOW – 1 SPACE/200 G.F.A. + 5 STACKING
RESIDENTIAL (MULTIFAMILY) – 2 SPACES/UNIT

PARKING PROVIDED:

**MAP 61Z/LOT 9:**
EXISTING BANK W/ DRIVE–THRU = 2,275± S.F.
PARKING REQUIRED = 11 SPACES + 5 STACKING
PARKING PROVIDED = 18 SPACES + 7 STACKING

**MAP 611Z/LOT 39 & 39-1:**
RETAIL #1 & #2 PARKING:
RETAIL BUILDING #1 = 36,000± S.F.
PARKING REQUIRED = 144 SPACES

RETAIL BUILDING #2 (MULTI–UNIT)= 10,320± S.F.
PARKING REQUIRED = 41 SPACES

TOTAL PARKING REQUIRED = 185 SPACES
PARKING PROVIDED = 299 SPACES

OUTPARCEL PARKING:
BANK W/ DRIVE–THRU = 3,320± S.F.
PARKING REQUIRED = 17 SPACES + 5 STACKING
PARKING PROVIDED = 22 SPACES + 5 STACKING

**TOTAL PARKING REQUIRED = 202 SPACES**
**TOTAL PARKING PROVIDED = 321 SPACES**

**MAP 611Z/LOT 40 & 40-1:**
RETAIL WHOLESALE = 170,385± S.F.
PARKING REQUIRED = 852 SPACES (1 SPACE/200 G.F.A.)

FUELING STATION = 12 PUMPS (DOUBLE–SIDED)
PARKING REQUIRED = 24 SPACES
(+8 STACKING SPACES/PUMP GROUP – 32 STACKING TOTAL)

EXISTING RETAIL (JC PENNY) = 61,880± S.F.
PARKING REQUIRED = 248 SPACES (1 SPACE/250 G.F.A.)

**TOTAL PARKING REQUIRED = 1,124 SPACES**
**TOTAL PARKING PROVIDED = 1,020 SPACES**

**MAP 611Z/LOT 40-2:**
RESIDENTIAL "R1" = 310 UNITS
PARKING REQUIRED = 620 SPACES (2 SPACES/UNIT)
PARKING PROVIDED = 473 SPACES
SURFACE PARKING = 297 SPACES
UNDERGROUND = 176 SPACES
PROPOSED PARKING RATIO = 1.5 SPACES/UNIT

RESIDENTIAL "R2" = 170 UNITS
PARKING REQUIRED = 340 SPACES (2 SPACES/UNIT)
PARKING PROVIDED = 313 SPACES
SURFACE PARKING = 231 SPACES
UNDERGROUND = 82 SPACES
PROPOSED PARKING RATIO = 1.8 SPACES/UNIT

EXISTING HEALTH CLUB = 35,000± S.F.
PARKING REQUIRED = 292 SPACES (1 SPACE/120 G.F.A.)
PARKING PROVIDED = 88 SPACES
PROPOSED PARKING RATIO = 1 SPACE/397 G.F.A.

EXISTING TRAMPOLINE PARK = 35,190± S.F.
PARKING REQUIRED = 703 SPACES (1 SPACE/50 G.F.A.)
PARKING PROVIDED = 81 SPACES
PROPOSED PARKING RATIO = 1 SPACE/434 G.F.A.

RETAIL – MULTI–TENANT = 25,000± S.F. (ASSUME 85% USABLE SPACE)
PARKING REQUIRED = 60 SPACES (1 SPACE/250 G.F.A.)
PARKING PROVIDED = 64 SPACES

**TOTAL PARKING REQUIRED = 2,055 SPACES**
**TOTAL PARKING PROVIDED = 1,019 SPACES**

**MAP 611Z/LOT 40-3:**
RESIDENTIAL "R3" = 120 UNITS
PARKING REQUIRED = 240 SPACES (2 SPACES/UNIT)
PARKING PROVIDED = 252 SPACES
SURFACE PARKING = 152 SPACES
UNDERGROUND = 100 SPACES
PROPOSED PARKING RATIO = 2.1 SPACES/UNIT

LOTS 40, 40–1, 40–2 & 40–3 (REDEVELOPMENT LOTS)
TOTAL PARKING REQUIRED = 3,419 SPACES
TOTAL PARKING PROVIDED = 2,291 SPACES

**MAP 611Z/LOT 41:**
EXISTING RESTAURANT = 5,110± S.F.
PARKING REQUIRED = 68 SPACES (1 SPACE/75 G.F.A.)
PARKING PROVIDED = 56 SPACES
PROPOSED PARKING RATIO = 1 SPACE/91 G.F.A.

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STATE OF NEW HAMPSHIRE – EWEN I. MACKINNON No.16659 – LICENSED PROFESSIONAL ENGINEER
11/20/2024

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Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXHIBIT SITE PLAN - PARKING
Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH
Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C2.3
SHEET 8 OF 17
JBE PROJECT NO. 23031

| SOIL NUMBER | SOIL NAME |
|---|---|
| 699B | URBAN LAND, 0 TO 8 % SLOPES |
| 598B | WINDSOR–URBAN LAND COMPLEX, 0 TO 8 % SLOPES |
| 296A | FREETOWN MUCKY PEAT, 0 TO 2 % SLOPES |
| 26B | WINDSOR LOAMY SAND, 3 TO 8 % SLOPES |
| 26A | WINDSOR LOAMY SAND, 0 TO 3 % SLOPES |
| 5A | RIPPOWN VERY FINE SANDY LOAM, 0 TO 3 % SLOPES, FREQUENTLY FLOODED |

LOUDON ROAD
NH ROUTE 9

SHEEP DAVIS ROAD
NH ROUTE 106

D'AMANTE DRIVE

WETLAND

EXISITNG WETLAND POND

EXISTING LEVEL SPREADER

SECONDARY LEVEL SPREADER

**TAX MAP 611Z LOT 39-1**
AREA=
32,755 SQ.FT.
0.75 AC

PROPOSED BANK
3,500± S.F.

PROPOSED STORMWATER SYSTEM

PROPOSED RETAIL #2 (MULTI-UNIT)
10,320± S.F.

PROPOSED RETAIL #1
36,000± S.F.

**TAX MAP 611Z LOT 39**
AREA PRIOR TO ADJUSTMENT=
396,960 SQ.FT.
9.11 AC
AREA AFTER ADJUSTMENT=
384,337 SQ.FT.
8.82 AC

PROPOSED **TAX MAP 611Z LOT 40-3**
302,999 SQ.FT.
6.96 AC

RESIDENTIAL COMPLEX "R3"
33,886± SQ.FT. (FOOTPRINT)
GROSS AREA = 140,000 SQ.FT.
BLDG HEIGHT = 48'-0"
120 UNITS

PROPOSED STORMWATER SYSTEM

PROPOSED **TAX MAP 611Z LOT 40-4**
(TO BE CONVEYED TO CITY)
196,688 SQ.FT.
4.52 AC

PROPOSED WHOLESALE RETAIL
170,385± SF RETAIL

PROPOSED STORMWATER SYSTEM

RESIDENTIAL COMPLEX "R1"
31,650± SQ.FT. (FOOTPRINT)
GROSS AREA = 335,000 SQ.FT.
BLDG HEIGHT = 56'-0"
310 UNITS

2'D BANK

**TAX MAP 61Z LOT 9**
24,202 SQ.FT.
0.56 AC

PROPOSED FUELING STATION

**TAX MAP 611Z LOT 40**
AREA PRIOR TO ADJUSTMENT=
2,186,385 SQ.FT.
50.19 AC
AREA AFTER ADJUSTMENT=
795,597 SQ.FT.
18.26 AC

RESIDENTIAL COMPLEX "R2"
42,388± SQ.FT. (FOOTPRINT)
GROSS RES. AREA = 170,000 SQ.FT.
GROSS COMM. AREA = 10,000 SQ.FT.
BLDG HEIGHT = 56'-0"
150 UNITS

PROPOSED STORMWATER SYSTEM

RELOCATED HEALTH CLUB
35,000± SF

EXISTING TRAMPOLINE PARK
35,190± SF

PROPOSED **TAX MAP 611Z LOT 40-2**
668,684 SQ.FT.
15.35 AC

APPLEBEE'S

EXISTING JCPENNY
61,880 SF
FF=351.25±

PROPOSED STORMWATER SYSTEM

PROPOSED RETAIL
7,500 S.F.

PROPOSED RETAIL
7,500 S.F.

PROPOSED **TAX MAP 611Z LOT 40-1**
185,264 SQ.FT.
4.25 AC

**TAX MAP 611Z LOT 41**
AREA AFTER ADJUSTMENT=
53,085 SQ.FT.
1.22 AC

GRAPHIC SCALE
100 0 50 100 200 400
( IN FEET )
1 inch = 100 feet

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STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED LAND SURVEYOR
11/20/2024

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E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: OVERALL GRADING & DRAINAGE PLAN

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C3
SHEET 9 OF 17
JBE PROJECT NO. 23031

GRAPHIC SCALE

( IN FEET )
1 inch = 60 feet

STATE PLANE

LOUDON ROAD
NH ROUTE 9

APPLEBEES

PROPOSED PUMPING STATION

B-101

699B

RE-LOCATED TRUNK LINE FOR CITY'S STORMWATER SYSTEM TO WETLAND SYSTEM

UNDERGROUND CHAMBER SYSTEM (DETENTION & INFILTRATION)

PROPOSED BANK 3,320± S.F.

TAX MAP 611Z
LOT 39

AREA PRIOR TO ADJUSTMENT=
396,960 SQ.FT.
9.11 AC

AREA AFTER ADJUSTMENT=
384,337 SQ.FT.
8.82 AC

699B

UNDERGROUND DETENTION & INFILTRATION SYSTEM

PROPOSED RETAIL #1 36,000± S.F.

PROPOSED RETAIL #2 MULTI-UNIT 10,320± S.F.

50' WETLAND BUFFER

50' WETLAND BUFFER

CONC. CHAMBER FOR ENERGY DISSIPATION

LEVEL SPREADER

PROPOSED
TAX MAP 611Z
LOT 40-1

185,264 SQ.FT.
4.25 AC

TAX MAP 611Z
LOT 40

AREA PRIOR TO ADJUSTMENT=
2,186,385 SQ.FT.
50.19 AC

AREA AFTER ADJUSTMENT=
795,597 SQ.FT.
18.26 AC

B-106

PROPOSED WHOLESALE RETAIL 170,385± SF RETAIL

EXISTING JCPENNY 91,980 SF FF=351.22±

D'AMANTE DRIVE

MATCHLINE – 1
MATCHLINE – 2

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STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON
No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

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Plan Name: GRADING & DRAINAGE PLAN - EAST

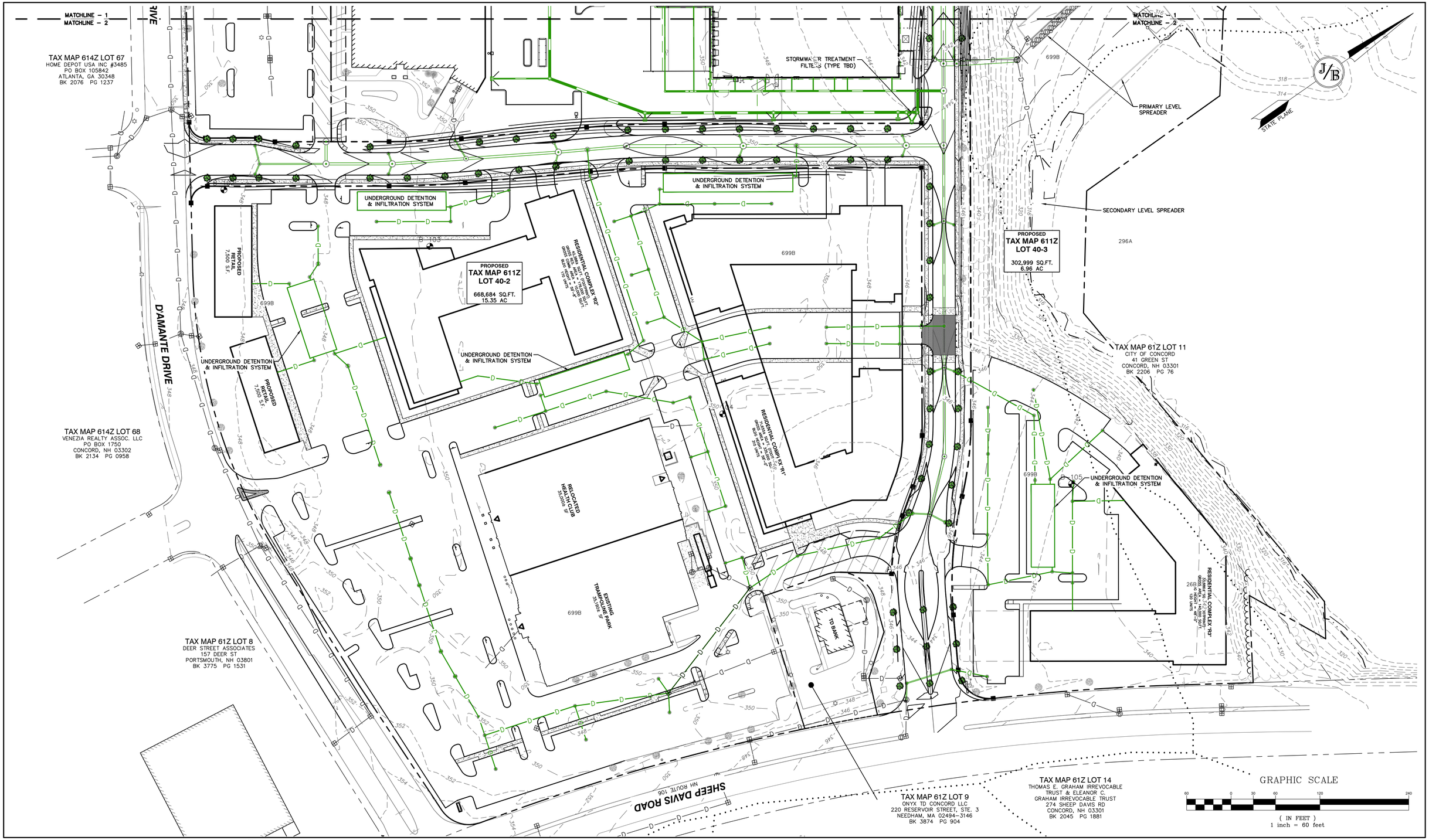
Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.

C3.1

SHEET 10 OF 17
JBE PROJECT NO. 23031

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Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C3.2
SHEET 11 OF 17
JBE PROJECT NO. 23031

LOUDON ROAD
NH ROUTE 9

SHEEP DAVIS ROAD
NH ROUTE 106

D'AMANTE DRIVE

ROAD #1

ROAD #2

SITE PLAN

TAX MAP 611Z
LOT 39-1
AREA=
32,755 SQ.FT.
0.75 AC

PROPOSED BANK
3,500± S.F.

PROPOSED RETAIL #2 (MULTI-UNIT)
10,320± S.F.

PROPOSED RETAIL #1
36,000± S.F.

TAX MAP 611Z
LOT 39
AREA PRIOR TO ADJUSTMENT=
396,960 SQ.FT.
9.11 AC
AREA AFTER ADJUSTMENT=
384,337 SQ.FT.
8.82 AC

EXISTING TELECOM BUILIDNG
(TO BE RELOCATED)

EXISTING GRAVITY SEWER

RESIDENTIAL COMPLEX "R3"
33,886± SQ.FT. (FOOTPRINT)
GROSS AREA = 140,000 SQ.FT.
BLDG HEIGHT = 45'-0"
120 UNITS

PROPOSED
TAX MAP 611Z
LOT 40-3
302,999 SQ.FT.
6.96 AC

EXISTING
12" SEWER

EXISTING
FORCE MAIN

PROPOSED 12" WATER MAIN
PROPOSED 12" SEWER MAIN
PROPOSED GAS MAIN
PROPOSED UNDERGROUND ELECTRIC

PROPOSED
TAX MAP 611Z
LOT 40-4
(TO BE CONVEYED TO CITY)
196,688 SQ.FT.
4.52 AC

PROPOSED
WHOLESALE RETAIL
170,385± SF RETAIL

PROPOSED 10" SEWER MAIN
PROPOSED GAS MAIN

PROPOSED 12" WATER MAIN
PROPOSED UNDERGROUND ELECTRIC

RESIDENTIAL COMPLEX "R1"
71,055± SQ.FT. (FOOTPRINT)
GROSS AREA = 355,000 SQ.FT.
BLDG HEIGHT = 55'-0"
300 UNITS

TD BANK

TAX MAP 61Z
LOT 9
24,202 SQ.FT.
0.56 AC

PROPOSED
FUELING STATION

TAX MAP 611Z
LOT 40
AREA PRIOR TO ADJUSTMENT=
2,186,385 SQ.FT.
50.19 AC
AREA AFTER ADJUSTMENT=
795,597 SQ.FT.
18.26 AC

APPLEBEE'S

EXISTING
JCPENNY
61,880 SF
FF=351.25±

RESIDENTIAL COMPLEX "R2"
42,388± SQ.FT. (FOOTPRINT)
GROSS RES. AREA = 153,000 SQ.FT.
GROSS COMM. AREA = 22,000 SQ.FT.
BLDG HEIGHT = 55'-8"
170 UNITS

RELOCATED
HEALTH CLUB
35,000± SF

EXISTING
TRAMPOLINE PARK
35,190± SF

EXISTING
GRAVITY SEWER

PROPOSED
TAX MAP 611Z
LOT 40-2
668,684 SQ.FT.
15.35 AC

PROPOSED
TAX MAP 611Z
LOT 40-1
185,264 SQ.FT.
4.25 AC

PROPOSED
RETAIL
7,500 S.F.

PROPOSED
RETAIL
7,500 S.F.

TAX MAP 611Z
LOT 41
AREA AFTER ADJUSTMENT=
53,085 SQ.FT.
1.22 AC

GRAPHIC SCALE
100 0 50 100 200 400
( IN FEET )
1 inch = 100 feet

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STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

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Plan Name: OVERALL UTILITY PLAN

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C4
SHEET 12 OF 17
JBE PROJECT NO. 23031

GRAPHIC SCALE

( IN FEET )
1 inch = 60 feet

STATE PLANE

LOUDON ROAD
NH ROUTE 9

APPLEBEES

PROPOSED HYDRANT & WATER LINE EXTENSION

EXISTING 12" WATER LINE TO BE RETIRED BACK TO MAIN

EXISTING GAS LINE TO BE RETIRED BACK TO MAIN COORDINATE W/UTILITY)

PROPOSED HYDRANT

PRESSURE CONTROL VALVE

UNDERGROUND POWER

PROPOSED HYDRANT (ON EX. 6" WATER LINE)

EXISTING GRAVITY SEWER LINE & SEWER FORCE MAIN

BOOSTER PUMP HOUSE

EMERGENCY GENERATOR

PROPOSED WATER SERVICE

PROPOSED BANK 3,320± S.F.

PROPOSED UTILITY POLE W/ POWER & TELECOM PROPS

PROPOSED TRANSFORMER

LOUDON ROAD
NH ROUTE 9

TAX MAP 611Z
LOT 39

AREA PRIOR TO ADJUSTMENT=
396,960 SQ.FT.
9.11 AC

AREA AFTER ADJUSTMENT=
384,337 SQ.FT.
8.82 AC

PROPOSED 12" WATER MAIN

PROPOSED 12" SEWER MAIN

PROPOSED GAS MAIN

PROPOSED UNDERGROUND ELECTRIC

PROPOSED GRAVITY SEWER

PROPOSED RETAIL #1 36,000± S.F.

PROPOSED RETAIL #2 (MULTI-UNIT) 10,320± S.F.

PROPOSED 8" WATER LINE

PROPOSED GAS LINE (SIZE TBD)

BACKUP GENERATOR

GREASE TRAP

PROPOSED HYDRANT

PROPOSED TRANSFORMER

EXISTING 12" GRAVITY SEWER

PROPOSED WHOLESALE RETAIL 170,355± SF RETAIL

TAX MAP 611Z
LOT 40

AREA PRIOR TO ADJUSTMENT=
2,186,385 SQ.FT.
50.19 AC

AREA AFTER ADJUSTMENT=
795,597 SQ.FT.
18.26 AC

PROPOSED
TAX MAP 611Z
LOT 40-1

185,264 SQ.FT.
4.25 AC

EXISTING JCPENNY 61,980± SF RETAIL

D'AMANTE DRIVE

MATCHLINE – 1
MATCHLINE – 2

MATCHLINE – 1
MATCHLINE – 2

| | | | |
|---|---|---|---|
| Design: ISM | Draft: GAP | Date: 11/20/24 | |
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STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

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603-772-4746
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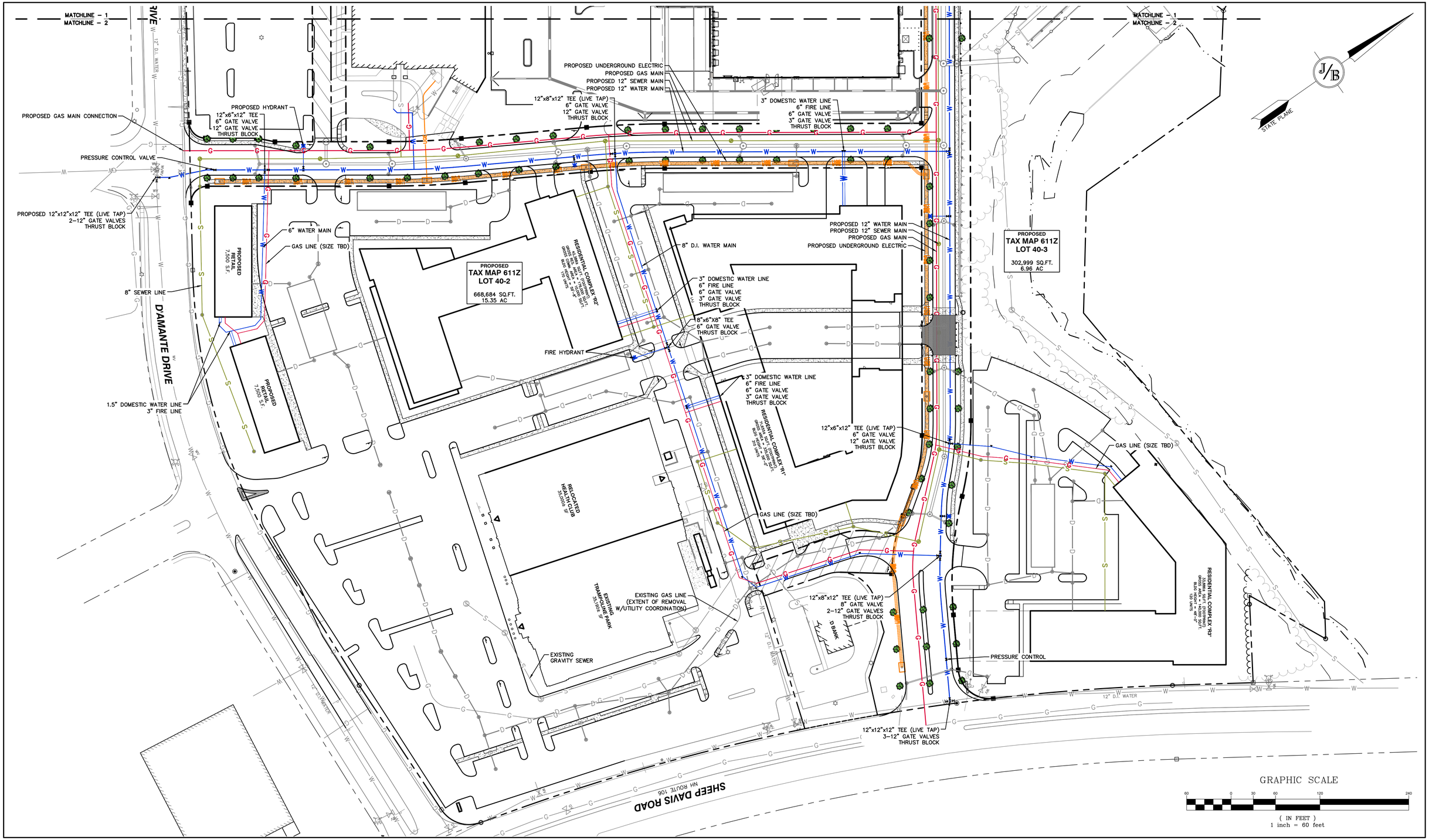
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: UTILITY PLAN - EAST

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C4.1
SHEET 13 OF 17
JBE PROJECT NO. 23031

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STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – EWEN L. MACKINNON No.16659 LICENSED 11/20/2024

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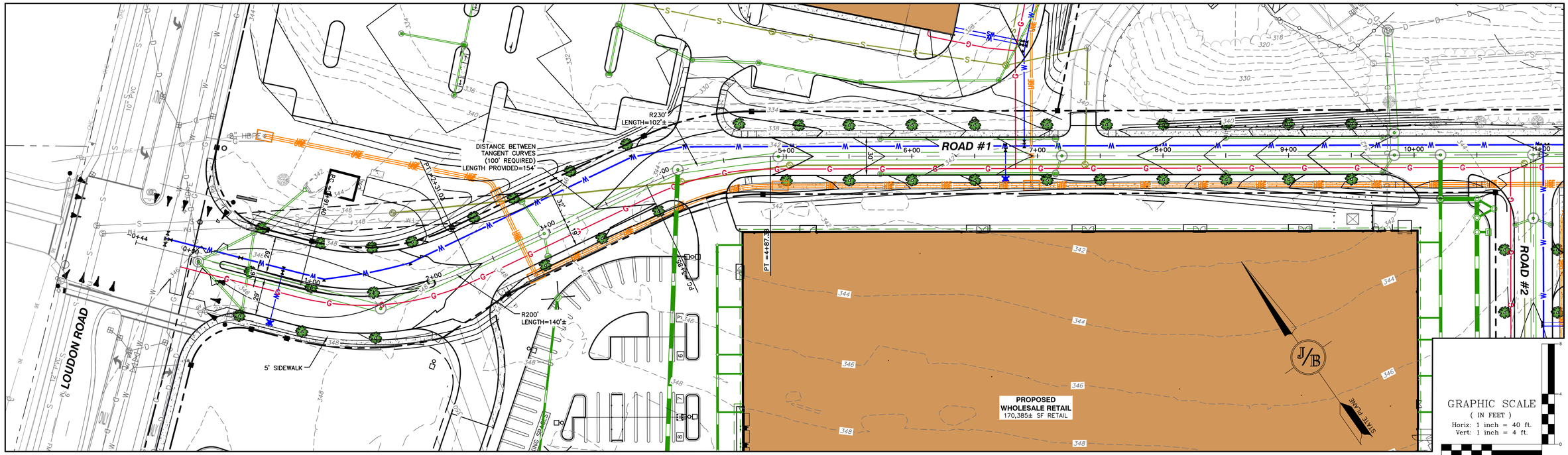
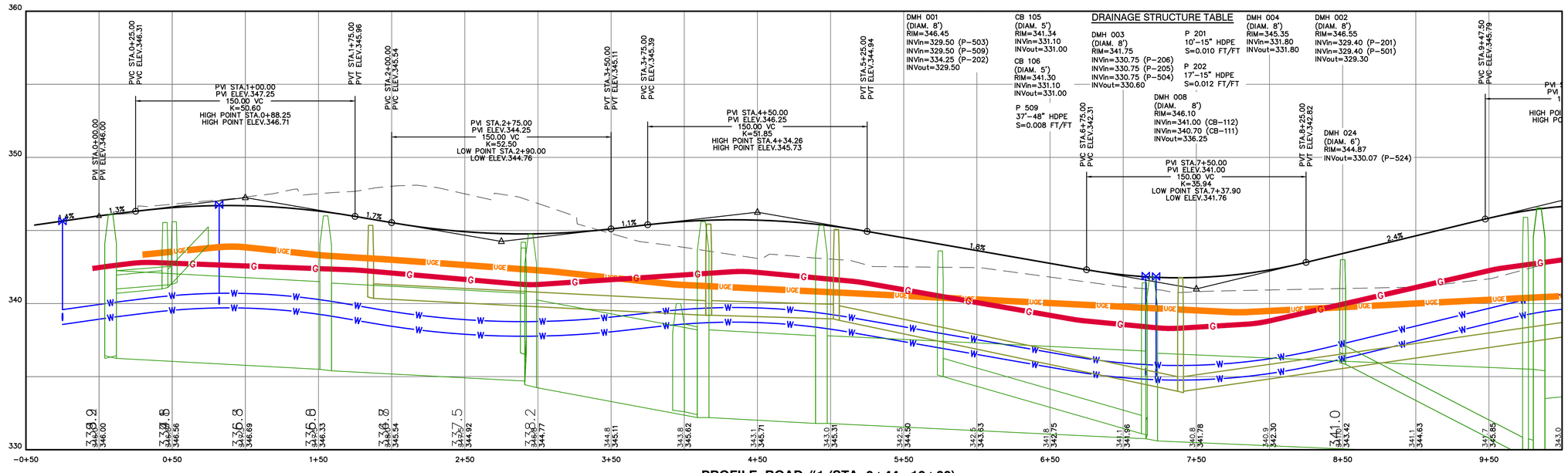
Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
C4.2
SHEET 14 OF 17
JBE PROJECT NO. 23031




**PLAN: ROAD #1 (STA -0+44 - 10+00)**




**PROFILE: ROAD #1 (STA -0+44 - 10+00)**

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| Checked: WGM | Scale: AS NOTED |
| Drawing Name: 23031-PLAN_CDP.dwg | |



Date: 11/20/24
Project No.: 23031

STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

| REV. | DATE | REVISION | BY |
|---|---|---|---|
| 0 | 11/20/24 | ISSUED FOR REVIEW | ISM |

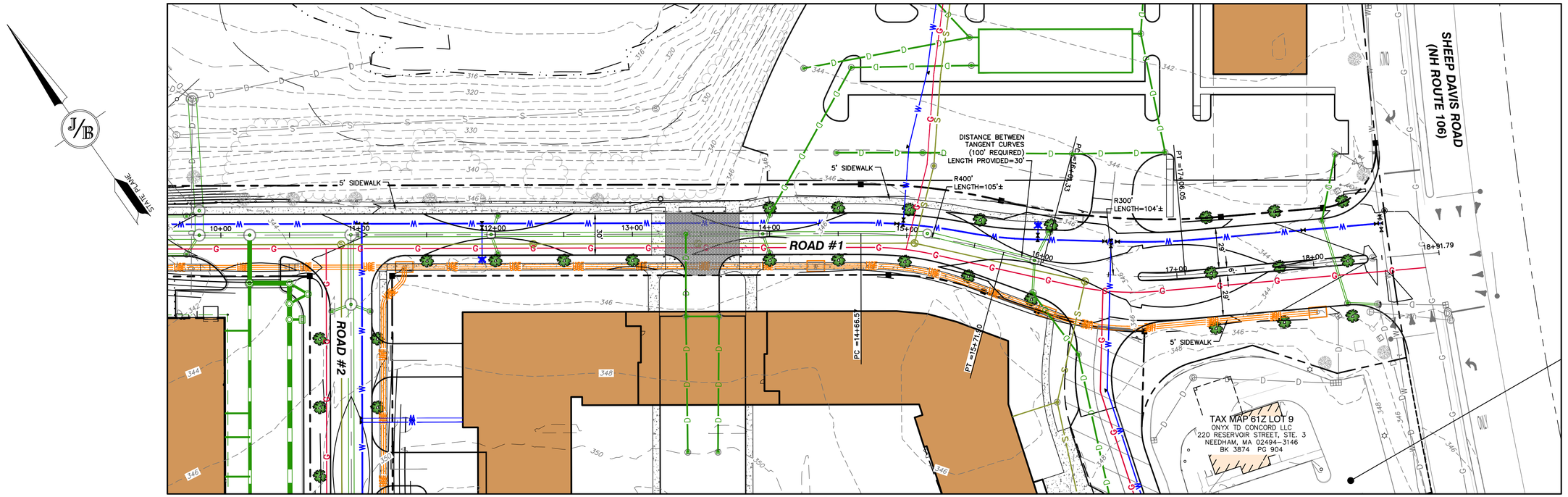
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: ROADWAY PLAN & PROFILE

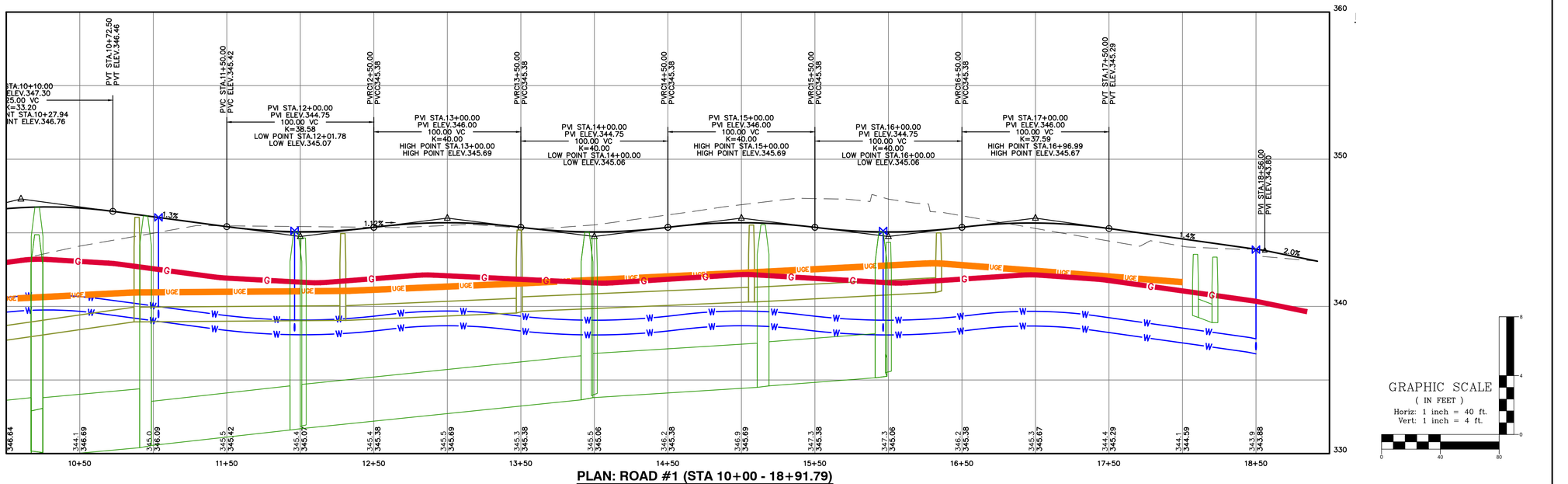
Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
PP1
SHEET 15 OF 17
JBE PROJECT NO. 23031




**PLAN: ROAD #1 (STA 10+00 - 18+91.79)**




**PLAN: ROAD #1 (STA 10+00 - 18+91.79)**

GRAPHIC SCALE
( IN FEET )
Horiz: 1 inch = 40 ft.
Vert: 1 inch = 4 ft.

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| Design: ISM | Draft: GAP | Date: 11/20/24 |
| Checked: WGM | Scale: AS NOTED | Project No.: 23031 |
| Drawing Name: 23031-PLAN_CDP.dwg | | |



STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

| REV. | DATE | REVISION | BY |
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| 0 | 11/20/24 | ISSUED FOR REVIEW | ISM |

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PO Box 219
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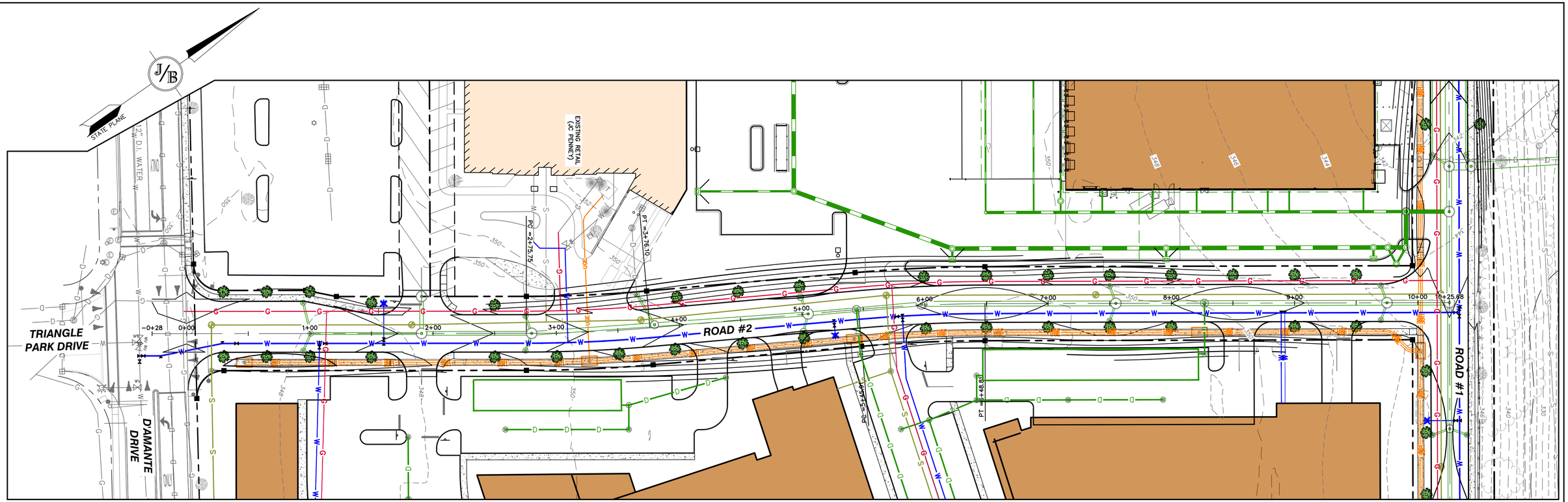
Plan Name: ROADWAY PLAN & PROFILE

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
PP2
SHEET 16 OF 17
JBE PROJECT NO. 23031

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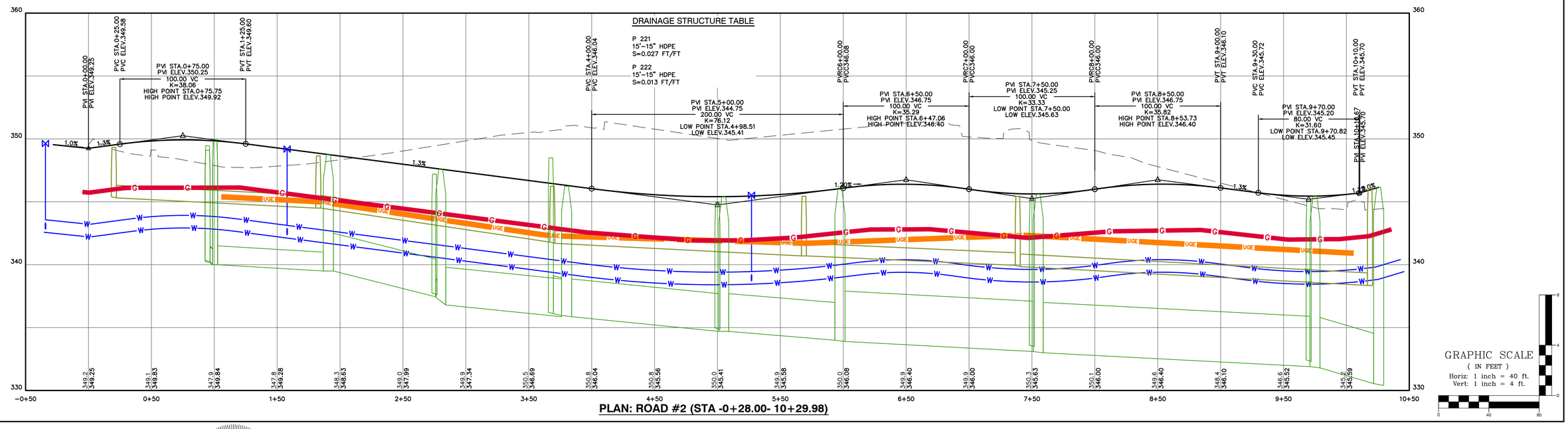


PLAN: ROAD #2 (STA -0+28.00- 10+29.98)

GRAPHIC SCALE
( IN FEET )
Horiz: 1 inch = 40 ft.
Vert: 1 inch = 4 ft.

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| Design: ISM | Draft: GAP | Date: 11/20/24 |
| Checked: WGM | Scale: AS NOTED | Project No.: 23031 |
| Drawing Name: 23031-PLAN_CDP.dwg | | |



STATE OF NEW HAMPSHIRE
EWEN I. MACKINNON No.16659
LICENSED PROFESSIONAL ENGINEER
11/20/2024

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85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

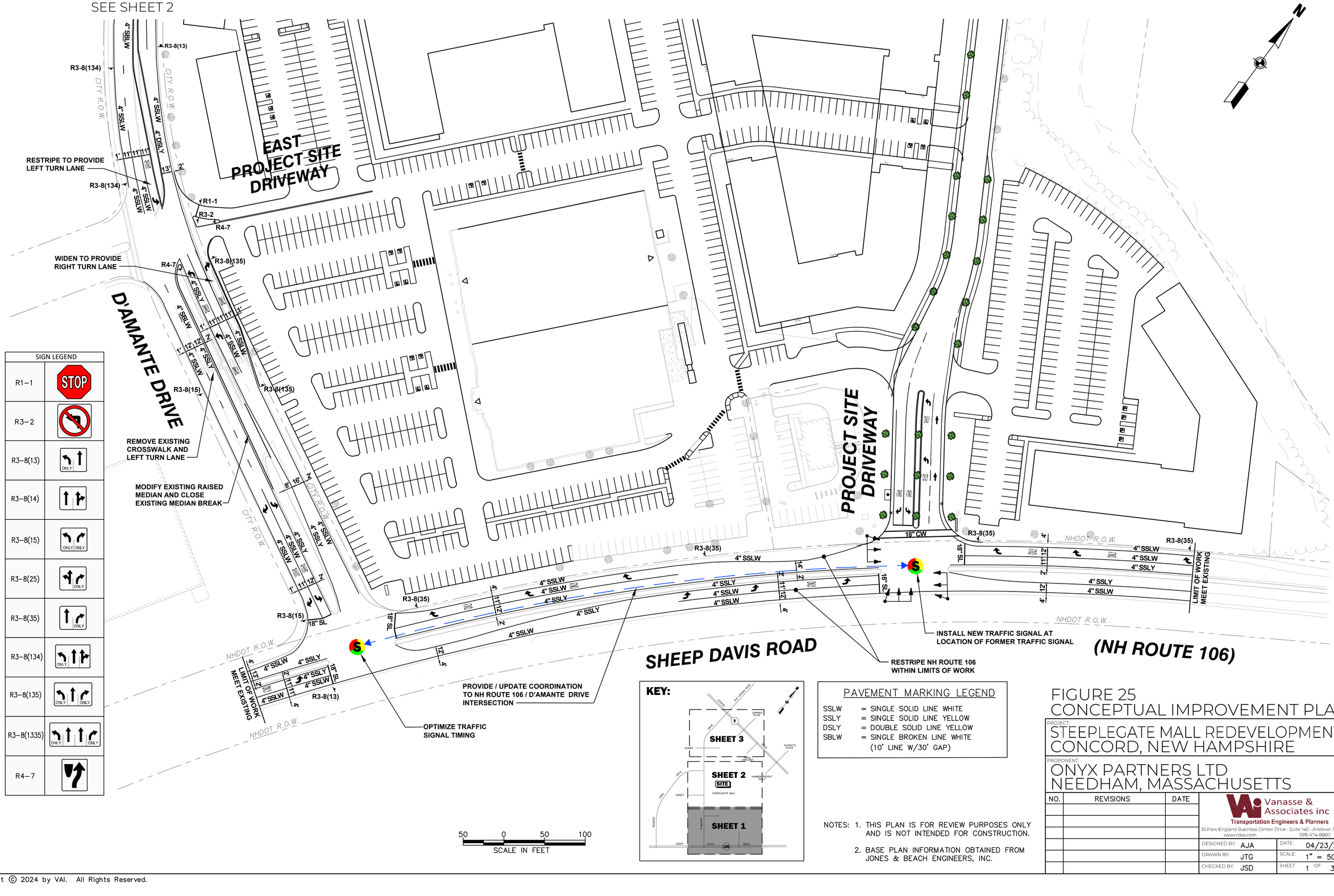
Plan Name: ROADWAY PLAN & PROFILE

Project: COMMERCIAL REDEVELOPMENT
LOUDON ROAD, D'AMANTE DRIVE & SHEEP DAVIS ROAD, CONCORD, NH

Owner of Record: ONYX STEEPLEGATE CONCORD, LLC & ONYX REGAL CONCORD, LLC
200 RESERVOIR STREET, SUITE 3, NEEDHAM, MA 02494

DRAWING No.
PP3
SHEET 17 OF 17
JBE PROJECT NO. 23031

SEE SHEET 2




| SIGN LEGEND | |
|---|---|
| R1–1 | STOP |
| R3–2 | |
| R3–8(13) | ONLY |
| R3–8(14) | |
| R3–8(15) | ONLY ONLY |
| R3–8(25) | ONLY |
| R3–8(35) | ONLY |
| R3–8(134) | ONLY |
| R3–8(135) | ONLY ONLY |
| R3–8(1335) | ONLY ONLY |
| R4–7 | |

SCALE IN FEET: 50 0 50 100

**KEY:**




## PAVEMENT MARKING LEGEND

| | |
|---|---|
| SSLW | = SINGLE SOLID LINE WHITE |
| SSLY | = SINGLE SOLID LINE YELLOW |
| DSLY | = DOUBLE SOLID LINE YELLOW |
| SBLW | = SINGLE BROKEN LINE WHITE (10' LINE W/30' GAP) |

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

# FIGURE 25
# CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
## STEEPLEGATE MALL REDEVELOPMENT
## CONCORD, NEW HAMPSHIRE

PROPONENT:
## ONYX PARTNERS LTD
## NEEDHAM, MASSACHUSETTS

| NO. | REVISIONS | DATE |
|---|---|---|
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Vanasse & Associates inc
Transportation Engineers & Planners
35 New England Business Center Drive - Suite 140 - Andover, MA 01810
www.vai.com 978-474-8900


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|---|---|---|---|
| DESIGNED BY: | AJA | DATE: | 04/23/24 |
| DRAWN BY: | JTG | SCALE: | 1" = 50' |
| CHECKED BY: | JSD | SHEET | 1 OF 3 |



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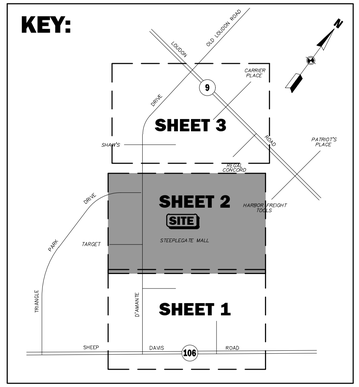


## PAVEMENT MARKING LEGEND

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|---|---|
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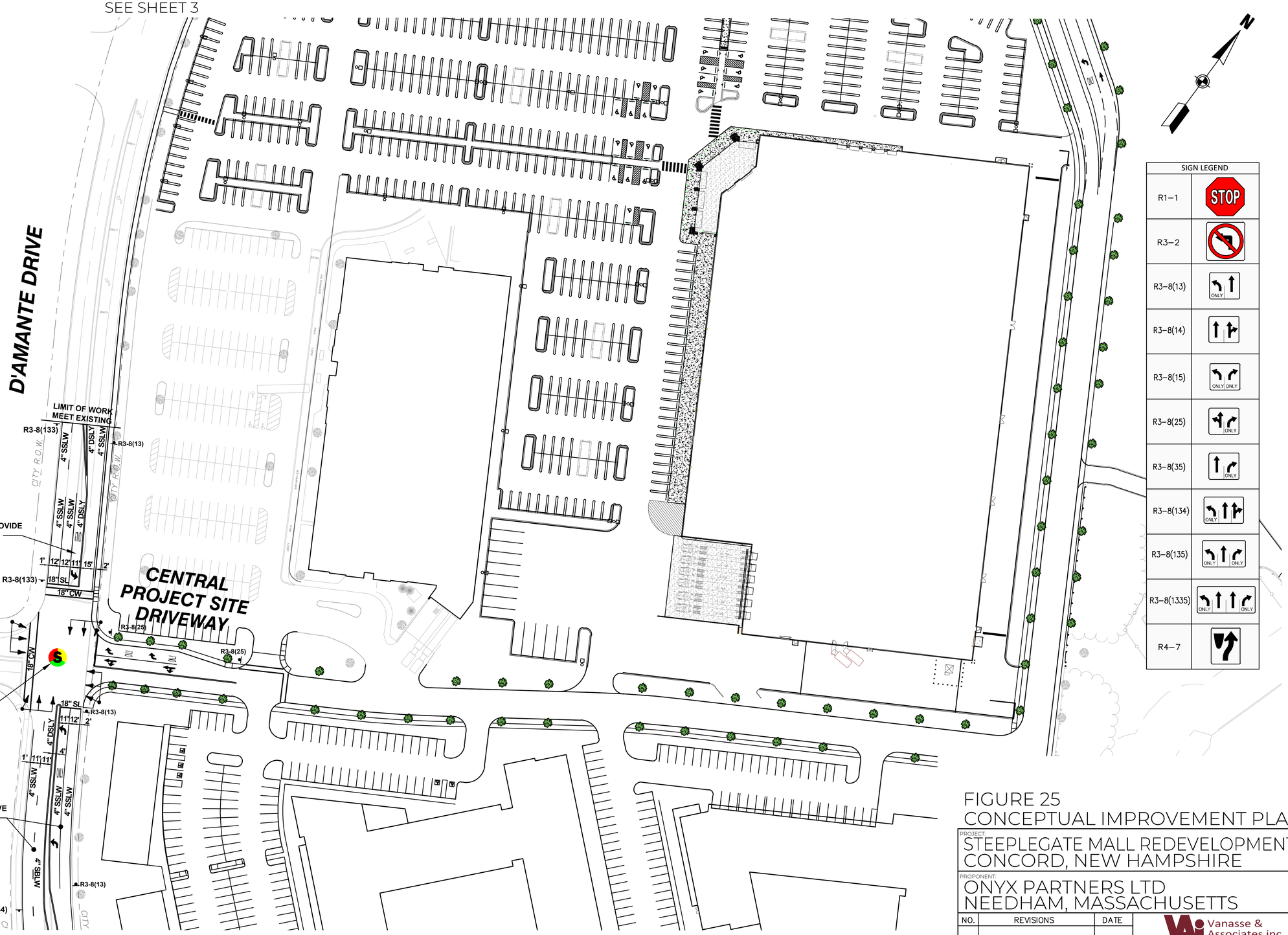
| SSLY | = SINGLE SOLID LINE YELLOW |
| DSLY | = DOUBLE SOLID LINE YELLOW |
| SBLW | = SINGLE BROKEN LINE WHITE (10' LINE W/30' GAP) |

SEE SHEET 3




SEE SHEET 1

| SIGN LEGEND | |
|---|---|
| R1–1 | STOP |
| R3–2 | |
| R3–8(13) | ONLY |
| R3–8(14) | |
| R3–8(15) | ONLY ONLY |
| R3–8(25) | ONLY |
| R3–8(35) | ONLY |
| R3–8(134) | ONLY |
| R3–8(135) | ONLY ONLY |
| R3–8(1335) | ONLY ONLY |
| R4–7 | |

50 0 50 100
SCALE IN FEET

NOTES:
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# FIGURE 25
# CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
STEEPLEGATE MALL REDEVELOPMENT
CONCORD, NEW HAMPSHIRE

PROPONENT:
ONYX PARTNERS LTD
NEEDHAM, MASSACHUSETTS

| NO. | REVISIONS | DATE |
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Transportation Engineers & Planners
35 New England Business Center Drive - Suite 140 - Andover, MA 01810
www.vai.com 978-474-8800

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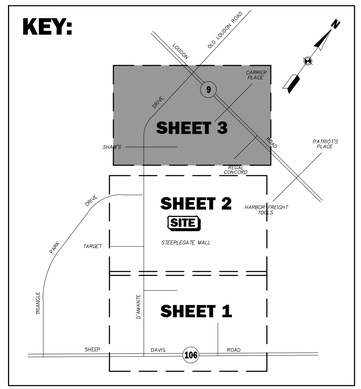
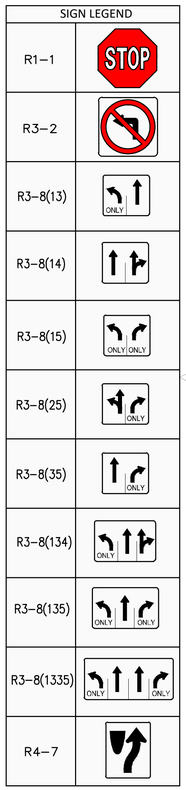
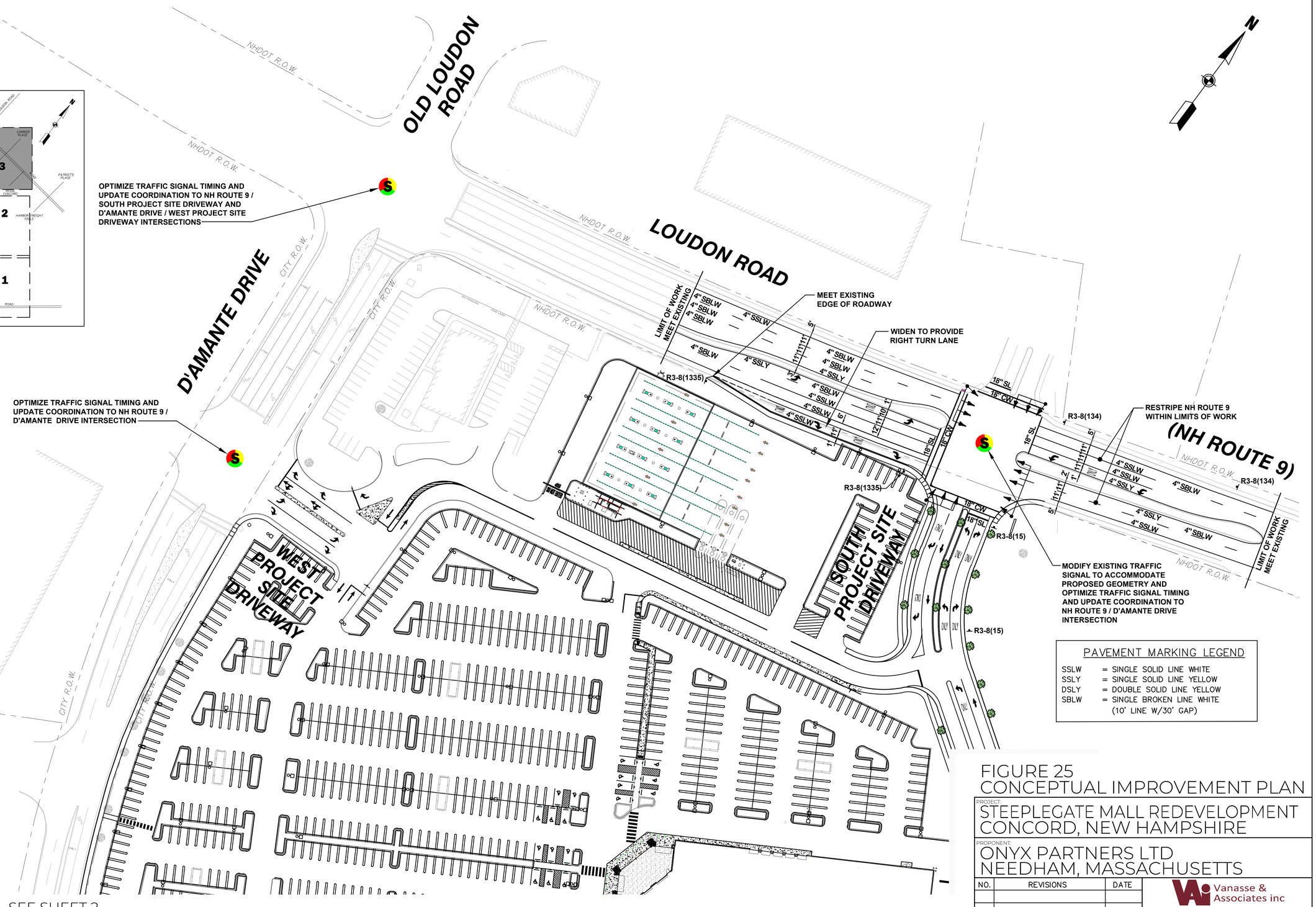
|---|---|---|---|
| DESIGNED BY: | AJA | DATE: | 04/23/24 |
| DRAWN BY: | JTG | SCALE: | 1" = 50' |
| CHECKED BY: | JSD | SHEET | 2 OF 3 |




SEE SHEET 2

50 0 50 100
SCALE IN FEET

PAVEMENT MARKING LEGEND

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|---|---|
| SSLW | = SINGLE SOLID LINE WHITE |
| SSLY | = SINGLE SOLID LINE YELLOW |
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# FIGURE 25
# CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
STEEPLEGATE MALL REDEVELOPMENT
CONCORD, NEW HAMPSHIRE

PROPONENT:
ONYX PARTNERS LTD
NEEDHAM, MASSACHUSETTS

| NO. | REVISIONS | DATE |
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Vanasse & Associates inc
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35 New England Business Center Drive - Suite 140 - Andover, MA 01810
www.vhb.com
978-474-8800

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| DESIGNED BY: | AJA | DATE: | 04/23/24 |
| DRAWN BY: | JTG | SCALE: | 1" = 50' |
| CHECKED BY: | JSD | SHEET | 3 OF 3 |



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# Traffic Impact Study

## Steeplegate Mall Redevelopment
## 270 Loudon Road (NH Route 9)
## Concord, New Hampshire

*Prepared for:*

Onyx Partners Ltd.
Needham, Massachusetts

March 2024



*Prepared by:*

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

Dear Reviewer:

This letter shall certify that this Traffic Impact Study has been prepared under my direct supervision and responsible charge. I am a Registered Professional Engineer (P.E.) in the State of New Hampshire (NH P.E. No. 9822) and hold Certification as a Professional Traffic Operations Engineer (PTOE) from the Transportation Professional Certification Board, Inc. (TPCB), an independent affiliate of the Institute of Transportation Engineers (ITE) (PTOE Certificate No. 993). I am also a Fellow of the Institute of Transportation Engineers (FITE).

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

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# FIGURES

## FIGURES (Continued)

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# EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact Study (TIS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed redevelopment of the Steeplegate Mall and the adjacent Regal Concord movie theater located at 270 Loudon Road (NH Route 9) and 282 Loudon Road in Concord, New Hampshire, respectively, to accommodate a mixed-use development (hereafter referred to as the "Project"). This study was prepared in consultation with the City of Concord, the Central New Hampshire Regional Planning Commission (CNHRPC) and the New Hampshire Department of Transportation (NHDOT), and was performed in accordance with the NHDOT guidelines for the preparation of Traffic Impact Studies (TISs) and the standards of the Traffic Engineering and Transportation Planning Professions for the preparation of such reports, and the scoping determination issued by the NHDOT.

This assessment has concluded the following with respect to the Project and the study area roadways and intersections:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)[1] and with appropriate adjustments to account for internal trips, pass-by trips and divert-link trips, the completed Project, without consideration of the trips generated by the existing uses that are currently operating within the Project site, is expected to generate 15,308 new vehicle trips on an average weekday and 18,994 new vehicle trips on a Saturday (both two-way, 24-hour volumes), with 845 new vehicle trips expected during the weekday morning peak-hour, 1,370 new vehicle trips expected during the weekday evening peak-hour and 1,943 new vehicle trips expected during the Saturday midday peak-hour;

2. For context, in comparison to the trips associated with the fully occupancy of the Steeplegate Mall and the continued operation of the Regal Concord movie theater, the Project is expected to generate 396 additional vehicle trips on an average weekday and a reduction of 2,456 vehicle trips on a Saturday, with 1,567 additional vehicle trips expected during the weekday morning peak-hour, a reduction of 31 vehicle trips during the weekday evening peak-hour and a reduction of 135 vehicle trips during the Saturday midday peak-hour;

[1] *Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

3. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with 11 of the 14 signalized study area intersections shown to continue to operate at an overall level-of-service (LOS) of D or better, where an LOS of "D" or better is generally defined as being representative of "acceptable" traffic operations. Of the three (3) signalized intersections that were identified to operate below LOS D, two (2) were identified to be operating at or over capacity (i.e., LOS "E" or "F") during the weekday evening and/or the Saturday midday peak hours under No-Build conditions independent of the Project Specific improvements have been or will be advanced at many of these intersections in order to improve operations (discussion follows);

4. Critical movements at the unsignalized study area intersections were shown to operate at or over capacity independent of the Project, with Project-related impacts on these movements defined as an increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of up to 12 vehicles (NH Route 106/Triangle Park Drive during the Saturday midday peak-hour under 2035 Build conditions);

5. The NH Route 106/Project site driveway intersection was found to meet the necessary warrants specified in the *Manual on Uniform Traffic Control Devices* (MUTCD)[2] under 2025 Build traffic volume conditions to justify the reactivation of the traffic control signal at the intersection as a part of the Project;

6. With the reinstallation of a traffic control signal at the NH Route 106/Project site driveway intersection, all movements exiting the Project site will operate at LOS C or better during the peak hours, with the exception of vehicles exiting the north Project site driveway to NH Route 9 which are predicted to operate at or over capacity during the weekday evening and the Saturday midday peak hours under both 2025 and 2035 Build peak-month conditions; however, the resulting residual vehicle queue (one (1) vehicle) can be contained within the Project site without inhibiting access or circulation, or the movement of vehicles along NH Route 9; and

7. Lines of sight to and from the Project site driveway intersections with NH Route 9, NH Route 106 and D'Amante Drive were found to exceed or could be made to exceed the recommended minimum distances for safe and efficient operation.

In consideration of the above, it has been concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

## RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

[2] *Manual on Uniform Traffic Control Devices (MUTCD), 11th Edition*; Federal Highway Administration; Washington, D.C.; December 2023.

**Project Access**

Access to the Project site will be provided by way of six (6) driveways that will intersect NH Route 9 (two (2) driveways), NH Route 106 (one (1) driveway) and D'Amante Drive (three (3) driveways) , with the driveways along NH Route 9 and NH Route 106 situated at the location of the existing driveways that serve the Project site. The three (3) driveways along D'Amante Drive will be configured as follows: the existing full access driveway that currently serves the Project site and intersects the north side of D'Amante Drive opposite the Shaw's driveway; a new full access driveway that will intersect the north side of D'Amante Drive opposite Triangle Park Drive; and a new driveway that will intersect the north side of D'Amante Drive opposite the Target driveway where exiting movements from the Project site will be restricted to right-turn only. The existing Project site driveway that intersects the north side of D'Amante Drive approximately 260 feet east of the Target driveway will be closed in conjunction with the Project. In conjunction with the Project, a new internal roadway network will be constructed that will connect the south NH Route 9 driveway, the NH Route 106 driveway and the D'Amante Drive driveway and will ultimately be conveyed to the City of Concord as a public way.

The following recommendations are offered with respect to Project access, internal circulation, and parking, many of which are reflected on the Site Plans for the Project:

- The Project site driveways and internal circulating drives should be a minimum of 24 feet in width where two-way traffic is to be conveyed and a minimum of 20 feet in width for one-way travel, and designed to accommodate the turning and maneuvering requirements of delivery trucks (where delivery trucks are to be accommodated) and the largest anticipated responding emergency vehicle.

- A review of the auxiliary turn lane warrants for the installation of left and right turn lanes at the Project site driveway intersections indicates that left-turn lanes should be provided on the D'Amante Drive eastbound approaches to the Project site driveways located opposite Triangle Park Drive and opposite the Target driveway. In addition, right-turn lanes should be provided on the NH Route 9 eastbound approach to the Project site driveway that is located opposite Carrier Place and on the D'Amante Drive westbound approach to the Project site driveway located opposite the Target driveway. The addition of the aforementioned turn lanes should be completed commensurate with the construction of the Project.

- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23 feet in order to facilitate parking maneuvers.

- A review of the warrants specified in the MUTCD[3] for the installation of a traffic control signal indicates that **the reinstallation of the traffic control signal at the NH Route 106/Steeplegate Mall (Project site) driveway intersection is warranted under 2025 average-month Opening-Year Build conditions**. As such, it is recommended that a traffic control signal be reinstalled at this intersection to include upgrading/replacing the traffic signal poles, mast arms and appurtenances that were retained at the intersection as necessary. Given that the completion and opening of specific components of the Project will likely be phased, the traffic signal equipment should be installed as a part of the initial construction of the Project and traffic volumes at the intersection should be monitored on an annual or more frequent basis in order to determine

[3]Ibid.

when the traffic volume thresholds are met that would justify (warrant) the activation of the traffic signal system. With the reimplementation of traffic signal control at the intersection, all movements are predicted to operate at LOS D or better during the peak-hours.

- Vehicles exiting the Project site at the unsignalized Project site driveway intersections should be placed under STOP-sign control.

- Appropriate signs ("One-Way" and "Do Not Enter") and pavement markings should be provided where one-way traffic is to be conveyed.

- All signs and pavement markings to be installed within the Project shall conform to the applicable standards of the MUTCD.[4]

- An internal sidewalk network should be developed that links the proposed buildings to parking areas and extends to the existing sidewalks along NH Route 9 and D'Amante Drive. Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at pedestrian crossings that are to be constructed or modified in conjunction with the Project.

- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.

- Existing vegetation located along the Project site frontage on D'Amante Drive should be removed or selectively trimmed and maintained as necessary so that no portion of the vegetation is located within the sight triangle areas of the Project site driveways.

- Snow accumulations (windrows) within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.

**Off-Site**

**NH Route 9 at NH Route 106**

Independent of the Project, left-turn and through movements along the NH Route 9 eastbound approach are currently or are predicted to operate at or over capacity (i.e., LOS "E" or "F") during the weekday evening and Saturday midday peak-hours. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. With these improvements, no movement is expected to operate below LOS D during any peak-hour, an improvement over No-Build conditions.

[4]Federal Highway Administration, op. cit. 2.

**NH Route 9/D'Amante Drive Traffic Signal Timing Improvements**

Independent of the Project, one or more movements at signalized intersections along the NH Route 9/D'Amante Drive corridor within the study area are currently or are predicted to operate at or over capacity. In addition, the NH Route 9/D'Amante Drive/Old Loudon Road intersection is not currently operating as a part of the coordinated traffic signal system. In an effort to improve traffic operations and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing, phasing and coordination plan for the following intersections subject to receipt of all necessary rights, permits and approvals:

- NH Route 9 at the Walmart driveway
- NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway
- NH Route 9 at the Steeplegate Mall driveway and the Carrier Place driveway
- NH Route 9 at D'Amante Drive and Old Loudon Road
- D'Amante Drive at the West Steeplegate Mall driveway and the Shaw's driveway
- D'Amante Drive at Triangle Park Drive

These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. With these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 9 at NH Route 132 and Canterbury Road**

Independent of the Project, one or more movements at the NH Route 9/NH Route 132/ Canterbury Road intersection are currently or are predicted to operate at or over capacity with extended vehicle queuing. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. With these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 106 Traffic Signal Timing Improvements**

With the reinstallation of a traffic control signal at the NH Route 106/Steeplegate Mall driveway intersection, it is recommended that the traffic signal be coordinated with the traffic signal at the NH Route 106/D'Amante Drive intersection and that an optimal traffic signal timing, phasing and coordination plan be implemented. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within

six months of the issuance of a Certificate of Occupancy for Costco. With these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 106 at Triangle Park Drive**

Independent of the Project, the Triangle Park Drive approach to NH Route 106 is currently operating over capacity during the weekday evening peak-hour and is predicted to operate at or over capacity during the Saturday midday peak-hour under 2025 and 2035 No-Build conditions again, independent of the Project. In an effort to advance potential improvement strategies at this intersection, the Project proponent will undertake an intersection improvement study that will include performing a formal Traffic Signal Warrants Analysis (TSWA) in accordance with the methodology outlined in the MUTCD[5] and evaluating geometric improvements, including the reconfiguration of the intersection as a modern roundabout. Conceptual improvement plans will be prepared for each of the improvement alternatives that are evaluated and preliminary cost estimates will be developed. The improvement study will be provided to the City prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first. Upon selection of a preferred improvement strategy by the City, the Project proponent will contribute a "fair-share" portion of the cost to design and construct the identified improvements defined based on the predicted increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

**NH Route 106 at Pembroke Road and North Pembroke Road**

Independent of the Project, one or more movements at the NH Route 106/Pembroke Road/ North Pembroke Road intersection are currently or are predicted to operate at or over capacity with extended vehicle queuing. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. With these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

## Transportation Demand Management

Public transportation services are provided within the study area by Concord Area Transit (CAT) and are accessible at the Project site. CAT operates fixed route bus service along NH Route 9 and D'Amante Drive by way of the Heights Route, with one stop located within the Project site and two (2) stops located along D'Amante Drive proximate to the Project site. CAT also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA). In an effort to encourage the use of alternative modes of transportation to single occupancy vehicles (SOVs), the following Transportation Demand Management (TDM) measures will be implemented as a part of the Project:

[5]Federal Highway Administration, op. cit. 3.

- A transportation coordinator will be designated for the Project to coordinate the elements of the TDM program;

- Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents and employees of the Project;

- A "welcome packet" will be provided to new residents and employees detailing available public transportation services, bicycle and walking alternatives, and commuter options available;

- Work-at-home accommodations will be provided to support telecommuting by residents of the Project that make take the form of a business office, meeting space and a collaboration area within the amenities area;

- Commercial tenants will be encouraged to offer specific amenities to discourage off-site trips which may include: including providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; on-site dry cleaning pick-up; and other such measures to reduce overall traffic volumes and travel during peak-traffic-volume periods;

- Pedestrian accommodations will be incorporated into the Project, and will include ADA-compliant wheelchair ramps at all pedestrian crossings that are to be constructed as a part of the Project and sidewalk connections to the existing sidewalks along NH Route 9 and D'Amante Drive; and

- Secure bicycle parking will be provided at appropriate locations within the Project site and will include weather protected bicycle parking.

In addition, the Project proponent will coordinate with CAT to design and locate a central bus stop (or stops) within the Project site that will include a bus pull-out and a shelter.

With implementation of the aforementioned recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing transportation system.

# INTRODUCTION

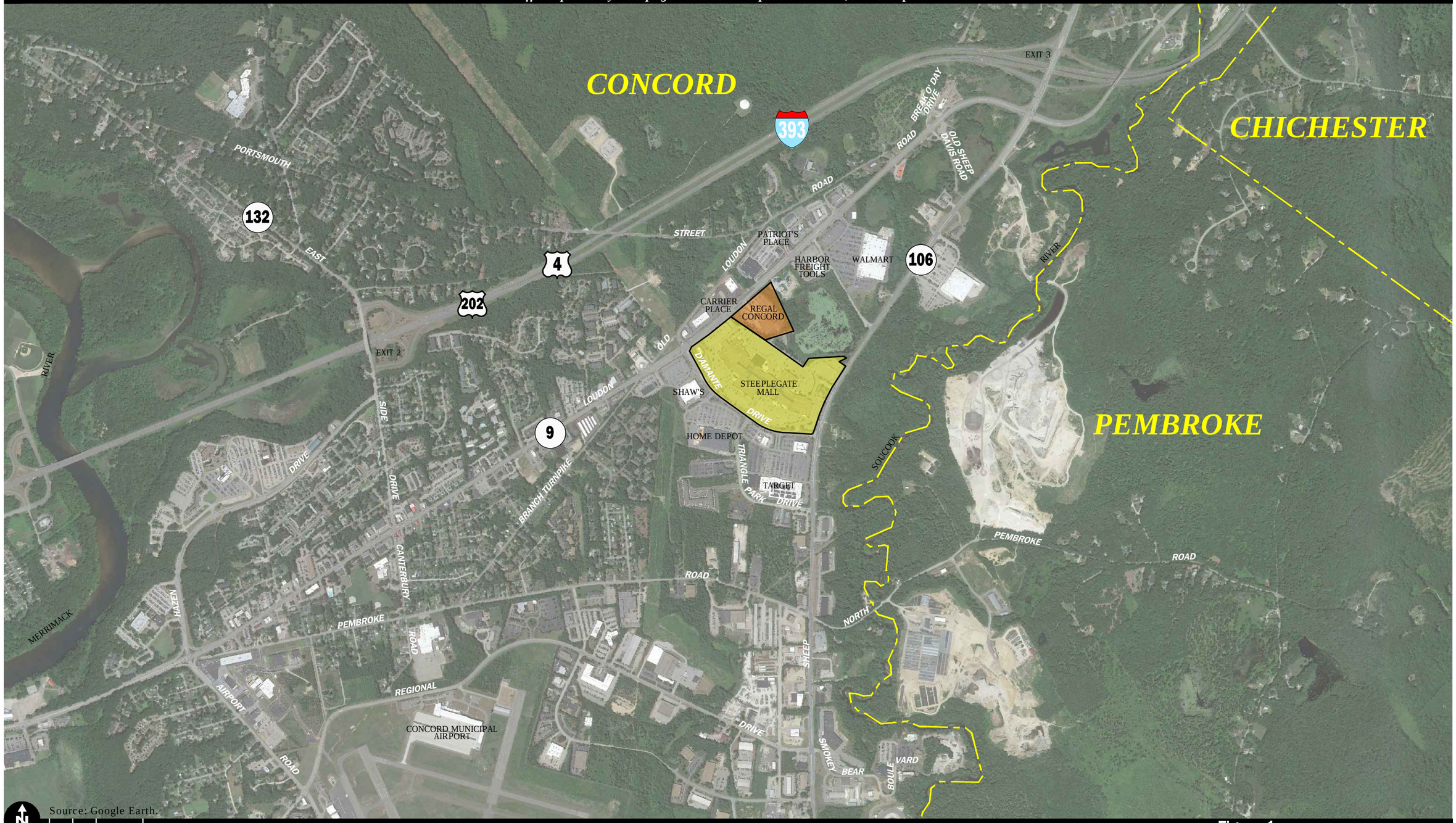
Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact Study (TIS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed redevelopment of the Steeplegate Mall shopping center and the adjacent Regal Concord movie theater located at 270 Loudon Road (NH Route 9) and 282 Loudon Road in Concord, New Hampshire, respectively, to accommodate a mixed-use development (hereafter referred to as the "Project"). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Loudon Road (NH Route 9), Sheep Davis Road (NH Route 106) and D'Amante Drive, and at specific intersections located along these roadways defined in consultation with the City of Concord and the New Hampshire Department of Transportation (NHDOT).

## PROJECT DESCRIPTION

The Project will entail the redevelopment of the Steeplegate Mall shopping center and the adjacent Regal Concord movie theater located at 270 Loudon Road and 282 Loudon Road in Concord, New Hampshire, respectively, to accommodate a mixed-use development.

The Project site (Steeplegate Mall and Regal Concord) encompasses a total approximately 61.2± acres of land that is bounded by commercial properties, a City of Concord wastewater treatment facility and areas of open and wooded space to the north; D'Amante Drive to the south; NH Route 106 to the east; and NH Route 9 to the west; and contains four (4) existing structures that include 543,939± square feet (sf) of retail space, a 5,110± sf restaurant, a 2,275± sf bank with a drive-through teller window and a 27,944± sf movie theater. Figure 1 depicts the Project site and the location of the Project in relation to the existing roadway network.

As proposed, the Project will entail the following primary elements: i) the demolition of the Regal Concord and the partial demolition of the Steeplegate Mall ; ii) the continued use of approximately 132,070± sf of retail space, the 5,110± sf restaurant and the 2,275± sf bank with a drive-through teller facility located within the Steeplegate Mall property; and iii) the construction of eight (8) new buildings that will include a 600-unit multifamily residential community, 65,170± sf of additional retail space, a 3,400± sf bank with a drive-through teller window and a 171,700± sf Costco Wholesale club with an associated 6,000± sf internal Market Delivery Operation (MDO) facility and a 24 vehicle fueling position (vfp) fueling facility. When complete, the Project site will




Source: Google Earth.

0 675 1350 Scale in Feet

**Figure 1**

**Site Location Map**

Vanasse & Associates inc

include an 600-unit multifamily residential community, 197,240± sf of retail space, two (2) banks with drive-through teller facilities (5,675± sf total), a 5,110± sf restaurant and a 171,700± sf Costco Wholesale club with an associated 6,000± sf internal MDO facility and a 24 vfp fueling facility.

Access to the Project site will be provided by way of six (6) driveways that will intersect NH Route 9 (two (2) driveways), NH Route 106 (one (1) driveway) and D'Amante Drive (three (3) driveways) , with the driveways along NH Route 9 and NH Route 106 situated at the location of the existing driveways that serve the Project site. The three (3) driveways along D'Amante Drive will be configured as follows: the existing full access driveway that currently serves the Project site and intersects the north side of D'Amante Drive opposite the Shaw's driveway; a new full access driveway that will intersect the north side of D'Amante Drive opposite Triangle Park Drive; and a new driveway that will intersect the north side of D'Amante Drive opposite the Target driveway where exiting movements from the Project site will be restricted to right-turn only. The existing Project site driveway that intersects the north side of D'Amante Drive approximately 260 feet east of the Target driveway will be closed in conjunction with the Project. In conjunction with the Project, a new internal roadway network will be constructed that will connect the south NH Route 9 driveway, the NH Route 106 driveway and the D'Amante Drive driveway and will ultimately be conveyed to the City of Concord as a public way.

On-site parking will be provided for 4,574 vehicles, consisting of 4,216 surface parking spaces and 358 parking spaces to be located in three (3) parking garages located beneath the residential units. The proposed parking supply is below the minimum parking requirements of Section 27-7-2, *Off-Street Parking Requirements*, of the Zoning Ordinance of the City of Concord, New Hampshire.[6] A shared parking analysis has been prepared for the Project as a separate document in order to demonstrate the adequacy of the proposed parking supply to meet the parking requirements of the Project.

## STUDY METHODOLOGY

This study was prepared in consultation with the City of Concord and the NHDOT; was performed in accordance: i) the NHDOT guidelines for the preparation of Traffic Impact Studies (TISs); ii) the standards of the Traffic Engineering and Transportation Planning Professions for the preparation of such reports; and iii) the scoping determination issued by NHDOT and the City for the Project; and was conducted in three distinct stages.

The first stage of the study involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics, pedestrian and bicycle facilities, and public transportation services; observations of traffic flow; and the collection of daily and peak-period traffic counts.

In the second stage of the study, future conditions on the transportation system were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future demands

[6]Pursuant to the Zoning Ordinance, the following parking requirements apply to the Project: 1.0 parking spaces per 250 sf are required for a retail use under 100,000 sf; 1.0 parking spaces per 200 sf are required for a retail use under 100,000 sf; 1.0 parking spaces per fuel pump are required for a fueling station; 1.0 parking space per 75 sf are required for a restaurant; 1.0 parking space per 50 sf are required for an indoor recreational facility; 1.0 parking spaces per 300 sf are required for a commercial recreational complex; 1.0 parking spaces per 120 sf are required for an indoor health and fitness center; 1.0 parking spaces per 200 sf are required for a bank use with a drive-through window; and 2.0 parking spaces per unit are required for a multifamily residential use. Applying these parking requirements to the constituent components of the Project results in a parking requirement of 6,909 parking spaces.

on the transportation system that are expected due to growth independent of the Project. In accordance with NHDOT guidelines for the preparation of TISs, four future conditions were evaluated: 1) 2025 No-Build conditions *without* the Project; 2) 2025 Opening-Year Build conditions *with* the Project; 3) 2035 No-Build conditions *without* the Project; and 4) 2035 Build conditions (ten-year projection from opening-year) *with* the Project. The analyses conducted in stage two of the study identify existing or projected future roadway capacity and traffic safety issues.

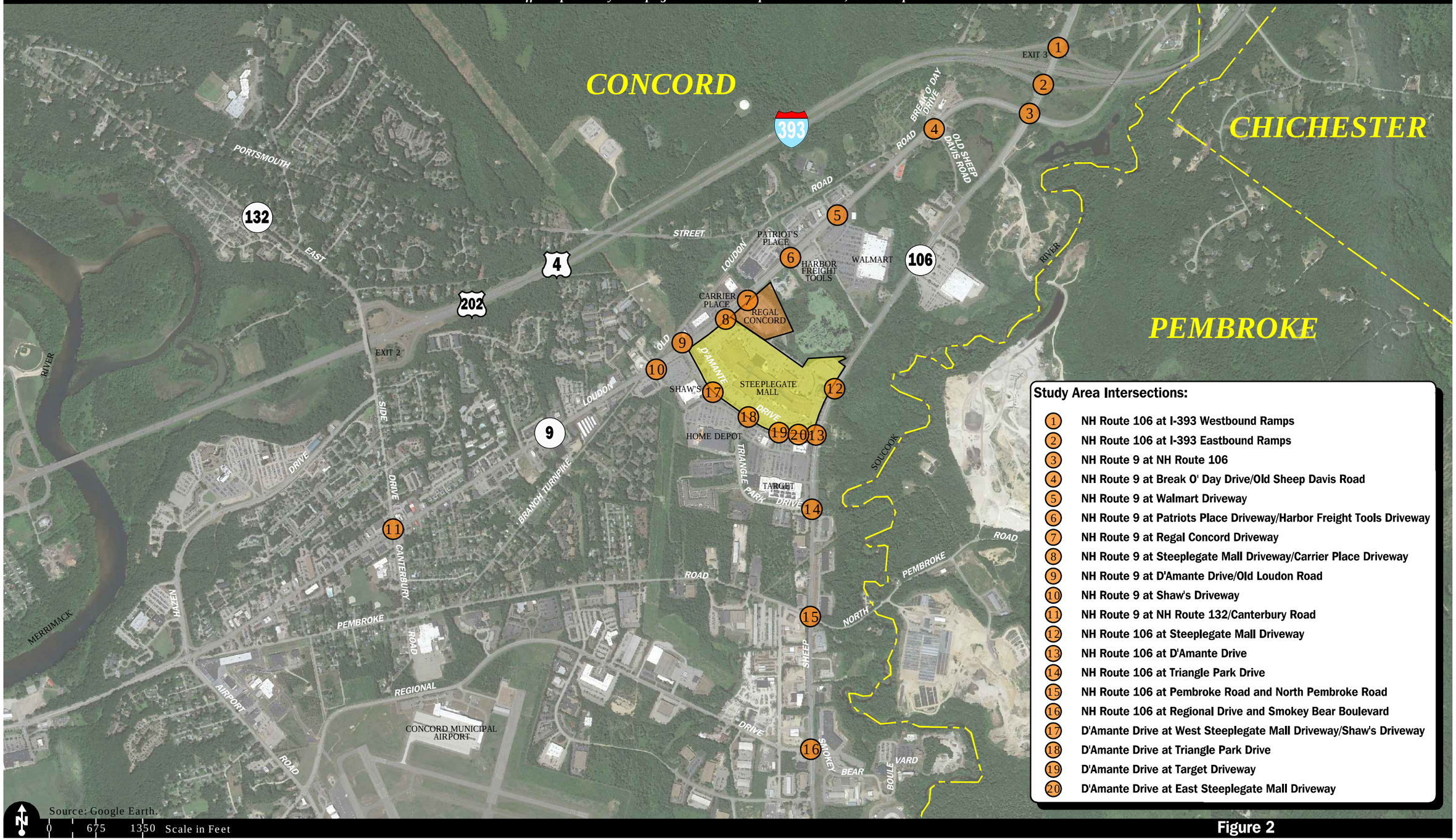
The third stage of the study presents and evaluates measures to address roadway and intersection capacity issues and safety concerns, if any, identified in stages one and two of the study.

# EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in July 2023 and in January 2024. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that was assessed for the Project is consistent with the study area that was defined in the scoping determination issued by NHDOT and the City for the Project, and consisted of NH Route 9, NH Route 106 and D'Amante Drive, and the following specific intersections which are listed below and depicted on Figure 2:

1. NH Route 106 at the Interstate 393 Westbound Ramps
2. NH Route 106 at the Interstate 393 Eastbound Ramps
3. NH Route 9 at NH Route 106
4. NH Route 9 at Break O'Day Drive and Old Sheep Davis Road
5. NH Route 9 at the Walmart driveway
6. NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway
7. NH Route 9 at the Regal Concord driveway
8. NH Route 9 at the Steeplegate Mall driveway and the Carrier Place driveway
9. NH Route 9 at D'Amante Drive and Old Loudon Road
10. NH Route 9 at the Shaw's driveway
11. NH Route 9 at NH Route 132 and Canterbury Road
12. NH Route 106 at the Steeplegate Mall driveway
13. NH Route 106 at D'Amante Drive
14. NH Route 106 at Triangle Park Drive
15. NH Route 106 at Pembroke Road and North Pembroke Road
16. NH Route 106 at Regional Drive and Smokey Bear Boulevard
17. D'Amante Drive at the West Steeplegate Mall driveway and the Shaw's driveway
18. D'Amante Drive at Triangle Park Drive
19. D'Amante Drive at the Target driveway
20. D'Amante Drive at the East Steeplegate Mall driveway

The following describes the study area roadways and intersections.




**Study Area Intersections:**

1. NH Route 106 at I-393 Westbound Ramps
2. NH Route 106 at I-393 Eastbound Ramps
3. NH Route 9 at NH Route 106
4. NH Route 9 at Break O' Day Drive/Old Sheep Davis Road
5. NH Route 9 at Walmart Driveway
6. NH Route 9 at Patriots Place Driveway/Harbor Freight Tools Driveway
7. NH Route 9 at Regal Concord Driveway
8. NH Route 9 at Steeplegate Mall Driveway/Carrier Place Driveway
9. NH Route 9 at D'Amante Drive/Old Loudon Road
10. NH Route 9 at Shaw's Driveway
11. NH Route 9 at NH Route 132/Canterbury Road
12. NH Route 106 at Steeplegate Mall Driveway
13. NH Route 106 at D'Amante Drive
14. NH Route 106 at Triangle Park Drive
15. NH Route 106 at Pembroke Road and North Pembroke Road
16. NH Route 106 at Regional Drive and Smokey Bear Boulevard
17. D'Amante Drive at West Steeplegate Mall Driveway/Shaw's Driveway
18. D'Amante Drive at Triangle Park Drive
19. D'Amante Drive at Target Driveway
20. D'Amante Drive at East Steeplegate Mall Driveway

Source: Google Earth.

0 675 1350 Scale in Feet

**Figure 2**

**Study Area Map**

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## ROADWAYS

### NH Route 9

- Four-lane urban minor arterial roadway under City jurisdiction;
- Traverses a general northeast-southwest alignment (NH Route 9 is designated as an east-west route) and provides full access interchange with Interstate 93 to the west of the Project site (Exit 14);
- Provides four (4) 11 to 12-foot wide travel lanes within the study area that are separated by a raised median north of the Shaw's driveway by a double yellow centerline to the south, with 2 to 12-foot wide marked shoulders and additional turning lanes provided at major intersections;
- The posted speed limit is 30 miles per hour (mph) within the study area;
- Sidewalks are provided along both sides of the roadway within the study area to the Walmart driveway where the sidewalk continues along the south side to Old Loudon Road;
- Illumination is provided by way of streetlights mounted on wood poles;
- Land use within the study area consists of the Project site and residential and commercial properties.

### NH Route 106

- Two lane urban minor arterial roadway under NHDOT jurisdiction;
- Traverses a general north-south alignment and provides a full access interchange with Interstate 393 to the north of the Project site (Exit 3);
- Provides two (2) 11 to 12-foot wide travel lanes that are separated by a raised or painted median north of Triangle Park Drive and by a center-turn lane that accommodates left-turning vehicles in both directions to the south, with 1 to 12-foot wide marked shoulders and additional turning lanes provided at major intersections;
- The posted speed limit is 40 mph within the study area;
- Sidewalks are not provided within the study area;
- Illumination is provided by way of streetlights mounted on steel poles;
- Land use within the study area consists of the Project site and residential and commercial properties.

### D'Amante Drive

- Three to four-lane local access roadway under City jurisdiction;
- Traverses a general east-west alignment between NH Route 9 and NH Route 106;
- Provides two (2) 10 to 12-foot wide travel lanes in the eastbound direction and one (1) 11 to 17-foot wide travel lane in the westbound direction that are separated by a raised or painted median, with 1 to 2-foot wide marked shoulders and additional travel lanes provided at major intersections;
- The posted speed limit is 30 mph within the study area;

- A sidewalk is provided along the south side of the roadway;
- Illumination is provided by way of streetlights mounted on steel poles;
- Land use within the study area consists of the Project site and commercial properties.

## INTERSECTIONS

Table 1 and Figure 3 summarize existing lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in July 2023 and January 2024.

**Table 1**
**STUDY AREA INTERSECTION DESCRIPTION**

| Intersection | Traffic Control Type[a] | No. of Travel Lanes Provided | Shoulder Provided? (Yes/No/Width) | Pedestrian Accommodations? (Yes/No/Description) | Bicycle Accommodations? (Yes/No/Description) |
|---|---|---|---|---|---|
| NH Rte. 106/ I-393 WB Ramps | TS | 2 left-turn lanes and 2 through lanes on NH Rte. 106 northbound; 2 through lanes and 1 channelized right-turn lane on NH Rte. 106 southbound; 1 left-turn lane and 1 right-turn lane on the I-393 WB off-ramp | Yes; 5 to 6-feet on NH Rte. 106; 2 to 3-feet on the I-393 WB ramps | No | Yes; Shared traveled-way[b] on NH Rte. 106 |
| NH Rte. 106/ I-393 EB Ramps | TS | 2 through lanes and 1 right-turn lane on NH Rte. 106 northbound; 1 shared left-turn/through lane and a through lane on NH Rte. 106 southbound; 2 left-turn lanes and 1 channelized right-turn lane on the I-393 EB off-ramp | Yes; 3 to 6-feet on NH Rte. 106; 2 to 10-feet on the I-393 WB ramps | No | Yes; Shared traveled-way on NH Rte. 106 |
| NH Rte. 9/ NH Rte. 106 | TS | 1 left-turn lane, 2 through lanes and 1 right-turn lane on NH Rte. 106 northbound; 1 left-turn lane, 2 through lanes and 1 channelized right-turn lane on NH Rte. 106 southbound; 2 left-turn lanes, 1 through lane and 1 right-turn lane on NH Rte. 9 eastbound; 1 left-turn lane, 1 shared left-turn/through lane, 1 through lane and 1 right turn lane on NH Rte. 9 westbound | Yes; 2 to 12-feet on NH Rte. 9 and NH Rte. 106; | No | Yes; Shared traveled-way on NH Rte. 9 and NH Rte. 106 |
| NH Rte. 9/ Break O' Day Dr./Old Sheep Davis Rd. | S | 1 left-turn lane, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9; 1 general purpose travel lane on Break O'Day Dr. and Old Sheep Davis Rd. | Yes; 6-feet on NH Rte. 9 | No | Yes; Shared traveled-way on NH Rte. 9 |

See notes at end of table.

**Table 1 (Continued)**
**STUDY AREA INTERSECTION DESCRIPTION**

| Intersection | Traffic Control Type[a] | No. of Travel Lanes Provided | Shoulder Provided? (Yes/No/Width) | Pedestrian Accommodations? (Yes/No/Description) | Bicycle Accommodations? (Yes/No/Description) |
|---|---|---|---|---|---|
| NH Rte. 9/ Walmart dwy | TS | 1 left-turn lane, 2 through lanes and 1 channelized right-turn lane on NH Rte. 9 eastbound; 1 left-turn lane, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9 westbound; 1 shared left-turn/through lane and 1 right-turn lane on the Walmart dwy and the private dwy. | Yes; 4 to 8-feet on NH Rte. 9 | Yes; Sidewalks along both sides of NH Rte. 9; Crosswalks provided across the NH Rte. 9 west leg and across the Walmart dwy and the private dwy.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on NH Rte. 9 |
| NH Rte. 9/ Patriots Place dwy/Harbor Freight Tools dwy | TS | 1 left-turn lane, 2 through lanes and 1 right-turn lane on NH Rte. 9 eastbound; 1 left-turn lane, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9 westbound; 1 shared left-turn/through lane and 1 right-turn lane on the Patriots Place dwy and the Harbor Freight Tools dwy. | Yes; 5 to 7-feet on NH Rte. 9 | Yes; Sidewalks along both sides of NH Rte. 9, along the west side of the Patriots Place dwy and along the Harbor Freight Tools dwy.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on NH Rte. 9 |
| NH Rte. 9/ Regal Concord dwy | S | 1 through lane and 1 shared through/right-turn lane on NH Rte. 9 eastbound; 1 left-turn lane and 2 through lanes on NH Rte. 9 westbound; 1 general purpose travel lane on the Regal Concord dwy. | Yes; 4 to 6-feet on NH Rte. 9 | Yes; Sidewalks along both sides of NH Rte. 9 | Yes; Shared traveled-way on NH Rte. 9 |
| NH Rte. 9/ Steeplegate Mall dwy/Carrier Place dwy | TS | 1 left-turn lane, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9; 1 shared left-turn/through lane and 1 right-turn lane on the Steeplegate Mall dwy and the Carrier Place dwy. | Yes; 6-feet on NH Rte. 9 | Yes; Sidewalks along both sides of NH Rte. 9 and along the east side of the Carrier Place dwy; Crosswalks provided across the NH Rte. 9 west leg, the Steeplegate Mall dwy and the Carrier Place dwy.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on NH Rte. 9 |

See notes at end of table.

**Table 1 (Continued)**
**STUDY AREA INTERSECTION DESCRIPTION**

| Intersection | Traffic Control Type[a] | No. of Travel Lanes Provided | Shoulder Provided? (Yes/No/Width) | Pedestrian Accommodations? (Yes/No/Description) | Bicycle Accommodations? (Yes/No/Description) |
|---|---|---|---|---|---|
| NH Rte. 9/ D'Amante Dr./ Old Loudon Rd. | TS | 1 left-turn lane, 2 through lanes and 1 right-turn lane on NH Rte. 9 eastbound; 2 left-turn lanes, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9 westbound; 1 left-turn lane, 1 shared left-turn/through lane and 1 right-turn lane on D'Amante Dr.; 1 shared left-turn/through lane and 1 right-turn lane on Old Loudon Rd. | Yes; 5 to 6-feet on NH Rte. 9; 2-feet on D'Amante Dr.; 5-feet on Old Loudon Rd. | Yes; Sidewalks along both sides of NH Rte. 9, along the west side of D'Amante Dr. and along the west side of Old Loudon Rd.; Crosswalks provided across the NH Rte. 9 west leg, D'Amante Dr. and Old Loudon Rd.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on NH Rte. 9 and Old Loudon Rd. |
| NH Rte. 9/ Shaw's dwy | S | 1 through lane and 1 shared through/right-turn lane on NH Rte. 9 eastbound; 1 left-turn lane and 2 through lanes on NH Rte. 9 westbound; 1 general-purpose travel lane on the Shaw's dwy. | Yes; 5-feet on NH Rte. 9 | Yes; Sidewalks along both sides of NH Rte. 9 | Yes; Shared traveled-way on NH Rte. 9 |
| NH Rte. 9/ NH Rte. 132/ Canterbury Rd. | TS | 1 left-turn lane, 1 through lane and 1 shared through/right-turn lane on NH Rte. 9; 1 left-turn lane and 1 shared through/ right-turn lane on NH Rte. 132 and Canterbury Rd. | Yes; 1-foot on NH Rte. 132 and 2-feet on Canterbury Rd. | Yes; Sidewalks along both sides of NH Rte. 9 and along NH Rte. 132 and along the west side of Canterbury Rd.; Crosswalks provided across all legs; pedestrian traffic signal equipment and phasing are provided | Yes; bicycle lanes provided along both sides of NH Rte, 9 |
| NH Rte. 106/ Steeplegate Mall dwy | S | 1 left-turn lane and 1 through lane on NH Rte. 106 northbound; 1 though lane and 1 right-turn lane on NH Rte. 106 southbound; 1 left-turn lane and 1 right-turn lane on the Steeplegate Mall dwy. | Yes; 4 to 5-feet on NH Rte. 106 | No | Yes; Shared traveled-way on NH Rte. 106 |
| NH Rte. 106/ D'Amante Dr. | TS | 1 left-turn lane and 1 through lane on NH Rte. 106 northbound; 1 though lane and 1 right-turn lane on NH Rte. 106 southbound; 1 left-turn lane and 1 right-turn lane on D'Amante Dr. | Yes; 3 to 5-feet on NH Rte. 106 and 2-feet on D'Amante Dr. | Yes; sidewalk along the south side of D'Amante Dr. | Yes; Shared traveled-way on NH Rte. 106 |

See notes at end of table.

**Table 1 (Continued)**
**STUDY AREA INTERSECTION DESCRIPTION**

| Intersection | Traffic Control Type[a] | No. of Travel Lanes Provided | Shoulder Provided? (Yes/No/Width) | Pedestrian Accommodations? (Yes/No/Description) | Bicycle Accommodations? (Yes/No/Description) |
|---|---|---|---|---|---|
| NH Rte. 106/ Triangle Park Dr. | S | 1 left-turn lane and 1 through lane on NH Rte. 106 northbound; 1 though lane and 1 right-turn lane on NH Rte. 106 southbound; 1 general-purpose travel lane on Triangle Park Dr. | Yes; 1 to 6-feet on NH Rte. 106 | No | Yes; Shared traveled-way on NH Rte. 106 |
| NH Rte. 106/ Pembroke Rd./ N. Pembroke Rd. | TS | 1 left-turn lane, 1 through lane and 1 right-turn lane on NH Rte. 106; 1 left-turn lane and 1 shared through/right-turn lane on Pembroke Rd. and N. Pembroke Rd. | Yes; 1 to 6-feet on NH Rte. 106 and 2-feet on Pembroke Rd. | No | Yes; Shared traveled-way on NH Rte. 106 and Pembroke Rd. |
| NH Rte. 106/ Regional Dr./ Smokey Bear Blvd | TS | 1 left-turn lane, 1 through lane and 1 right-turn lane on NH Rte. 106; 1 left-turn lane and 1 shared through/right-turn lane on Regional Dr. and Smokey Bear Blvd | Yes; 3 to 5-feet on NH Rte. 106 and 2 to 4-feet on Regional Dr. | Yes; sidewalk along the north side of Regional Dr.; Crosswalks provided across the NH Rte. 106 south leg and Regional Dr.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on NH Rte. 106, Regional Dr. and Smokey Bear Blvd |
| D'Amante Dr./ West Steeplegate Mall dwy/Shaw's dwy | TS | 1 left-turn lane, 1 through lane and 1 shared though/right-turn lane on D'Amante Dr. northbound; 2 left-turn lanes, 1 through lane and 1 shared though/right-turn lane on D'Amante Dr. southbound; 1 shared left-turn/through lane and 1 right-turn lane on the west Steeplegate Mall dwy; 1 shared left-turn/through lane and 1 shared though/right-turn lane on the Shaw's dwy | Yes; 2-feet on D'Amante Dr. | Yes; sidewalk along the south side of D'Amante Dr.; Crosswalks provided across the D'Amante Dr. east leg and the Shaw's dwy.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on D'Amante Dr. |
| D'Amante Dr./ Triangle Park Dr. | TS | 1 through lane and 1 shared through/right-turn lane on D'Amante Dr. eastbound; 1 left-turn lane and 1 through lane on D'Amante Dr. westbound; 1 left-turn lane and 1 right-turn lane on Triangle Park Dr. | Yes; 2-feet on D'Amante Dr. and 2 to 10-feet on Triangle Park Dr. | Yes; sidewalks along the south side of D'Amante Dr. and along the west side of Triangle Park Dr.; Crosswalks provided across the D'Amante Dr. west leg and Triangle Park Dr.; pedestrian traffic signal equipment and phasing are provided | Yes; Shared traveled-way on D'Amante Dr. |

See notes at end of table.

**Table 1 (Continued)**
**STUDY AREA INTERSECTION DESCRIPTION**

| Intersection | Traffic Control Type[a] | No. of Travel Lanes Provided | Shoulder Provided? (Yes/No/Width) | Pedestrian Accommodations? (Yes/No/Description) | Bicycle Accommodations? (Yes/No/Description) |
|---|---|---|---|---|---|
| D'Amante Dr./ Target dwy | S | 1 through lane and 1 shared through/right-turn lane on D'Amante Dr. eastbound; 1 left-turn lane and 1 through lane on D'Amante Dr. westbound; 1 left-turn lane and 1 right-turn lane on the Target dwy | Yes; 1 to 2-feet on D'Amante Dr. | Yes; sidewalk along the south side of D'Amante Dr.; Crosswalk provided across the Target dwy. | Yes; Shared traveled-way on D'Amante Dr. |
| D'Amante Dr./ East Steeplegate Mall dwy | S | 1 left-turn lane and 2 through lanes on D'Amante Dr. eastbound; 1 shared through/right-turn lane on D'Amante Dr. westbound; 1 left-turn lane and 1 right-turn lane on the east Steeplegate Mall dwy | Yes; 2-feet on D'Amante Dr. | Yes; sidewalk along the south side of D'Amante Dr.; a mid-block crosswalk is provided across D'Amante Dr. west of the intersection | Yes; Shared traveled-way on D'Amante Dr. |

[a]TS = traffic signal control; S = STOP control.
[b]Combined shoulder and travel lane width equal to or exceed 14 feet.

## TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, turning movement counts (TMCs) and vehicle classification counts were completed in July 2023 and in January 2024. The ATR counts were conducted on NH Route 9 and on NH Route 106 in the vicinity of the Project site on July 13th through 15th, 2023 (Thursday through Saturday, inclusive) and on July 22, 2023 (Saturday) in order to record weekday and Saturday traffic conditions along these roadways over an extended period, with weekday morning (7:00 to 9:00 AM) and evening (3:00 to 6:00 PM) peak-period TMCs performed at the study intersections on Thursday, July 13, 2023 and on Thursday, January 18, 2024, and during the Saturday midday peak period (11:00 AM to 2:00 PM) on July 15, 2023 and on January 20, 2024. These time periods were selected for analysis purposes as they are representative of the peak-traffic-volume hours for both the Project and the adjacent roadway network.

### Traffic-Volume Adjustments

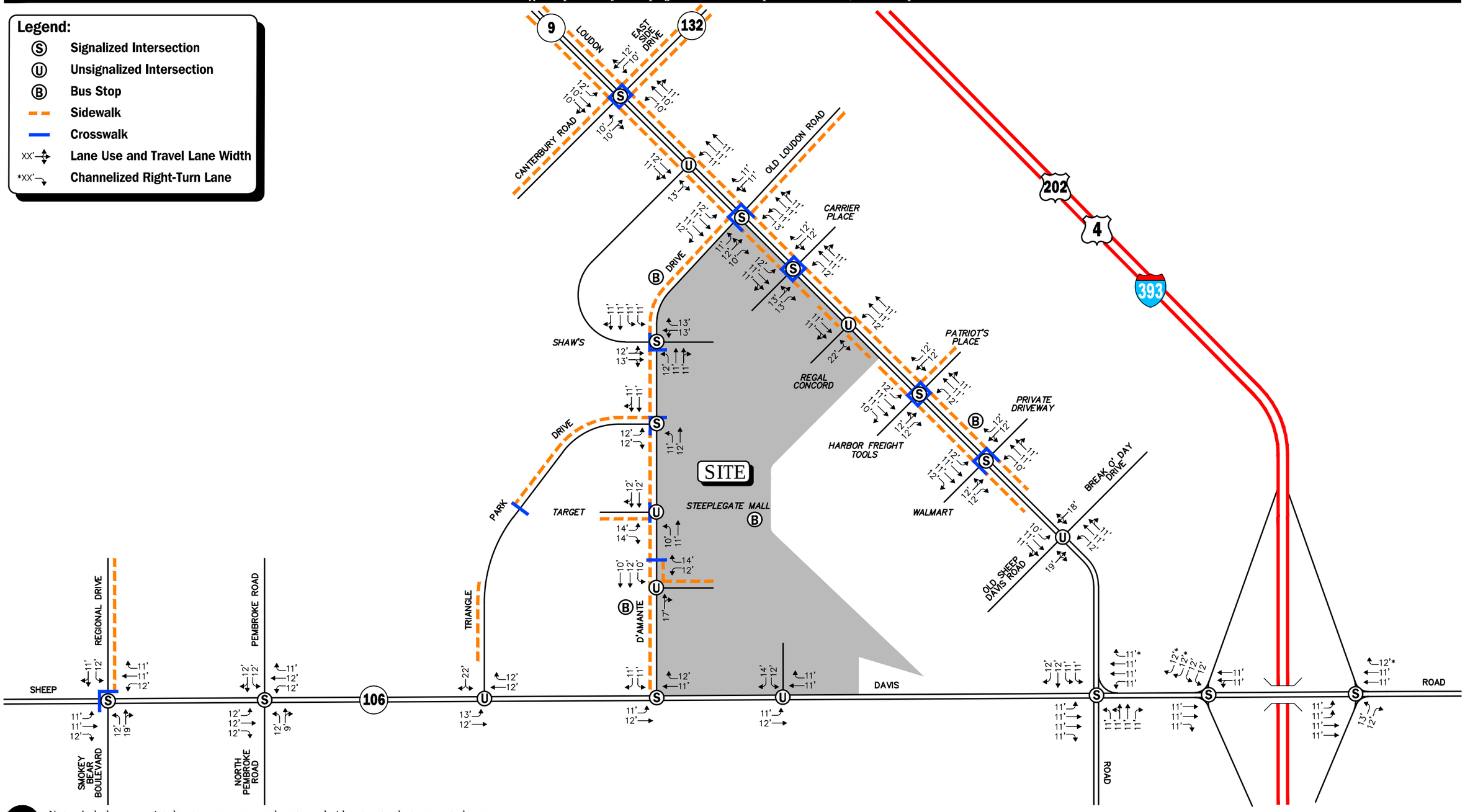
In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, NHDOT weekday seasonal factors for Group 4 roadways ("Urban Highways") were reviewed.[7] Based on a review of this data, it was determined that traffic volumes for the months of January and July are approximately 23 percent and 1 percent below peak-month conditions, respectively, and, therefore, the raw traffic count data that forms the basis of this assessment was adjusted upward accordingly to represent peak-month conditions in accordance with NHDOT standards.

In order to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic, traffic volume data collected at NHDOT Continuous Count Station No. 62099056 in January and July 2019 were compared to data collected at the same count station in July 2023 and

[7]NHDOT; Year 2019 Monthly Data, Group 4 Averages: Urban Highways.

**Legend:**

- Ⓢ Signalized Intersection
- Ⓤ Unsignalized Intersection
- Ⓑ Bus Stop
- Sidewalk
- Crosswalk
- XX' Lane Use and Travel Lane Width
- *XX' Channelized Right-Turn Lane




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 3**

**Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities**

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in January 2024. Table 2 summarizes the COVID-19 adjustments that were applied to the July 2023 and January 2024 traffic count data.

**Table 2**
**COVID-19 ADJUSTMENT FACTORS**

| Time Period | July 2023 | January 2024 |
|---|---|---|
| *Average Weekday:* | *+3.0%* | Not Applicable |
| *Weekday Morning Peak-Hour:* | *+7.7%* | *+4.4%* |
| *Weekday Evening Peak-Hour:* | *+5.2%* | *+4.6%* |
| *Saturday:* | *+4.2%* | Not Applicable |
| *Saturday Midday Peak-Hour:* | No Adjustment Required | *+6.3%* |

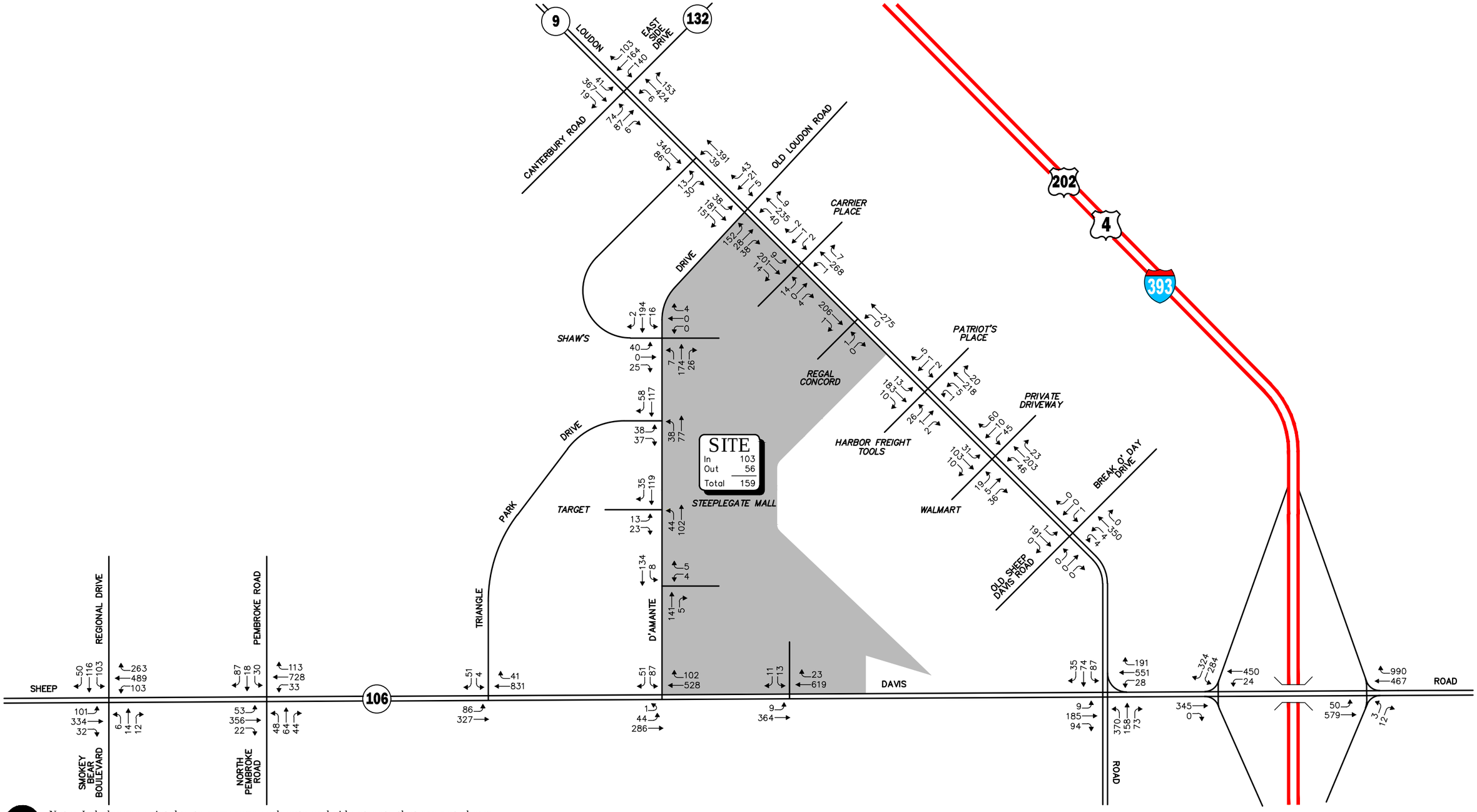
The July 2023 traffic volumes were also adjusted to 2024 conditions by applying a general background traffic growth rate of 1.0 percent (discussed in further detail in the *General Background Traffic Growth* section of this report).

The 2024 Existing peak-month traffic volumes are summarized in Table 3, with the weekday morning, weekday evening and Saturday midday peak-month, peak-hour traffic volumes graphically depicted on Figures 4, 5 and 6, respectively. Note that the peak-hour traffic volumes that are presented in Table 3 were obtained from the aforementioned figures.

**Table 3**
**2024 EXISTING PEAK-MONTH TRAFFIC VOLUMES**

| Location/Peak-Hour | AWT[a] | Saturday[b] | VPH[c] | K Factor[d] | Directional Distribution[e] |
|---|---|---|---|---|---|
| *NH Route 9, west of the Regal Concord driveway:* | 11,870 | 12,350 | -- | -- | -- |
| Weekday Morning (8:00 – 9:00 AM) | -- | -- | 483 | 4.1 | 57.1% WB |
| Weekday Evening (3:45 – 4:45 PM) | -- | -- | 1,177 | 9.9 | 50.9% EB |
| Saturday Midday (11:45 AM – 12:45 PM) | -- | -- | 1,560 | 12.6 | 51.0% EB |
| *NH Route 106, north of D'Amante Drive:* | 16,390 | 12,990 | -- | -- | -- |
| Weekday Morning (8:00 – 9:00 AM) | -- | -- | 1,003 | 6.1 | 62.8% SB |
| Weekday Evening (3:45 – 4:45 PM) | -- | -- | 1,719 | 10.5 | 62.2% NB |
| Saturday Midday (11:45 AM – 12:45 PM) | -- | -- | 1,471 | 11.3 | 56.6% NB |

[a]Average weekday traffic in vehicles per day.
[b]Saturday traffic in vehicles.
[c]Vehicles per hour.
[d]Percent of daily traffic occurring during the peak-hour.
[e]Percent traveling in peak direction.
NB = northbound, SB = southbound, EB = eastbound, WB = westbound




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 4**

**2024 Existing**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

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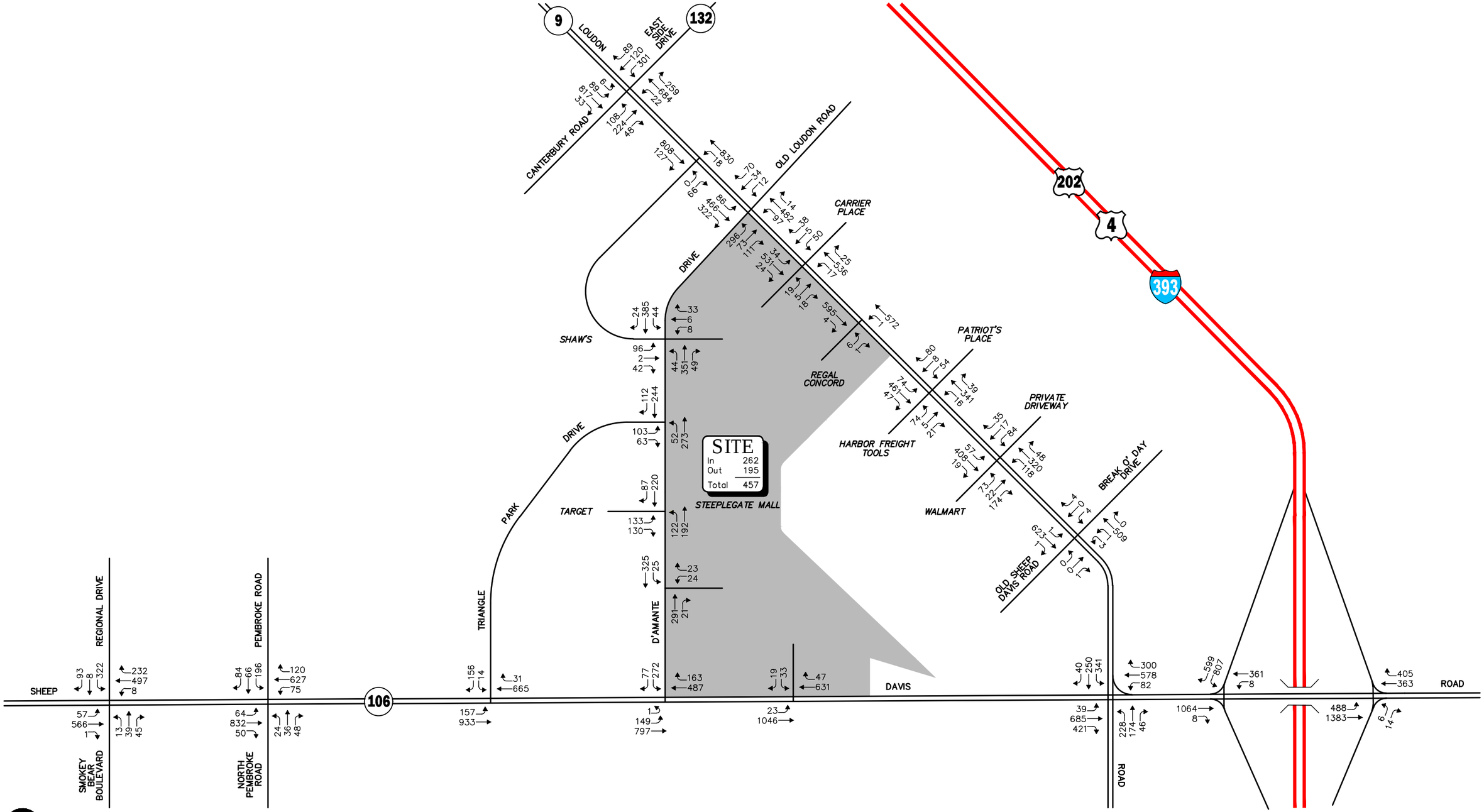


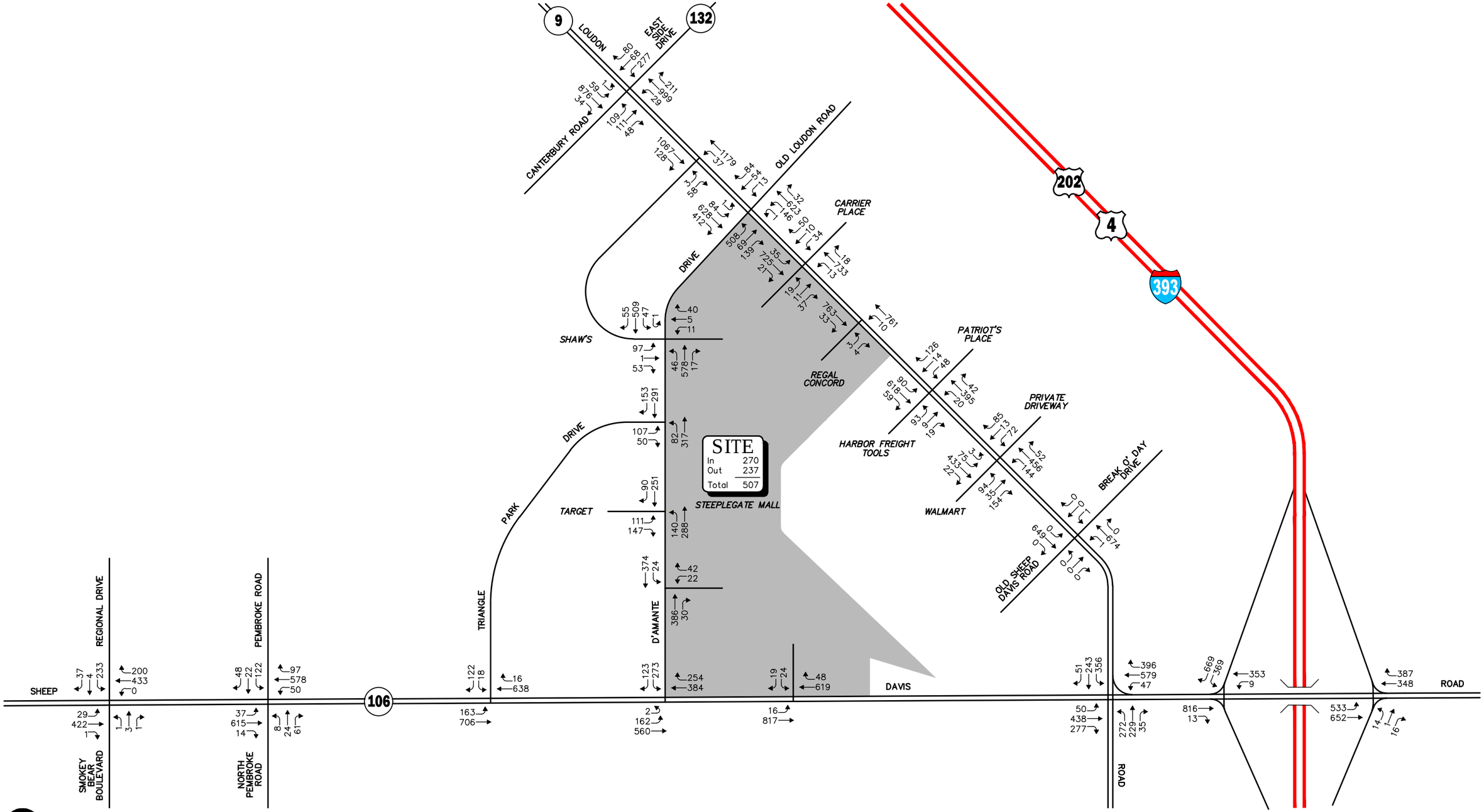

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 5**

**2024 Existing**
**Peak-Month**
**Weekday Evening**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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**Figure 6**

**2024 Existing**
**Peak-Month**
**Saturday Midday**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc

As can be seen in Table 2, NH Route 9 in the vicinity of the Project site was found to accommodate approximately 11,870 vehicles on an average weekday and 12,350 vehicles on a Saturday (two-way, 24-hour volumes) under peak-month conditions, with approximately 483 vehicles per hour (vph) during the weekday morning peak-hour, 1,177 vph during the weekday evening peak-hour and 1,560 vph during the Saturday midday peak-hour.

NH Route 106 in the vicinity of the Project site was found to accommodate approximately 16,390 vehicles on an average weekday and 12,990 vehicles on a Saturday under peak-month conditions, with approximately 1,003 vehicles per hour (vph) during the weekday morning peak-hour, 1,719 vph during the weekday evening peak-hour and 1,471 vph during the Saturday midday peak-hour.

## PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in September 2023. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study area intersections. As detailed on Figure 2, sidewalks are generally provided along one or both sides of NH Route 9, D'Amante Drive, NH Route 132, Canterbury Road, Triangle Park Drive and Regional Drive, with marked crosswalks provided for crossing one or more legs of the study area intersections. Pedestrian traffic signal equipment and phasing are provided as a part of the traffic signal systems at the signalized intersections.

Bicycle lanes are provided along NH Route 9 in the vicinity of the NH Route 9/ NH Route 132/Canterbury Road intersection. The remainder of the study area roadways generally provide sufficient width to accommodate bicycle travel in a shared traveled-way configuration (i.e., bicyclists and motor vehicles sharing the traveled-way) where marked bicycle lanes or other accommodations are not currently provided.[8]

## PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the Concord Area Transit (CAT) and are accessible at the Project site. CAT operates fixed route bus service along NH Route 9 and D'Amante Drive by way of the Heights Route, with one stop located within the Project site and two (2) stops located along D'Amante Drive proximate the Project site. CAT also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA).

The public transportation schedules and fare information are provided in the Appendix.

[8] A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.

## SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on NH Route 9 and on NH Route 106 in the vicinity of the Project site in conjunction with the ATR counts. Table 4 summarizes the vehicle travel speed measurements.

**Table 4**
**VEHICLE TRAVEL SPEED MEASUREMENTS**

| | NH Route 9 | | NH Route 106 | |
|---|---|---|---|---|
| | Eastbound | Westbound | Northbound | Southbound |
| Mean Travel Speed (mph) | 33 | 34 | 36 | 38 |
| 85th Percentile Speed (mph) | 40 | 40 | 41 | 44 |
| Statutory Speed Limit (mph) | 30 | 30 | 40 | 40 |

mph = miles per hour.

As can be seen in Table 4, the mean vehicle travel speed along NH Route 9 in the vicinity of the Project site was found to be 33 mph in the eastbound direction and 34 mph westbound. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be 40 mph in both the east and westbound directions, which is 10 mph above the posted speed limit (30 mph). The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances and is often used in establishing posted speed limits.

The mean vehicle travel speed along NH Route 106 in the vicinity of the Project site was found to be 36 mph in the northbound direction and 38 mph southbound, with the measured 85th percentile vehicle travel speed found to be 41 mph in the northbound direction and 44 mph southbound, which is slightly above the posted speed limit (40 mph).

## MOTOR VEHICLE CRASH DATA

A summary of the motor vehicle crash history for the study area intersections was provided by the Concord Police Department for the most recent four-year period available (2020 through 2023, inclusive) in order to examine overall motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and presented in Table 5.

As can be seen in Table 5, with the exception of the NH Route 9/Walmart driveway and NH Route 9/D'Amante Drive/Old Loudon Road intersections, the study area intersections experienced an average of 10.0 or fewer reported motor vehicle crashes per year over the four-year review period. The majority of the crashes were reported to have occurred on a weekday; under clear weather conditions; during daylight; and resulted in property damage only. The crash type (i.e., angle, rear-end, sideswipe, etc.) could not be readily discerned from the data that was provided.

The NH Route 9/Walmart driveway intersection was found to have experienced a total of 71 total reported motor vehicle crashes over the four-year review period, or an average of 17.75 crashes per year, the majority of which occurred on a weekday; under clear weather conditions; during daylight; and resulted in property damage only. The NH Route 9/D'Amante Drive/Old Loudon Road intersection was found to have experienced a total of 53 total reported motor vehicle crashes over the four-year review period, or an average of 13.25 crashes per year, the majority of which occurred on a weekday; under clear weather conditions; during daylight; and resulted in property damage only. It should be noted that the crash data that was provided for these intersections may include collisions that occurred within the parking fields of the adjacent commercial properties and are not related to conditions at the intersections.

One motor vehicle crash was reported over the four-year review period that resulted in a fatality. The crash occurred at the NH Route 9/NH Route 132/Canterbury Road intersection at 4:45 PM on August 13, 2023 and involved an angle-type collision between a vehicle entering the roadway and a motorcyclist travelling along NH Route 9.

The Concord Police Department crash summaries are provided in the Appendix.

**Table 5**
**MOTOR VEHICLE CRASH DATA SUMMARY[a]**

| | NH Rte. 106/ I-393 WB Ramps | NH Rte. 106/ I-393 EB Ramps | NH Rte. 9/ NH Rte. 106 | NH Rte. 9/ Break O' Day Dr./Old Sheep Davis Rd. | NH Rte. 9/ Walmart dwy | NH Rte. 9/ Patriots Place dwy/Harbor Freight Tools dwy | NH Rte. 9/ Regal Concord dwy | NH Rte. 9/ Steeplegate Mall dwy/Carrier Place dwy | NH Rte. 9/ D'Amante Dr./ Old Loudon Rd. | NH Rte. 9/ Shaw's dwy |
|---|---|---|---|---|---|---|---|---|---|---|
| Traffic Control Type:[b] | TS | TS | TS | U | TS | TS | U | TS | TS | U |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |
| Average | 2.50 | 7.00 | 8.75 | 0.00 | 17.75 | 1.25 | 1.00 | 2.00 | 13.25 | 0.25 |
| Rate[c] | 0.23 | 0.61 | 0.68 | 0.00 | 3.18 | 0.25 | 0.21 | 0.38 | 1.58 | 0.03 |
| *Type:* | | | | | | | | | | |
| Fixed Object | 0 | 1 | 0 | 0 | 2 | 1 | 2 | 1 | 3 | 0 |
| Pedestrian/Bicycle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Parked Vehicle | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 |
| Animal Strike | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown/Other | 10 | 26 | 35 | 0 | 65 | 3 | 2 | 7 | 48 | 1 |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |
| *Conditions:* | | | | | | | | | | |
| Clear | 7 | 20 | 26 | 0 | 59 | 4 | 4 | 5 | 40 | 1 |
| Cloudy | 2 | 5 | 4 | 0 | 6 | 0 | 0 | 2 | 4 | 0 |
| Rain | 0 | 2 | 5 | 0 | 3 | 0 | 0 | 1 | 6 | 0 |
| Snow/Ice | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| Not Reported | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |
| *Lighting:* | | | | | | | | | | |
| Daylight | 9 | 20 | 31 | 0 | 56 | 5 | 4 | 7 | 39 | 0 |
| Dawn/Dusk | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 |
| Dark (Road Lit) | 0 | 5 | 3 | 0 | 11 | 0 | 0 | 1 | 12 | 1 |
| Dark (Road Unlit) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Not Reported | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |
| *Day of Week:* | | | | | | | | | | |
| Monday through Friday | 9 | 14 | 19 | 0 | 47 | 3 | 4 | 4 | 41 | 1 |
| Saturday | 1 | 7 | 9 | 0 | 13 | 2 | 0 | 2 | 7 | 0 |
| Sunday | 0 | 7 | 7 | 0 | 11 | 0 | 0 | 2 | 5 | 0 |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |
| *Severity:* | | | | | | | | | | |
| Property Damage Only | 9 | 21 | 28 | 0 | 70 | 5 | 4 | 8 | 46 | 1 |
| Personal Injury | 1 | 7 | 7 | 0 | 1 | 0 | 0 | 0 | 7 | 0 |
| Fatality | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 10 | 28 | 35 | 0 | 71 | 5 | 4 | 8 | 53 | 1 |

[a]Source: Concord Police Department records, 2020 through 2023.
[b]Traffic Control Type: TS = traffic signal control; U = unsignalized.

**Table 5 (Continued)**
**MOTOR VEHICLE CRASH DATA SUMMARY[a]**

| | NH Rte. 9/ NH Rte. 132/ Canterbury Rd. | NH Rte. 106/ Steeplegate Mall dwy | NH Rte. 106/ D'Amante Dr. | NH Rte. 106/ Triangle Park Dr. | NH Rte. 106/ Pembroke Rd./ N. Pembroke Rd. | NH Rte. 106/ Regional Dr./ Smokey Bear Blvd | D'Amante Dr./ West Steeplegate Mall dwy/ Shaw's dwy | D'Amante Dr./ Triangle Park Dr. | D'Amante Dr./ Target dwy | D'Amante Dr./ East Steeplegate Mall dwy |
|---|---|---|---|---|---|---|---|---|---|---|
| Traffic Control Type:[b] | TS | U | TS | U | TS | TS | TS | TS | U | U |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Average | 10.00 | 0.25 | 5.25 | 1.50 | 3.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rate[c] | 0.88 | 0.03 | 0.67 | 0.19 | 0.39 | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Type:* | | | | | | | | | | |
| Fixed Object | 3 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Pedestrian/Bicycle | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parked Vehicle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Animal Strike | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown/Other | 36 | 1 | 20 | 6 | 14 | 7 | 0 | 0 | 0 | 0 |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0 | 0 | 0 | 0 |
| *Conditions:* | | | | | | | | | | |
| Clear | 30 | 0 | 17 | 5 | 11 | 9 | 0 | 0 | 0 | 0 |
| Cloudy | 3 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rain | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Snow/Ice | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Not Reported | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0 | 0 | 0 | 0 |
| *Lighting:* | | | | | | | | | | |
| Daylight | 31 | 1 | 18 | 5 | 13 | 8 | 0 | 0 | 0 | 0 |
| Dawn/Dusk | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| Dark (Road Lit) | 6 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Dark (Road Unlit) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Not Reported | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0 | 0 | 0 | 0 |
| *Day of Week:* | | | | | | | | | | |
| Monday through Friday | 30 | 1 | 15 | 4 | 13 | 9 | 0 | 0 | 0 | 0 |
| Saturday | 5 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Sunday | 5 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0 | 0 | 0 | 0 |
| *Severity:* | | | | | | | | | | |
| Property Damage Only | 30 | 1 | 18 | 3 | 13 | 8 | 0 | 0 | 0 | 0 |
| Personal Injury | 9 | 0 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 0 |
| Fatality | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 40 | 1 | 21 | 6 | 14 | 10 | 0 | 0 | 0 | 0 |

[a]Source: Concord Police Department records, 2020 through 2023.
[b]Traffic Control Type: TS = traffic signal control; U = unsignalized.

# FUTURE CONDITIONS

Traffic volumes in the study area were projected to the years 2025 and 2035, which reflect the anticipated opening-year of the Project and a ten-year planning horizon from opening-year, respectively, consistent with NHDOT TIS guidelines and the scoping determination issued by NHDOT and the City for the Project. The future condition traffic-volume projections incorporate identified specific development projects by others, as well as general background traffic growth as a result of development external to the study area and presently unforeseen projects. Anticipated Project-generated traffic volumes superimposed upon the 2025 and 2035 No-Build traffic volumes reflect the Build conditions with the Project.

## FUTURE TRAFFIC GROWTH

Future traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic; however, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

### Specific Development by Others

The City of Concord Planning Division and the Central New Hampshire Regional Planning Commission (CNHRPC) were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on this discussion, the following projects were identified for review in conjunction with this assessment:

- ***Senior Housing Development, 33 Old Loudon Road, Concord, New Hampshire.*** This project entails the construction of a 114-unit elderly housing development to be located at 33 Old Loudon Road, west of the Project site.

- ***Affordable Housing Development, 103 Old Loudon Road, Concord, New Hampshire.*** This project entails the construction of a 98-unit affordable housing development to be located at 103 Old Loudon Road, west of the Project site.

- ***Hospitality Venue, Break O' Day Drive, Concord, New Hampshire.*** This project entails the construction of a 45,000± sf charitable gaming hall to be located off Break O' Day Drive, north of the Project site.

- ***Multifamily Residential Development, 303 Sheep Davis Road, Concord, New Hampshire.*** This project entails the construction of a 48-unit multifamily residential development to be located at 303 Sheep Davis Road, north of the Project site.

- ***Workforce Housing, Pembroke Road, Concord, New Hampshire.*** This project entails the construction of a 123-unit workforce housing development to be located at Pembroke Road, south of the Project site.

Traffic volumes associated with the aforementioned development projects by others were obtained from the traffic studies conducted for the specific developments,[9,10,11,12,13] and were assigned onto the study area roadway network based on existing traffic patterns where no other information was available. No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate.

**General Background Traffic Growth**

In order to determine general traffic growth trends in the area, NHDOT growth rates for Region E (Southeast Region) were reviewed.[14] This data indicates that traffic volumes have fluctuated over the 10-year period between 2009 and 2019, with an average traffic growth rate of 0.97 percent per year. In order to provide a prudent planning condition for the Project, a slightly higher 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

**Roadway Improvement Projects**

The City of Concord and NHDOT were contacted in order to determine if there were any planned future roadway improvement projects within the study area. Based on these discussions, the following roadway improvement projects were identified:

- ***NH Route 9/Break O' Day Drive/Old Sheep Davis Road.*** In conjunction with the Hospitality Venue project to be located off Break O' Day Drive, the proponent of the

[9]*Transportation Impact Assessment*, Proposed Senior Housing Development; VAI; March 2023.
[10]*Traffic Impact and Access Study*, Proposed Affordable Housing; TFMoran, Inc.; August 31, 2023.
[11]*Traffic Impact and Access Study*, Proposed Hospitality Venue; TFMoran, Inc.; February 28, 2023.
[12]*Traffic Study*, Proposed Multifamily Residential Development; VHB, Inc.; May 19, 2022.
[13]*Traffic Impact and Access Study*, Proposed Workforce Housing, TFMoran, Inc.; November 30, 2021.
[14]NHDOT; 2009-2019 10-Year Growth Data, Region E Averages: Southeast Region.

development has committed to signalizing the intersection and widening the Break O' Day Drive approach to provide a shared left-turn/through lane and a right-turn lane.

- ***NH Route 9/D'Amante Drive/Old Loudon Road.*** In conjunction with the Senior Housing Development project to be located at 33 Old Loudon Road, the proponent of the development has committed to implementing an optimized traffic signal timing and phasing plan at the intersection.

These improvements are reflected in the 2025 and 2035 future condition analyses (No-Build and Build). No other roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.

**No-Build Traffic Volumes**

The 2025 and 2035 No-Build peak-month peak-hour traffic volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2024 Existing peak-month peak-hour traffic volumes and then adding the traffic volumes associated with the identified specific development projects by others. The resulting 2024 No-Build weekday morning, weekday evening and Saturday midday peak-month, peak-hour traffic volumes are shown on Figures 7, 8 and 9, respectively, with the corresponding 2035 No-Build peak-month, peak-hour traffic volumes shown on Figures 10, 11 and 12.

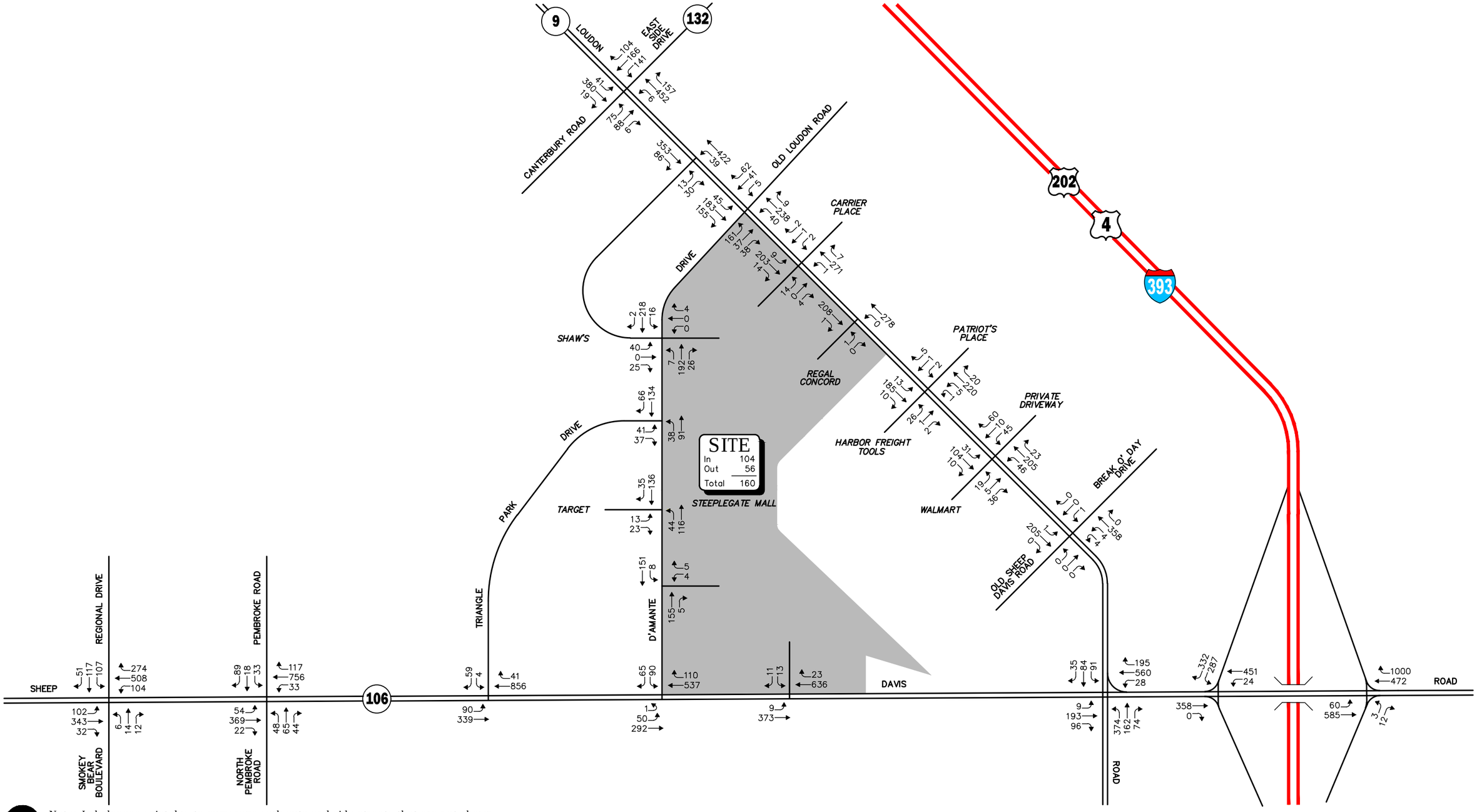
## PROJECT-GENERATED TRAFFIC

Design year (2025 and 2035 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the following primary elements: i) the demolition of the Regal Concord and the partial demolition of the Steeplegate Mall; ii) the continued use of approximately 132,070± sf of retail space, the 5,110± sf restaurant and the 2,275± sf bank with a drive-through teller facility located within the Steeplegate Mall property; and iii) the construction of eight (8) new buildings that will include a 600-unit multifamily residential community, 65,170± sf of additional retail space, a 3,400± sf bank with a drive-through teller facility and a 171,700± sf Costco Wholesale club, including an associated 6,000± sf internal MDO facility and a 24 vfp fueling facility. When complete, the Project site will include an 600-unit multifamily residential community, 197,240± sf of retail space, two (2) banks with drive-through teller facilities (5,675± sf total), a 5,110± sf restaurant and a 171,700± sf Costco Wholesale club that includes an associated 6,000± sf internal MDO facility and a 24 vfp fueling facility.

In order to develop the traffic characteristics of the residential and commercial (excluding Costco) components Project, trip-generation statistics published by the ITE[15] for similar land uses as those proposed were used. ITE Land Use Codes (LUCs) 221, *Multifamily Housing (Mid-Rise)*; 820, *Shopping Center (>150k)*; 912, *Drive-in Bank*; and 932, *High-Turnover (Sit-Down) Restaurant*; were used to establish the base trip-generation calculations for the residential and commercial components of the Project.

[15]Institute of Transportation Engineers, op. cit. 1.




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 7**

**2025 No-Build**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

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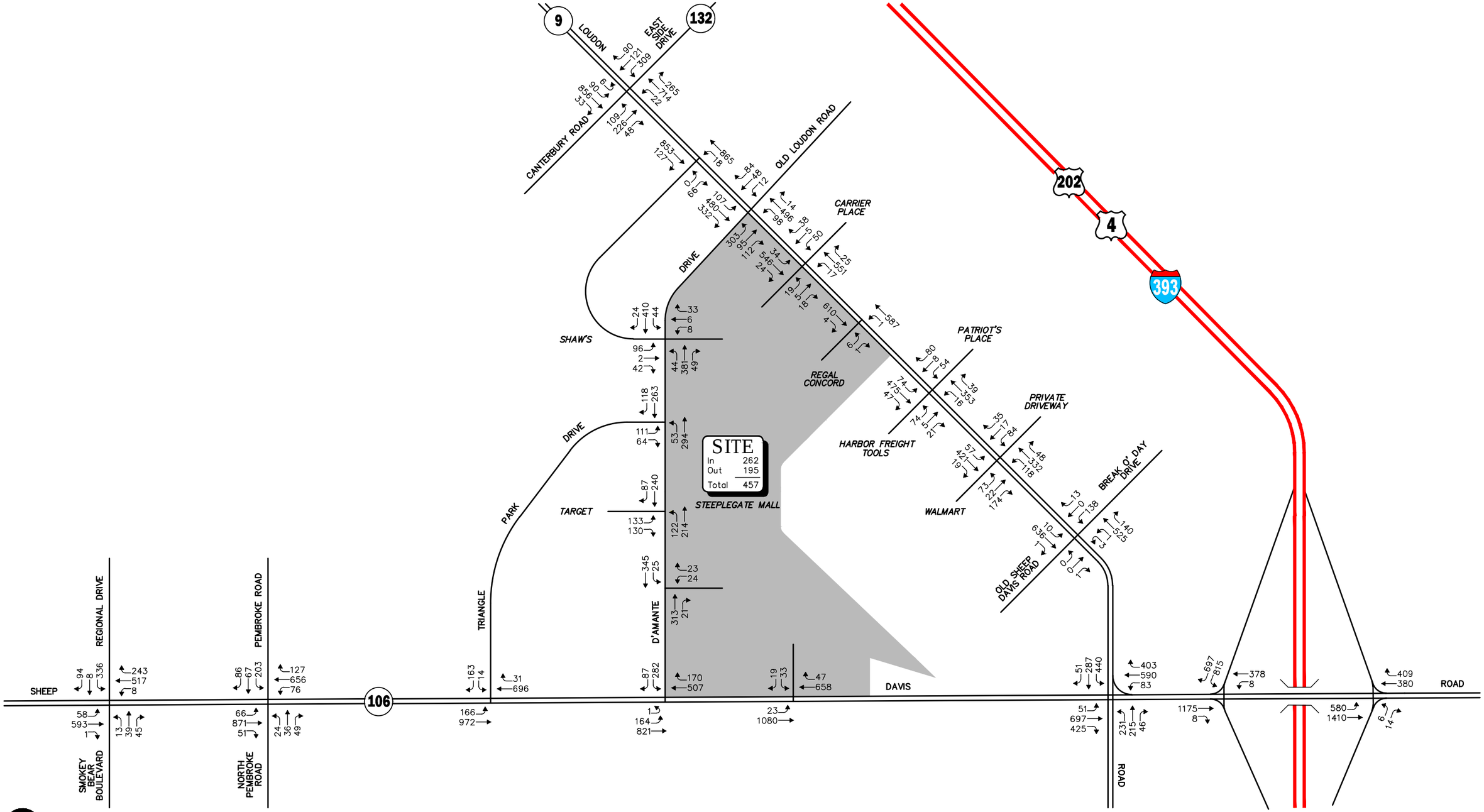


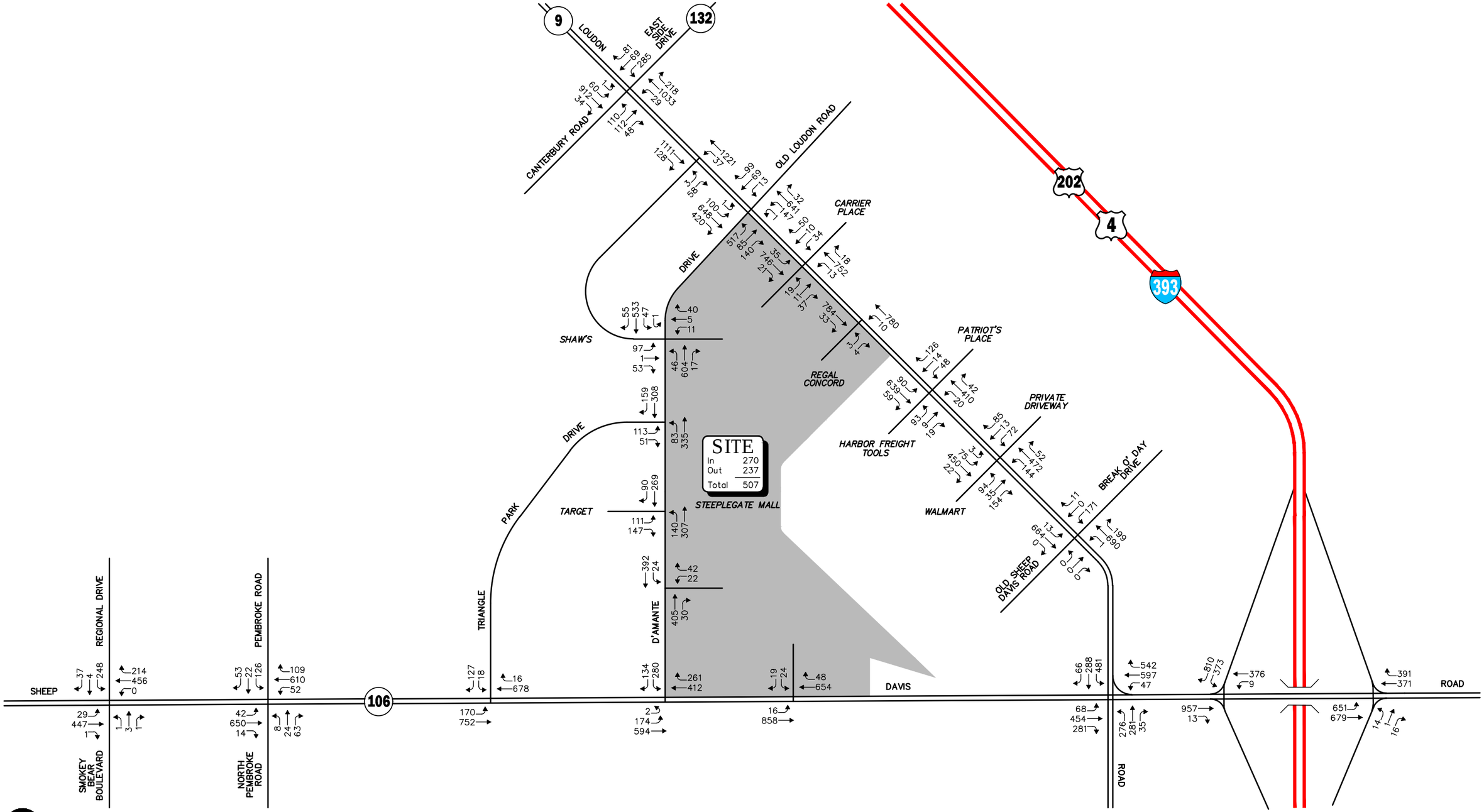

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 8**

**2025 No-Build**
**Peak-Month**
**Weekday Evening**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



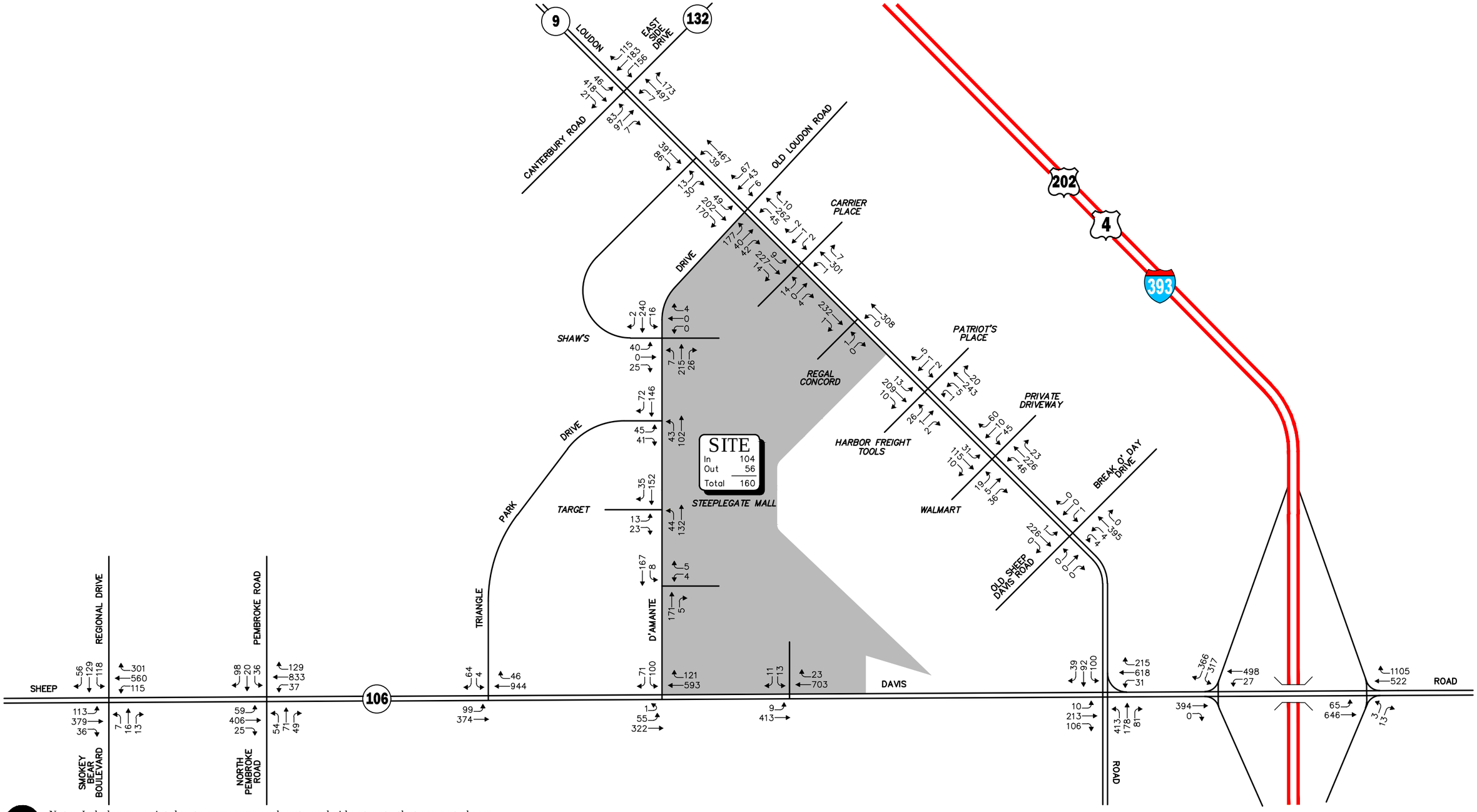

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 9**

**2025 No-Build**
**Peak-Month**
**Saturday Midday**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



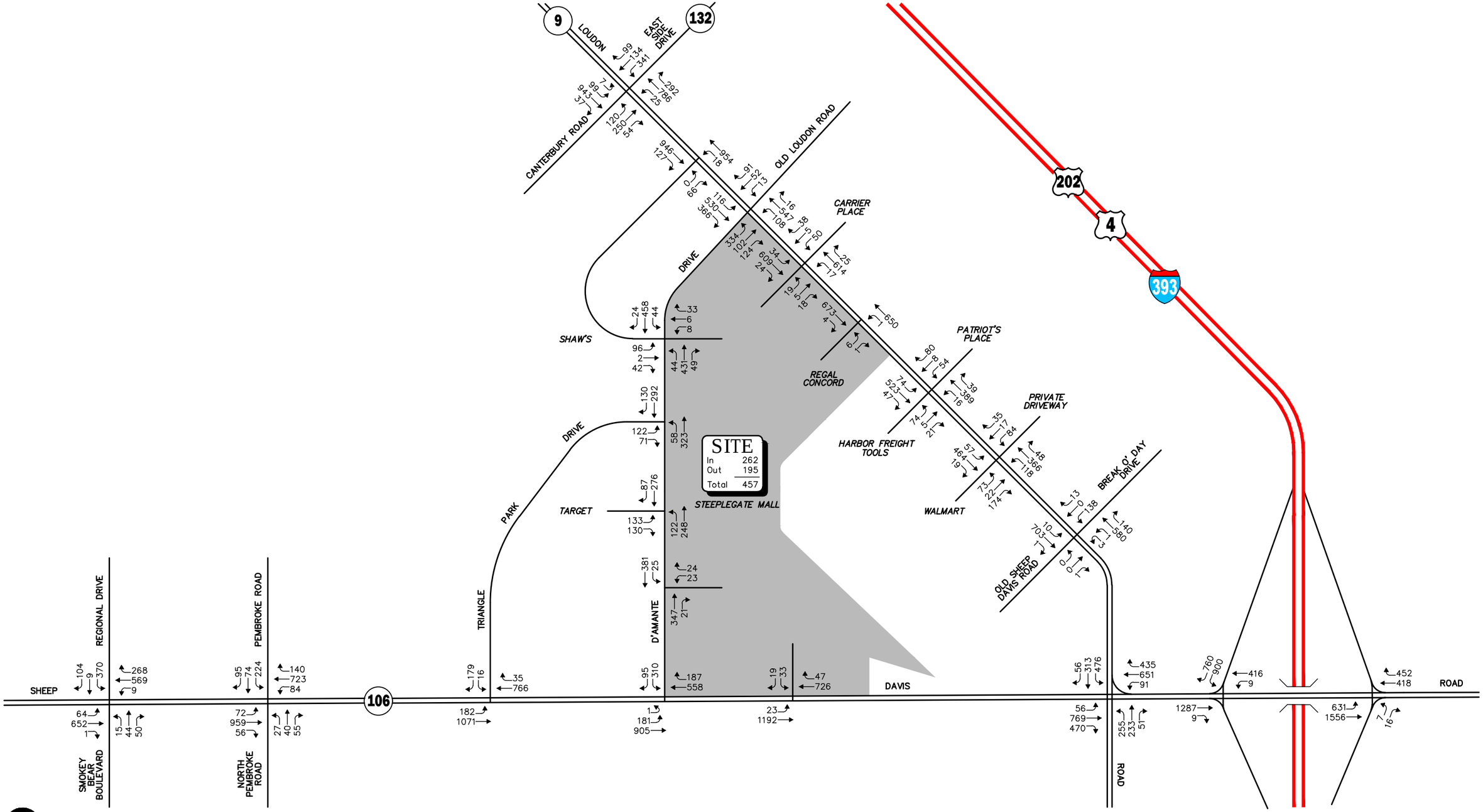

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 10**

**2035 No-Build**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



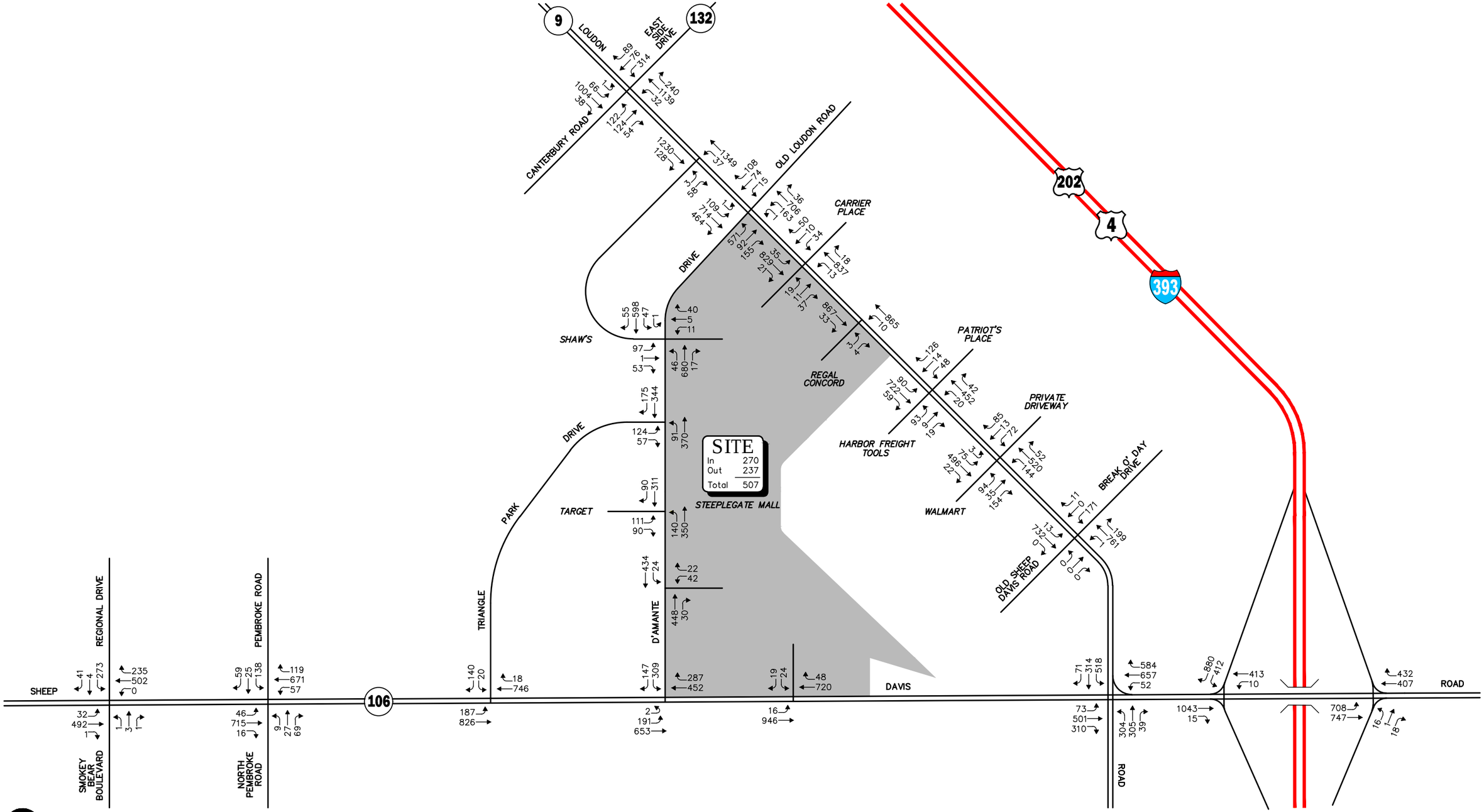

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 11**

**2035 No-Build**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 12**

**2035 No-Build**
**Peak-Month**
**Saturday Midday**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc

The traffic characteristics of the Costco component of the Project were developed using empirical trip rates derived from data collected at similar Costco facilities that include MDO facilities and fueling facilities. The empirical trip rates were derived from data collected by Kittleson & Associates, Inc.[16] at 26 Costco membership clubs with fueling facilities located in the United States and Canada, and included surveys of pass-by and divert-link trips. The MDO facility is a relatively new service being provided by Costco and operates as a 'last-mile' delivery for larger items purchased by members. Unlike a traditional 'last-mile' or package-delivery station, the number of trucks (approximately 2-3 trucks per day are expected at this location) and the associated staff (approximately 2 to 3 persons) are relatively small. Costco MDO data was provided by Kittleson & Associates, Inc. for three (3) operating MDOs located in New York, Pennsylvania and Vermont. The data collected by Kittelson & Associates, Inc. was compiled following the guidance offered by the ITE for empirical data collection. A memorandum describing the specific data collection process and the resulting trip rates is provided in the technical appendix.

**Internal Trips**

A portion of the trips expected to be generated by the Project will consist of internal or dual-purpose trips. An internal trip in the case of the Project consists of a resident, customer and/or employee that patronizes more than one of the uses planned within a development and is common in mixed-use projects with appropriate accommodations to facilitate trips between uses. By way of example, a resident of the Project may patronize one or more of the retail stores, banks, restaurant or the Costco that will be located within the Project site without traveling on a roadway outside of the internal roadway network within the Project site. In order to account for this interaction, the multi-use trip-generation calculation methodology promulgated by the ITE[17] was applied to the base ITE trip-generation calculations for the constituent components of the Project.

**Pass-By Trips**

Not all of the trips expected to be generated by the Project will be new trips on the roadway network. A significant portion of these trips will consist of pass-by trips or vehicles already traveling along NH Route 9, NH Route 106 or D'Amante Drive for other purposes that will patronize the Project in conjunction with their trip and then continue to their original destination. These trips are not new trips on the roadway network as a result of the Project. Statistics published by the ITE[18] and Kittleson & Associates, Inc. indicate that, on average, 29 percent of the trips generated by a retail use, up to 38 percent of the trips generated by a bank with a drive-through teller facility, up to 43 percent of the trips generated by a restaurant use, and up to 36 percent of the trips associated with a Costco wholesale club with a fueling facility may consist of pass-by trips . In accordance with the scoping determination issued by NHDOT for the Project, the ITE pass-by trip rate for the specific use and time period were applied to the base trip-generation calculations for the Project.

**Divert-Link Trips**

Not all of the trips expected to be generated by the Costco component of the Project will be new trips on the roadway network. A significant portion of these trips may consist of divert-link trips or vehicles already traveling along adjacent roadways for other purposes that will divert from their intended route to patronize the Project in conjunction with their trip and then continue to their

[16] *Costco Trip Generation,* Concord NH Costco – Trip Generation Estimate; Kittleson & Associates, Inc.; November 21, 2023.

[17] Institute of Transportation Engineers, op. cit. 1.

[18] Institute of Transportation Engineers, op. cit. 1.

original destination. These trips are not new trips on the roadway network as a result of the Project. Based on a review of the data provided by Kittelson & Associates, Inc., up to 40 percent of the trips generated by a Costco wholesale club with a fueling facility consist of traffic already travelling along the adjacent roadways before continuing to their intended destination. The diverted-link trip rates provided by Kittelson & Associates, Inc. were applied to the base trip-generation calculations for the Costco component of the Project.

Table 6 summarizes the anticipated trip characteristics of the Project using the aforementioned methodology, with the detailed trip-generation calculations for each component of the Project provided in the Appendix.

**Table 6**
**TRIP-GENERATION SUMMARY**

| Time Period/Direction | Vehicle Trips | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (A) Multifamily Community (600 units)[a] | (B) Retail Space (197,240 sf)[b] | (C) Bank with Drive Through Teller (5,675 sf)[c] | (D) High Turnover (Sit-Down) Restaurant (5,110 sf)[d] | (E) Costco Wholesale with Fuel Center (165,700 sf)[e] | (F) Proposed Costco MDO Facility (6,000 sf)[e] | (G = A+B+C+D+E+F) Total Trips | (H) Internal Trips[f] | (I = G-H) Total Net Trips | **(J) Total Pass-By Trips[g]** | **(K) Total Diverted-Link Trips[h]** | **(L = I – J- K) Total New Trips** |
| *Average Weekday Daily:* | | | | | | | | | | | | |
| Entering | 1,362 | 5,507 | 285 | 274 | 5,221 | 30 | 12,679 | 969 | 11,710 | **2,578** | **1,478** | **7,654** |
| Exiting | 1,362 | 5,507 | 285 | 274 | 5,221 | 30 | 12,679 | 969 | 11,710 | **2,578** | **1,478** | **7,654** |
| Total | 2,724 | 11,014 | 570 | 548 | 10,442 | 60 | 25,358 | 1,938 | 23,420 | **5,156** | **2,956** | **15,308** |
| *Weekday Morning Peak-Hour:* | | | | | | | | | | | | |
| Entering | 58 | 155 | 33 | 27 | 766 | 4 | 1,043 | 26 | 1,017 | **323** | **301** | **393** |
| Exiting | 194 | 95 | 23 | 22 | 766 | 2 | 1,102 | 26 | 1,076 | **323** | **301** | **452** |
| Total | 252 | 250 | 56 | 49 | 1,532 | 6 | 2,145 | 52 | 2,093 | **646** | **602** | **845** |
| *Weekday Evening Peak-Hour:* | | | | | | | | | | | | |
| Entering | 143 | 442 | 60 | 28 | 505 | 1 | 1,179 | 126 | 1,053 | **238** | **150** | **665** |
| Exiting | 91 | 478 | 60 | 18 | 570 | 2 | 1,219 | 126 | 1,093 | **238** | **150** | **705** |
| Total | 234 | 920 | 120 | 46 | 1,075 | 3 | 2,398 | 252 | 2,146 | **476** | **300** | **1,370** |
| *Saturday:* | | | | | | | | | | | | |
| Entering | 1,371 | 6,974 | 246 | 313 | 5,830 | 30 | 14,764 | 973 | 13,791 | **3,004** | **1,290** | **9,497** |
| Exiting | 1,371 | 6,974 | 246 | 313 | 5,830 | 30 | 14,764 | 973 | 13,791 | **3,004** | **1,290** | **9,497** |
| Total | 2,742 | 13,948 | 492 | 626 | 11,660 | 60 | 29,528 | 1,946 | 27,582 | **6,008** | **2,580** | **18,994** |
| *Saturday Midday Peak-Hour:* | | | | | | | | | | | | |
| Entering | 119 | 580 | 76 | 29 | 733 | 3 | 1,540 | 83 | 1,457 | **308** | **166** | **983** |
| Exiting | 115 | 534 | 74 | 28 | 762 | 4 | 1,517 | 83 | 1,434 | **308** | **166** | **960** |
| Total | 234 | 1,114 | 150 | 57 | 1,495 | 7 | 3,057 | 166 | 2,891 | **616** | **332** | **1,943** |

[a]Based on ITE LUC 221, *Multifamily Housing (Mid-Rise)*.
[b]Based on ITE LUC 820, *Shopping Center (>150k)*.
[c]Based on ITE LUC 912, *Drive-in Bank.*
[d]Based on ITE LUC 932, *High-Turnover (Sit-Down) Restaurant.*
[e]Based on empirical trip generation rates provided by Kittleson & Associates, Inc.
[f]Internal trips were developed using the multi-use trip generation calculation methodology promulgated by the ITE.
[g]Pass-by trip rates were obtained from ITE for the retail, bank and restaurant uses and from Kittleson & Associates, Inc. for the Costco Wholesale with Fuel Center.
[h]Diverted-link trip rates were obtained from Kittleson & Associates, Inc. and were applied to the Costco Wholesale with Fuel Center trip-generation only.

**Project-Generated Traffic-Volume Summary**

As can be seen in Table 6, using the aforementioned methodology, the Project is expected to generate approximately 15,308 new vehicle trips on an average weekday and 18,994 new vehicle trips on a Saturday (both two-way, 24-hour volumes), with 845 new vehicle trips (393 vehicles entering and 452 exiting) expected during the weekday morning peak-hour, 1,370 new vehicle trips (665 vehicles entering and 705 exiting) expected during the weekday evening peak-hour and 1,943 new vehicle trips (983 vehicles entering and 960 exiting) expected during the Saturday midday peak-hour.

For context purposes only, Table 7 compares the traffic volumes associated with the Project to those of the Steeplegate Mall at full occupancy and with the Regal Cinema fully operational. Note that the traffic volumes for both uses include pass-by and divert-link trips and represent the total volume of traffic as measured at the Project site driveways.

**Table 7**
**TRAFFIC VOLUME COMPARISON**

| | Vehicle Trips | | |
|---|---|---|---|
| Time Period/Direction | (A) Proposed Mixed-Use Development[a] | (B) Fully Occupied Steeplegate Mall and Regal Concord Cinema[b] | (A-B) Difference |
| *Average Weekday:* | 23,420 | 23,024 | +396 |
| *Weekday Morning Peak-Hour:* | 2,093 | 526 | +1,567 |
| *Weekday Evening Peak-Hour:* | 2,146 | 2,177 | -31 |
| *Saturday:* | 27,582 | 30,038 | -2,456 |
| *Saturday Midday Peak-Hour:* | 2,891 | 3,026 | -135 |

[a]See Column I of Table 6.
[b]Based on trip-generation data for ITE LUCs 445, *Movie Theater*, applied to 27,944 sf; 820, *Shopping Center (>150k)*, applied to 543,939 sf; 912, *Drive-in Bank*, applied to 2,275 sf; and 932, *High-Turnover (Sit-Down) Restaurant*, applied to 5,110 sf.

**Traffic Volume Comparison**

As can be seen in Table 7, in comparison to the trips associated with a fully occupied Steeplegate Mall and with the Regal Cinema fully operational, the Project is expected to generate 396 ***additional*** vehicle trips on an average weekday and a ***reduction*** of 2,456 vehicle trips on a Saturday, with 1,567 ***additional*** vehicle trips expected during the weekday morning peak-hour, a ***reduction*** of 31 vehicle trips during the weekday evening peak-hour and a ***reduction*** of 135 vehicle trips during the Saturday midday peak-hour.

## TRIP DISTRIBUTION AND ASSIGNMENT

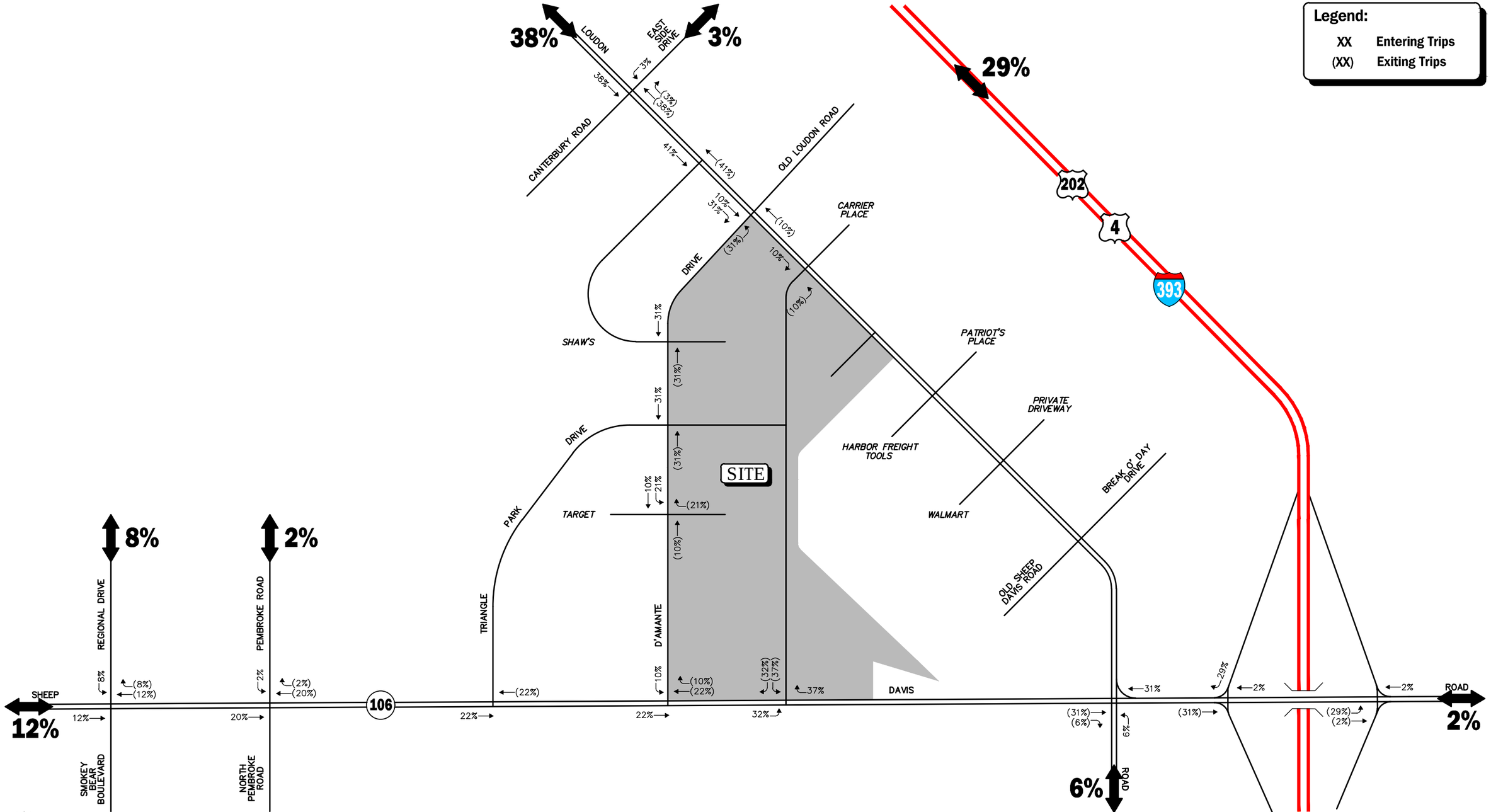
Separate trip-distribution patterns were developed for the residential, commercial and Costco components of the Project given the differing nature and purpose of the trips associated with these uses. For the residential component of the Project, the directional distribution was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons residing within the City of Concord and then refined based on existing traffic patterns within the study area. For the commercial and Costco components of the Project, the directional distribution was determined based on a review of existing traffic patterns within the study area.

The trip distribution pattern for the residential component of the Project is graphically depicted on Figure 13, with those for the commercial component shown on Figure 14 and those for the Costco component shown on Figure 15. Traffic volumes expected to be generated by the Project were assigned onto the study area roadway network as shown on Figures 16, 17 and 18 for the weekday morning, weekday evening and Saturday midday peak-hours, respectively.

## FUTURE TRAFFIC VOLUMES - BUILD CONDITION

The 2025 Opening-Year and 2035 Build peak-month condition traffic volumes were developed by: i) removing of the traffic associated with the existing uses that occupy the Project site; and ii) adding the traffic expected to be generated by the Project to the corresponding 2025 and 2035 No-Build peak-month, peak-hour traffic volumes, respectively.

The resulting 2025 Opening-Year Build condition weekday morning, weekday evening and Saturday midday peak-month, peak-hour traffic volumes are graphically depicted on Figures 19, 20 and 21, respectively, with the corresponding 2035 Build condition peak-month, peak-hour traffic volumes depicted on Figures 22, 23 and 24.

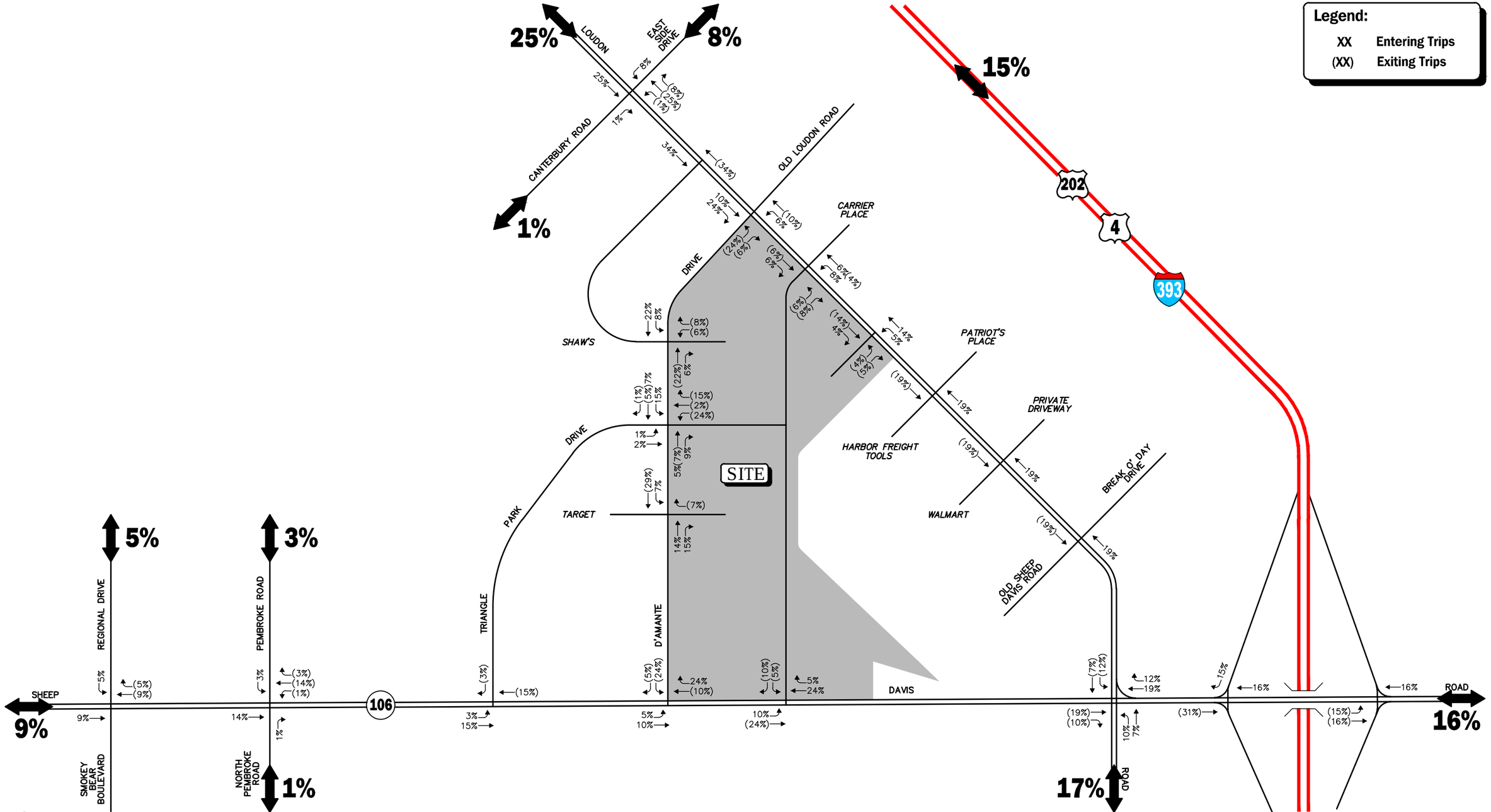



Not To Scale

**Figure 13**

**Trip Distribution Map**
**Residential Component**

Vanasse & Associates inc




Not To Scale

**Figure 14**

**Trip Distribution Map**
**Commercial Component**

Vanasse & Associates inc

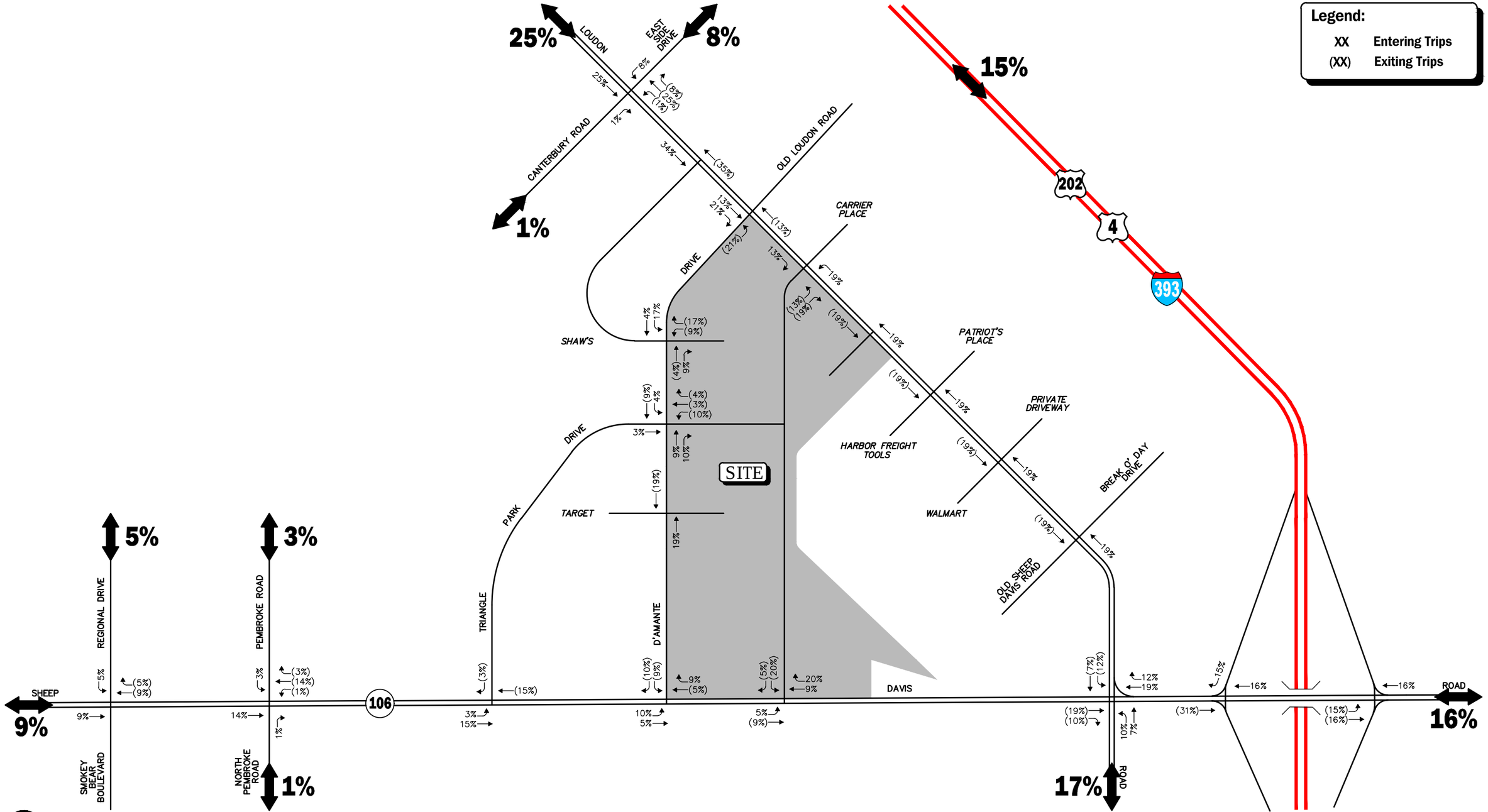



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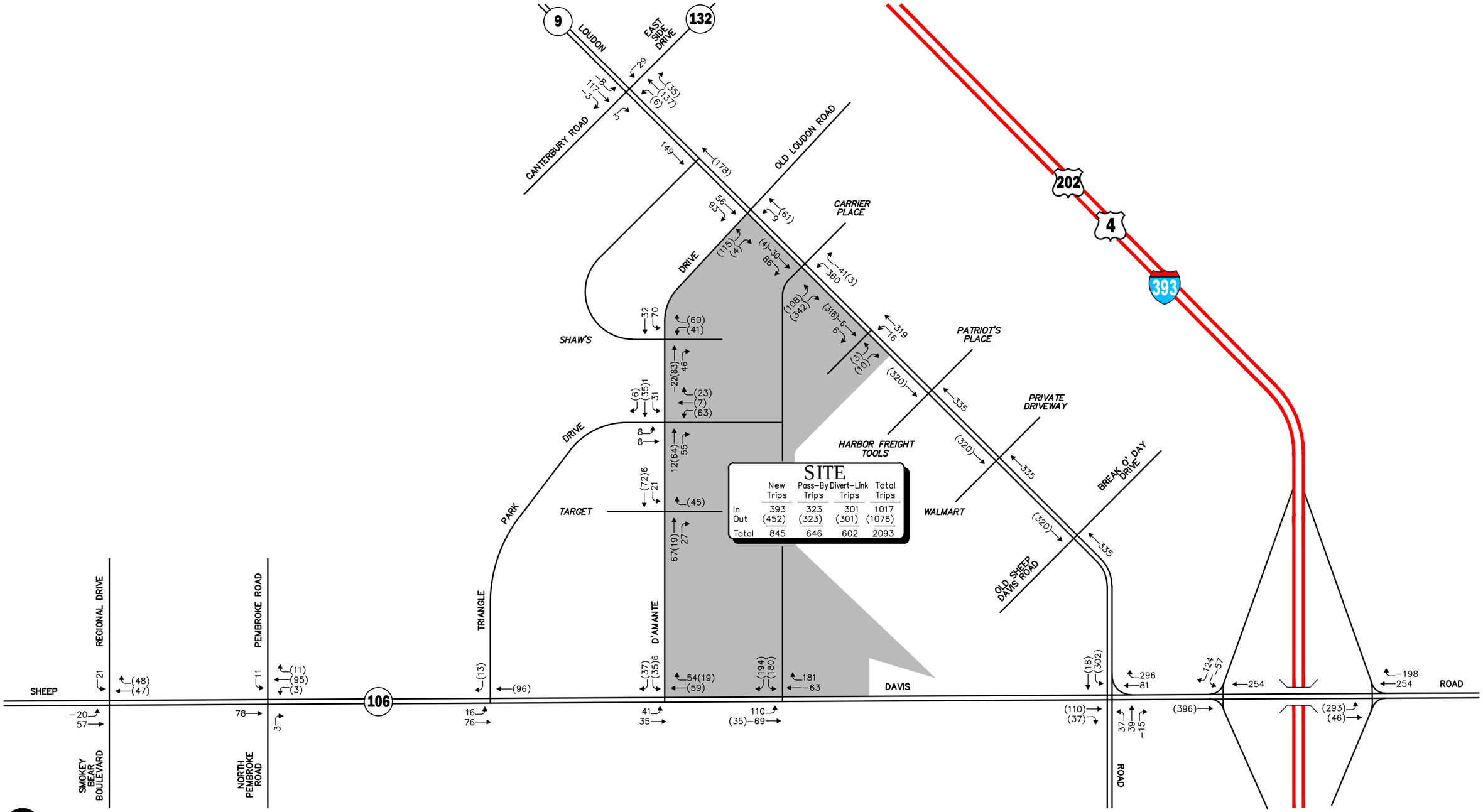
**Figure 15**

**Trip Distribution Map**
**Costco Component**

Vanasse & Associates inc



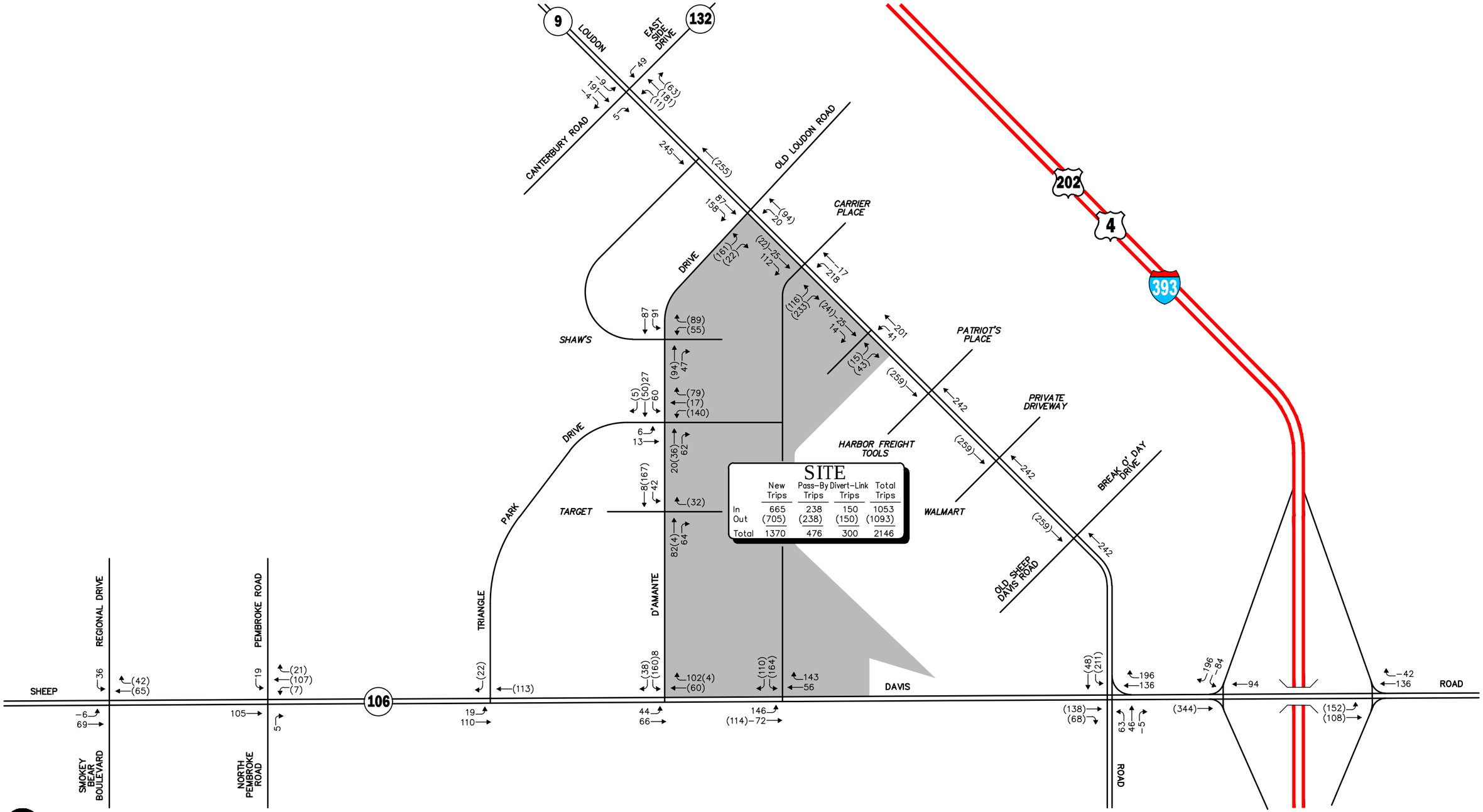

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 16**

**Project-Generated Weekday Morning Peak-Hour Traffic Volumes**

Vanasse & Associates inc



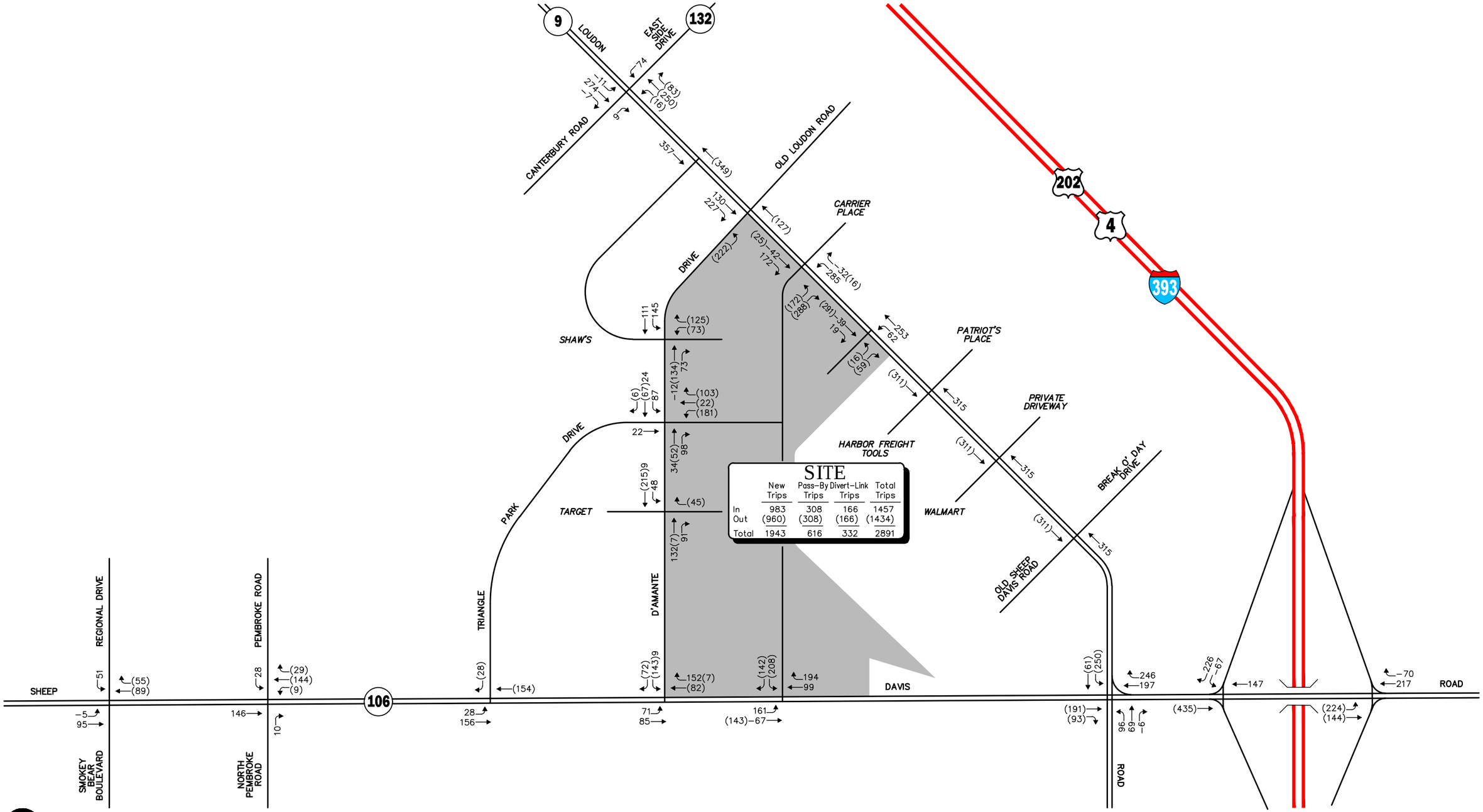

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 17**

**Project-Generated Weekday Evening Peak-Hour Traffic Volumes**

Vanasse & Associates inc



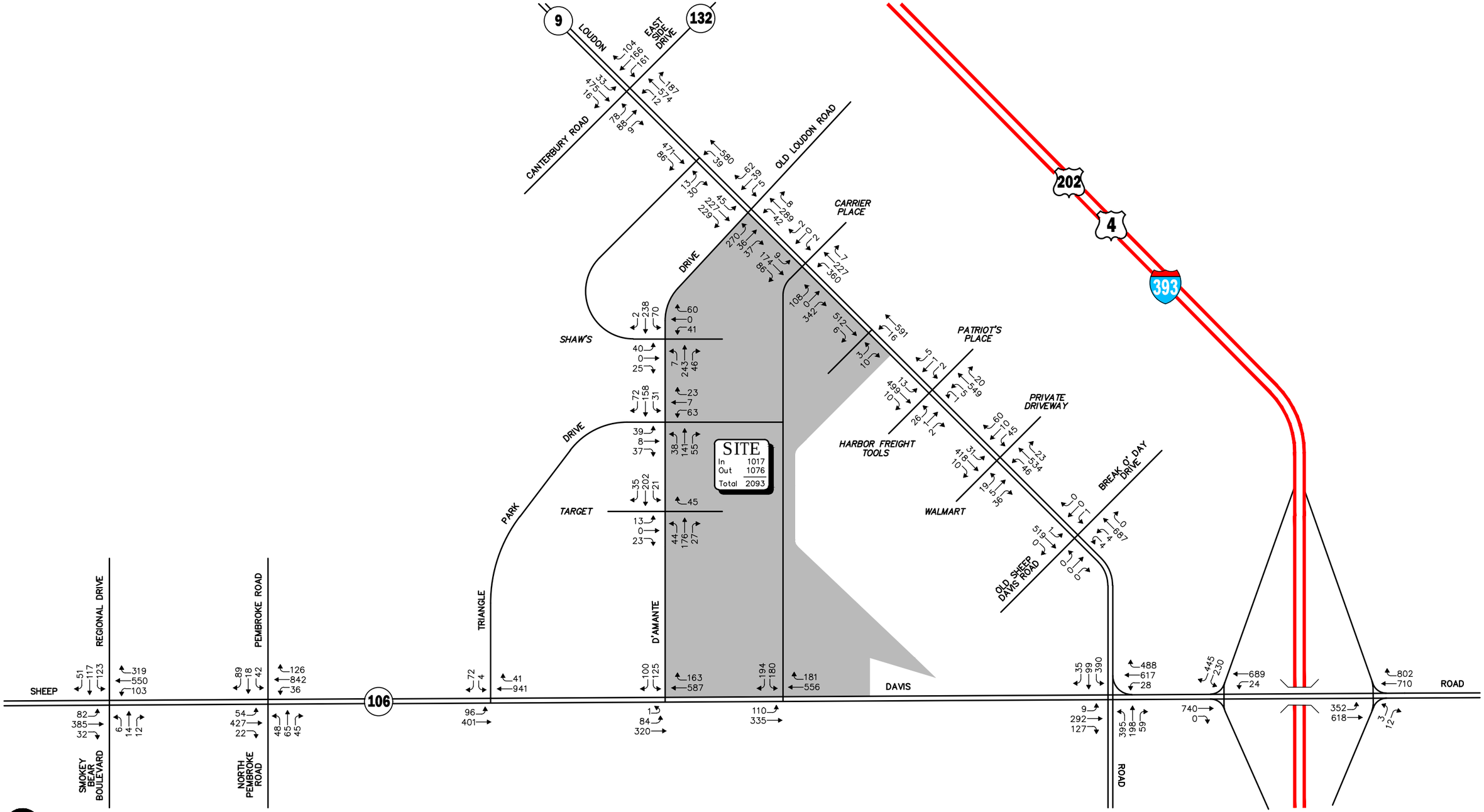

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 18**

**Project-Generated Saturday Midday Peak-Hour Traffic Volumes**

Vanasse & Associates inc



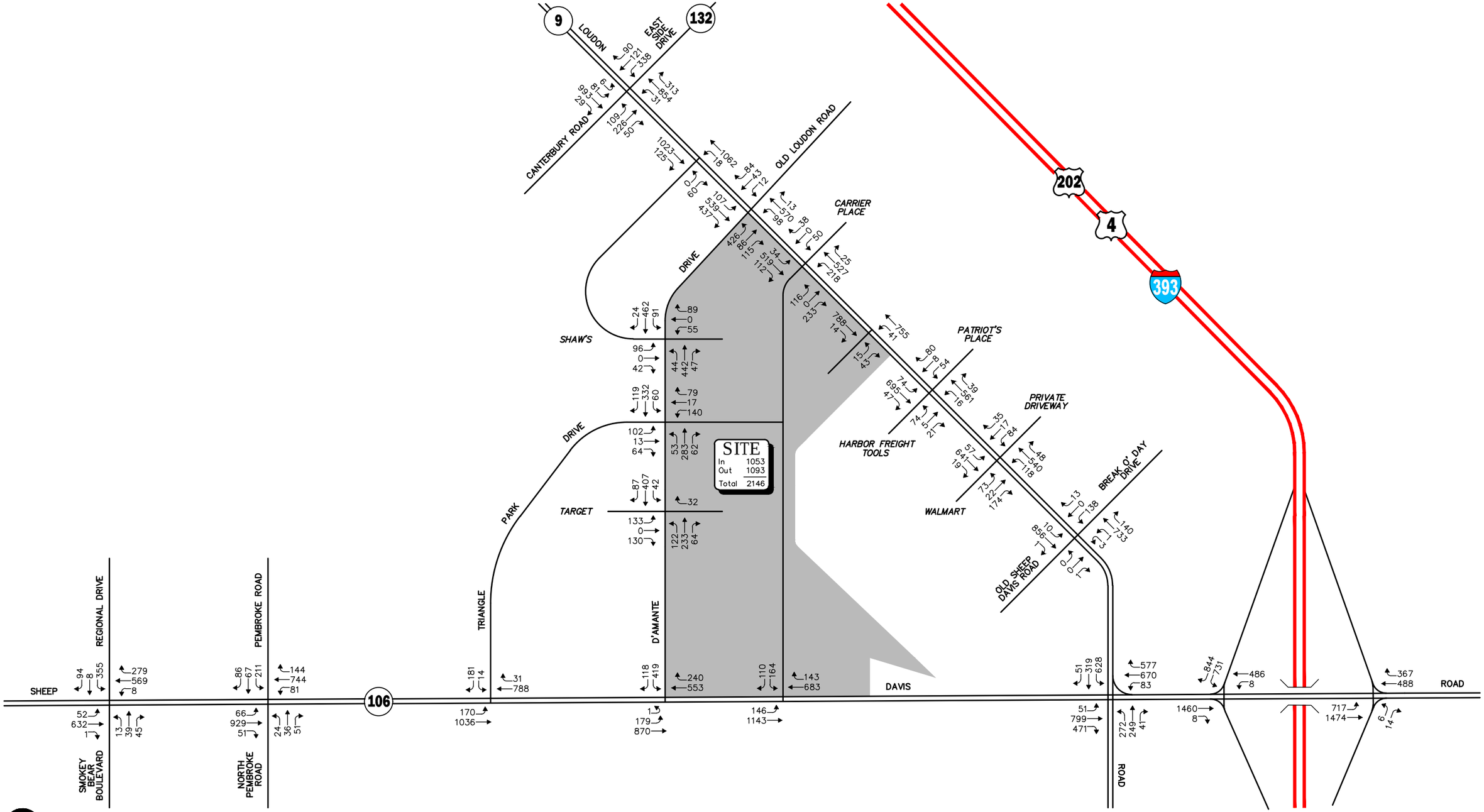

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 19**

**2025 Opening Year Build**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



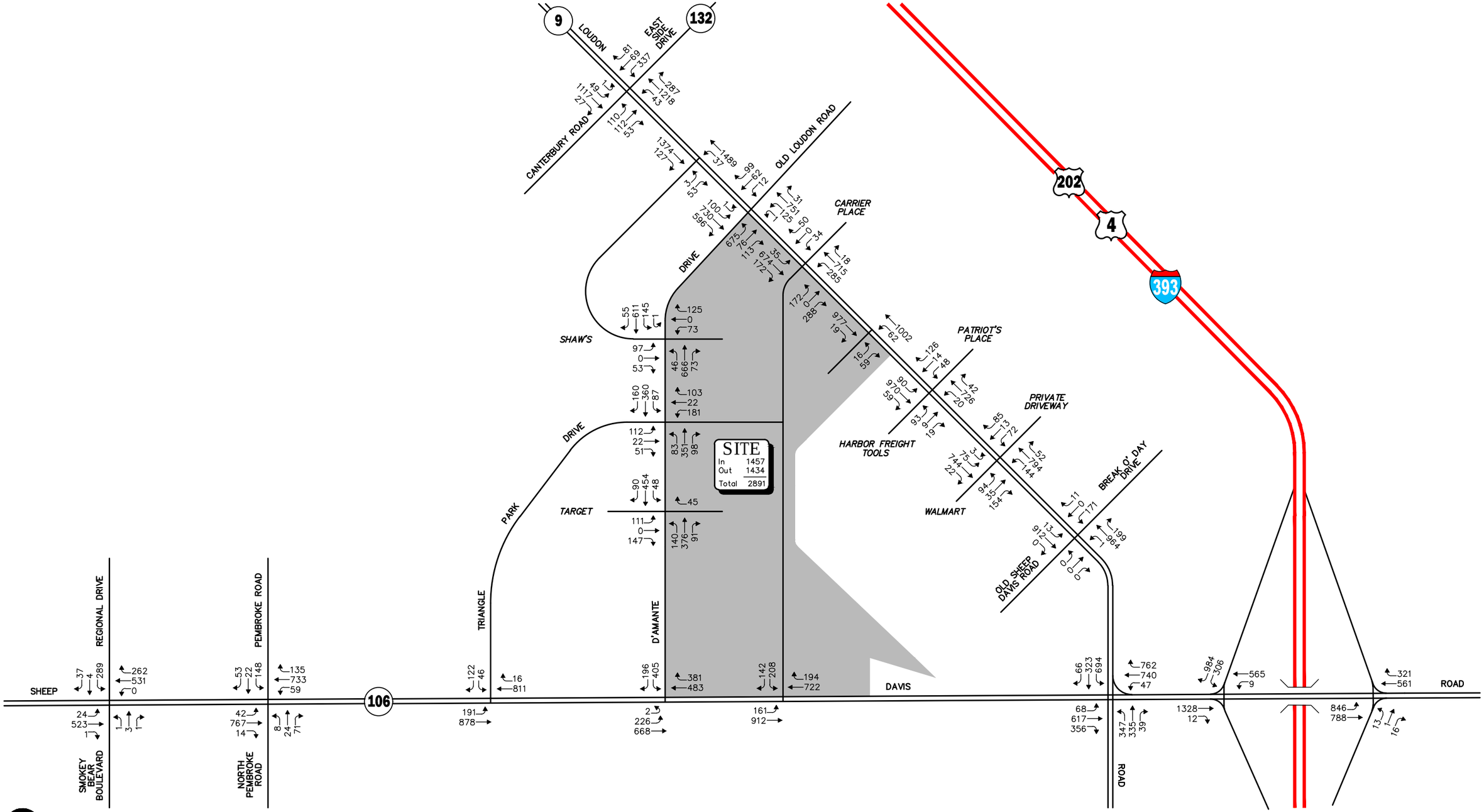

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 20**

**2025 Opening Year Build**
**Peak-Month**
**Weekday Evening**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



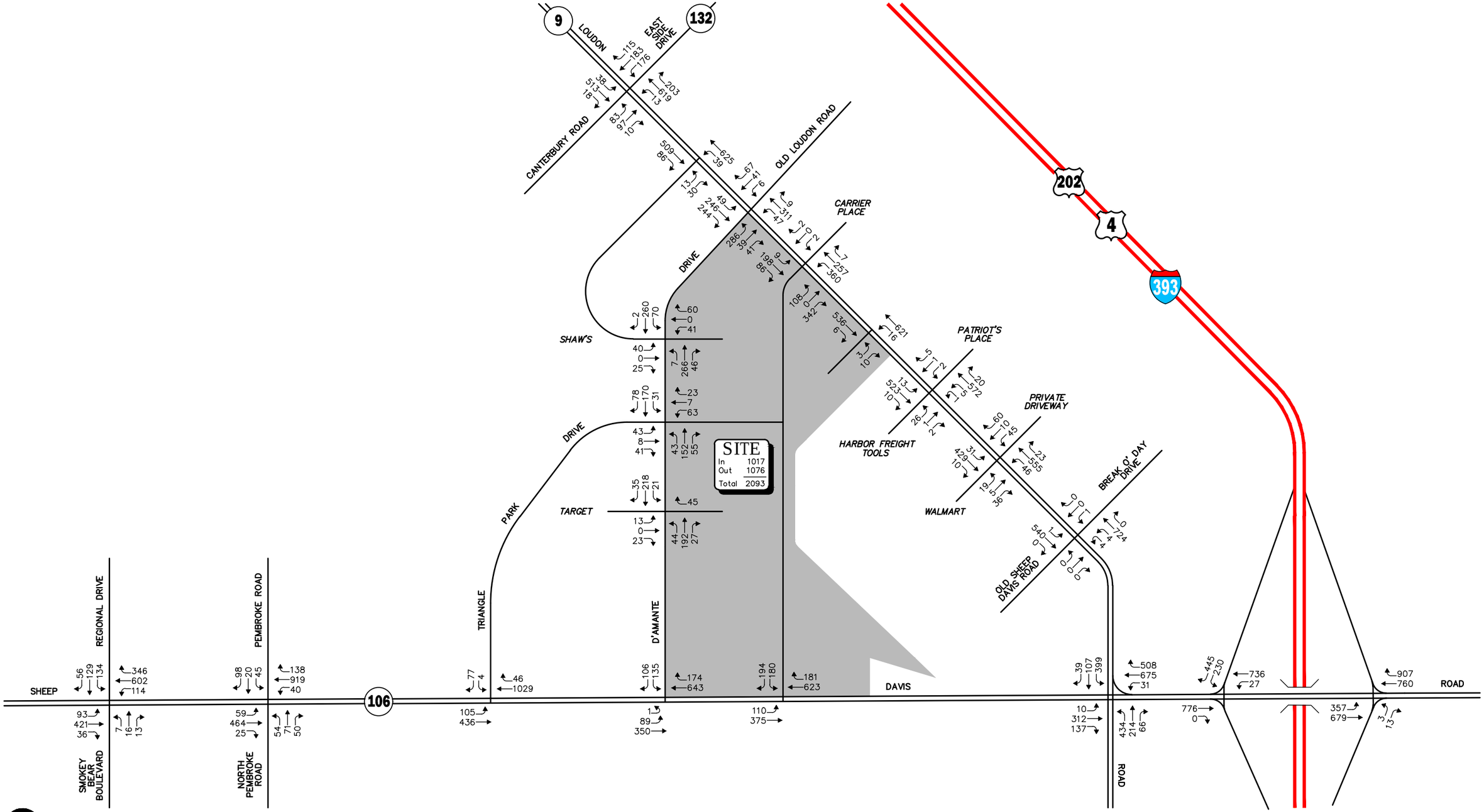

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 21**

**2025 Opening Year Build**
**Peak-Month**
**Saturday Midday**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



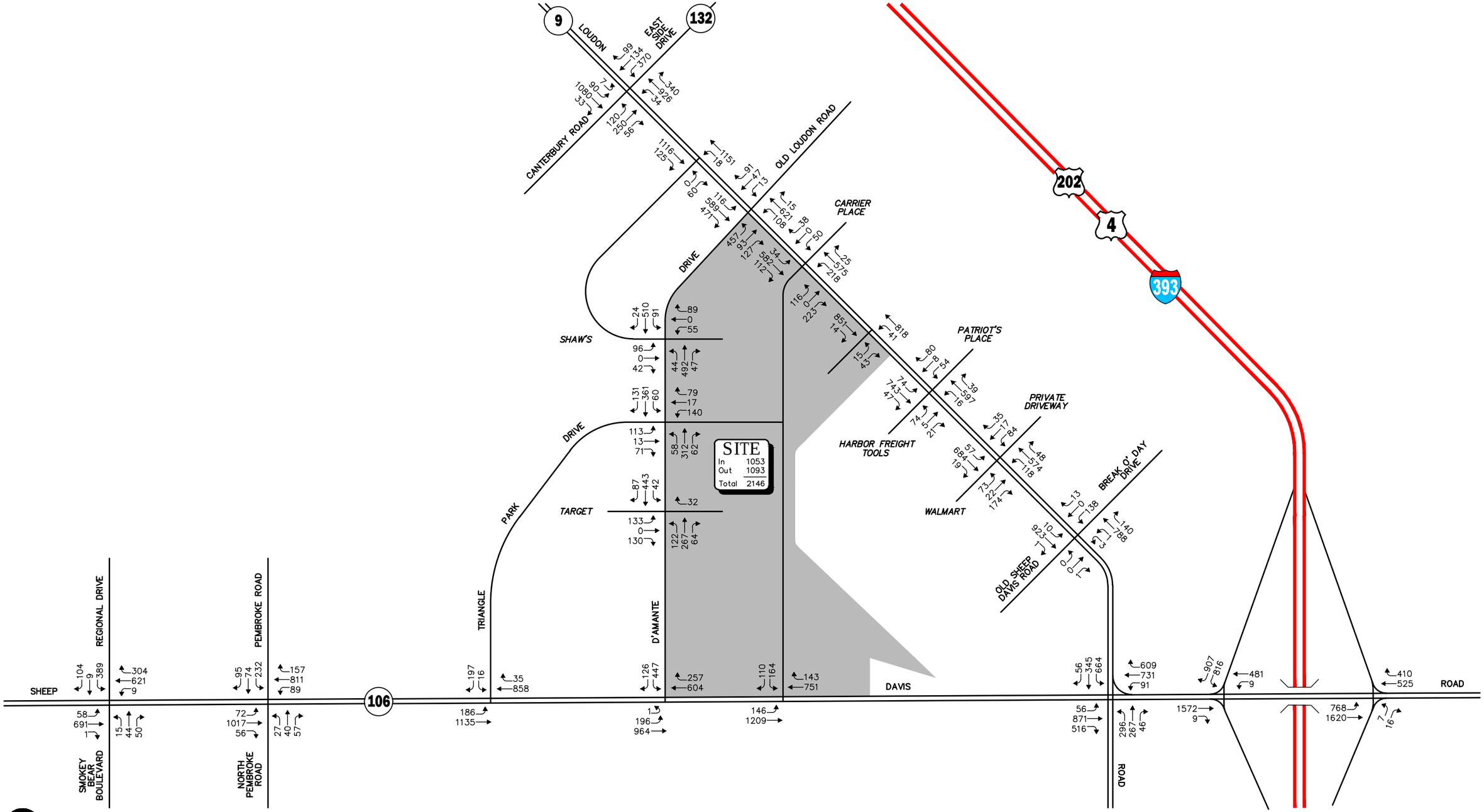

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 22**

**2035 Build**
**Peak-Month**
**Weekday Morning**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc



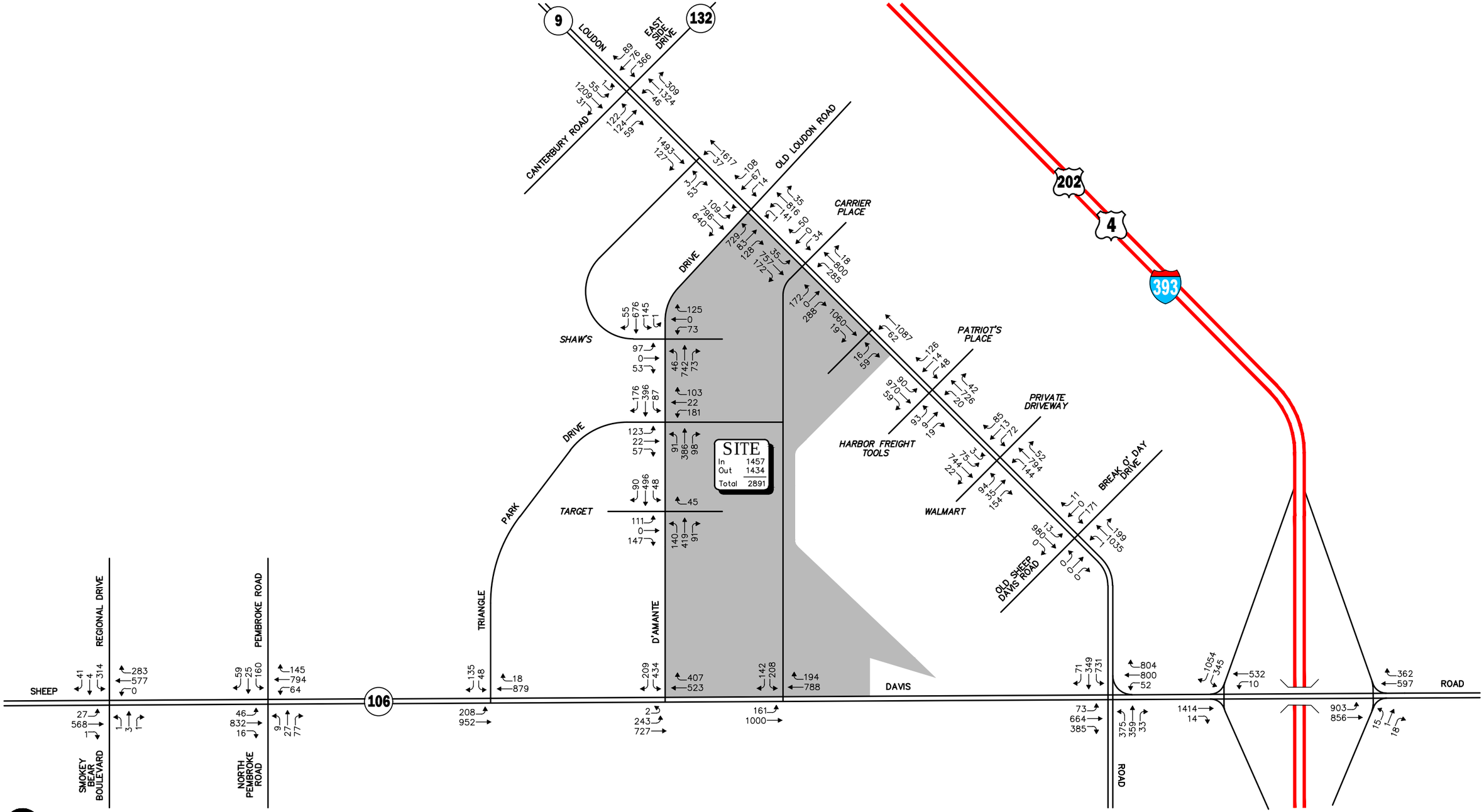

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 23**

**2035 Build**
**Peak-Month**
**Weekday Evening**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc




Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

**Figure 24**

**2035 Build**
**Peak-Month**
**Saturday Midday**
**Peak-Hour Traffic Volumes**

Vanasse & Associates inc

# AUXILIARY TURN LANE WARRANTS ANALYSIS

An auxiliary turn lane warrants analysis was conducted at the following Project site driveway intersections where turn lanes are not currently provided in accordance with the methodology and procedures outlined in *NCHRP Report 457*[19] published by the National Cooperative Highway Research Program (NCHRP):

- NH Route 9 at the Regal Concord driveway
- NH Route 9 at the Steeplegate Mall driveway and the Carrier Place driveway
- D'Amante Drive at the West Steeplegate Mall driveway and the Shaw's driveway
- D'Amante Drive at Triangle Park Drive
- D'Amante Drive at the Target driveway

The auxiliary turn lane warrants analysis was conducted under 2025 Opening-Year Build and 2035 Build peak-month, peak-hour traffic volume conditions and using the existing roadway and intersection geometry and the posted speed limit plus 5 mph or the measured 85$^{th}$ percentile vehicle travel speed along the intersecting roadway, whichever was higher.

Determination of the need for a left-turn lane of adequate storage length is a function of the volume of left-turning vehicles at the intersection under study and the magnitude of opposing or conflicting traffic volumes along the roadway. For a right-turn lane, the volume of right-turning vehicles at the intersection and the total volume of traffic on the same approach (advancing volume) are considered.

Table 8 summarizes the results of the auxiliary turn lane warrants analysis for the subject intersections with the detailed analysis presented in the Appendix.

[19] *NCHRP Report 457 – Evaluating Intersection Improvement: An Engineering Study Guide*, National Cooperative Highway Research Program; 2001.

**Table 8**
**TURN LANE WARRANTS ANALYSIS SUMMARY**

| Intersection | Left-Turn Lane Warranted? | Right-Turn Lane Warranted? |
|---|---|---|
| NH Rte. 9/Regal Concord dwy (North Project site dwy) | *Not Applicable* | No |
| NH Rte. 9/Steeplegate Mall dwy/Carrier Place dwy (South Project site dwy) | *Not Applicable* | **Yes** |
| D'Amante Dr./West Steeplegate Mall dwy/Shaw's dwy (West Project site dwy) | *Not Applicable* | No |
| D'Amante Dr./Triangle Park Dr. (Central Project site dwy) | **Yes** | No |
| D'Amante Dr./Target dwy (East Project site dwy) | **Yes** | **Yes** |

As shown on Table 8, based on a review of the auxiliary turn lane criteria under 2025 Opening Year and 2035 Build conditions, provision of a left-turn lane on the D'Amante Drive eastbound approaches to the Project site driveway located opposite Triangle Park Drive (the central Project site driveway) and to the Project site driveway located opposite the Target driveway (the east Project site driveway) is *warranted*. As such, it is recommended that a left-turn lane be provided on the respective D'Amante Drive eastbound approaches. The criteria for the installation of a right-turn lane was found to be met for the NH Route 9 eastbound approach to the Project site driveway located opposite Carrier Place (the south Project site driveway); and the D'Amante Drive westbound approach to the Project site driveway located opposite the Target driveway (the east Project site driveway). As such, the warranted turn lanes will be constructed at the identified Project site driveway intersections as a part of the Project subject to receipt of all necessary rights, permits and approvals.

# TRAFFIC SIGNAL WARRANT ANALYSIS

A detailed Traffic Signal Warrants Analysis (TSWA) was performed for the NH Route 106/ Steeplegate Mall (Project site) driveway intersection following the methodology defined in the *Manual on Uniform Traffic Control Devices* (MUTCD).[20] The purpose of this analysis is to determine if the subject intersection meets the necessary criteria to allow for the reinstallation of the traffic control signal that formerly operated at this intersection and has since been removed.

## METHODOLOGY

The MUTCD establishes nine warrants or criteria to evaluate a location for the installation (or retention) of a traffic signal; however, satisfaction of a warrant in and of itself does not necessarily indicate that the installation of a traffic signal is the best traffic control solution. An engineering evaluation of the location in question should indicate that the establishment of traffic signal control will improve the overall safety and/or operation of the intersection. Table 9 lists the nine warrants used to evaluate an intersection for traffic signal control as presented in the MUTCD.

**Table 9**
**TRAFFIC SIGNAL WARRANTS**

| Warrant No. | Description |
|---|---|
| 1 | Eight-Hour Vehicular Volume |
| 2 | Four-Hour Vehicular Volume |
| 3 | Peak-Hour |
| 4 | Pedestrian Volume |
| 5 | School Crossing |
| 6 | Coordinated Signal System |
| 7 | Crash Experience |
| 8 | Roadway Network |
| 9 | Intersection Near a Grade Crossing |

Each of the nine traffic signal warrants listed in Table 9 were evaluated for the subject intersection, the results of which follow.

[20]Federal Highway Administration, op. cit. 2.

## WARRANTS EVALUATION RESULTS

The traffic signal warrants listed in Table 9 were evaluated for the NH Route 106/ Steeplegate Mall (Project site) driveway intersection under following conditions:

- ***Design Speed:*** >40 mph
- ***Traffic Volumes:*** 2025 average-month Opening-Year Build conditions[21]
- ***Geometry:***
  - *NH Route 106 Northbound:* One left-turn lane and one through lane
  - *NH Route 106 Southbound:* One through lane and one right-turn lane
  - *Steeplegate Mall (Project site) driveway:* One left-turn lane and one right-turn lane

Table 10 summarizes the results of the TSWA for the subject intersection, with the detailed TSWA worksheets and supporting materials attached.

**Table 10**
**TRAFFIC SIGNAL WARRANTS ANALYSIS**

| Warrant No. | Description | 2025 Build Average-Month Conditions Satisfied? |
|---|---|---|
| 1 | Eight-Hour Vehicular Volume | **Yes** |
| 2 | Four-Hour Vehicular Volume | **Yes** |
| 3 | Peak-Hour | *N/A*[a] |
| 4 | Pedestrian Volume | No |
| 5 | School Crossing | No |
| 6 | Coordinated Signal System | No |
| 7 | Crash Experience | No |
| 8 | Roadway Network | No |
| 9 | Intersection Near a Grade Crossing | No |

[a]Warrant 3, Peak-Hour, is only applicable in instances where adjacent land uses attract or discharge a large volume of traffic in a brief period. As such, this warrant is not applicable for this analysis.

As can be seen in Table 10, the intersection of NH Route 106 at the Steeplegate Mall (Project site) driveway was found to satisfy Warrant 1, *Eight-Hour Vehicular Volume,* and Warrant 2, *Four-Hour Vehicular Volume*. As such, this analysis has indicated that the reinstallation of the traffic control signal at the NH Route 106/Steeplegate Mall driveway intersection is warranted based on the predicted traffic volumes that are expected to occur at the time that the Project is constructed.

[21]Traffic volumes at the intersection were adjusted to average-month conditions, and *do not* include traffic volumes associated with background development projects by others.

# TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build, and Build traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

## METHODOLOGY

### Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.[22] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

[22]The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual, 6th Edition;* Transportation Research Board; Washington, DC; 2016.

**Signalized Intersections**

The six levels of service for signalized intersections may be described as follows:

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than LOS A.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with oversaturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the 2000 *Highway Capacity Manual*[23] and implemented as a part of the Synchro® 11 software. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 11 summarizes the relationship between level of service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

[23] *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000.

**Table 11**
**LEVEL-OF-SERVICE CRITERIA**
**FOR SIGNALIZED INTERSECTIONS[a]**

| Level of Service | Control (Signal) Delay Per Vehicle (Seconds) |
|---|---|
| A | ≤10.0 |
| B | 10.1 to 20.0 |
| C | 20.1 to 35.0 |
| D | 35.1 to 55.0 |
| E | 55.1 to 80.0 |
| F | >80.0 |

[a]Source: *Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2000; page 16-2.

**Unsignalized Intersections**

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual, 6th Edition.*[24] Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual, 6th Edition*. Table 12 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

[24]*Highway Capacity Manual, 6th Edition;* Transportation Research Board; Washington, DC; 2016.

**Table 12**
**LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]**

| Level-Of-Service by Volume-to-Capacity Ratio | | Average Control Delay |
|---|---|---|
| v/c ≤ 1.0 | v/c > 1.0 | (Seconds Per Vehicle) |
| A | F | ≤10.0 |
| B | F | 10.1 to 15.0 |
| C | F | 15.1 to 25.0 |
| D | F | 25.1 to 35.0 |
| E | F | 35.1 to 50.0 |
| F | F | >50.0 |

[a]Source: *Highway Capacity Manual, 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

## Vehicle Queue Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro® intersection capacity analysis software. The Synchro® vehicle queue analysis methodology is a simulation based model which reports the number of vehicles that experience a delay of six seconds or more at an intersection. For signalized intersections, Synchro® reports both the average (50th percentile) and the 95th percentile vehicle queue. For unsignalized intersections, Synchro® reports the 95th percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only 5 percent of the time, or approximately three minutes out of sixty minutes during the peak one hour of the day (during the remaining fifty-seven minutes, the vehicle queue length will be less than the 95th percentile queue length).

## ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2024 Existing, 2025 No-Build, 2025 Opening-Year Build, 2035 No-Build and 2035 Build peak-month conditions for the study area intersections. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 13 and 14, with the detailed analysis results presented in the Appendix.

**Table 13**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at the Interstate 393 Westbound Ramps*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Westbound Off-Ramp WB LT | 0.03 | 19.7 | B | 0/0 | 0.03 | 19.4 | B | 0/1 | 0.03 | 20.0 | B | 0/1 | 0.03 | 19.5 | B | 0/1 | 0.03 | 20.2 | C | 0/1 |
| I-393 Westbound Off-Ramp WB RT | 0.01 | 19.6 | B | 0/0 | 0.01 | 19.4 | B | 0/0 | 0.01 | 19.9 | B | 0/0 | 0.02 | 19.4 | B | 0/0 | 0.02 | 20.1 | C | 0/0 |
| NH Route 106 NB LT | 0.15 | 17.6 | B | 1/1 | 0.18 | 17.4 | B | 1/1 | 0.49 | 14.1 | B | 2/4 | 0.18 | 17.3 | B | 1/1 | 0.50 | 14.4 | B | 2/4 |
| NH Route 106 NB TH | 0.31 | 1.8 | A | 0/2 | 0.32 | 1.8 | A | 0/2 | 0.34 | 1.8 | A | 0/2 | 0.35 | 1.9 | A | 0/2 | 0.37 | 1.9 | A | 0/2 |
| NH Route 106 SB TH | 0.29 | 5.7 | A | 1/4 | 0.30 | 5.8 | A | 1/4 | 0.61 | 11.7 | B | 3/7 | 0.33 | 6.0 | A | 1/4 | 0.65 | 12.1 | B | 3/7 |
| NH Route 106 SB RT | 0.76 | 3.6 | A | 0/0 | 0.77 | 3.8 | A | 0/0 | 0.62 | 1.9 | A | 0/0 | 0.85 | 6.1 | A | 0/1 | 0.70 | 2.7 | A | 0/0 |
| **Overall** | -- | **4.0** | **A** | -- | -- | **4.2** | **A** | -- | -- | **6.5** | **A** | -- | -- | **5.3** | **A** | -- | -- | **6.8** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Westbound Off-Ramp WB LT | 0.06 | 18.1 | B | 0/1 | 0.06 | 18.5 | B | 0/1 | 0.06 | 19.2 | B | 0/1 | 0.06 | 18.9 | B | 0/1 | 0.06 | 19.8 | B | 0/1 |
| I-393 Westbound Off-Ramp WB RT | 0.01 | 17.9 | B | 0/0 | 0.01 | 18.3 | B | 0/0 | 0.01 | 19.2 | B | 0/0 | 0.01 | 18.7 | B | 0/0 | 0.01 | 19.6 | B | 0/0 |
| NH Route 106 NB LT | 0.51 | 12.7 | B | 1/5 | 0.58 | 13.5 | B | 2/6 | 0.69 | 15.3 | B | 2/8 | 0.62 | 13.9 | B | 2/6 | 0.74 | 16.5 | B | 3/9 |
| NH Route 106 NB TH | 0.58 | 3.1 | A | 0/6 | 0.59 | 3.1 | A | 0/6 | 0.61 | 3.2 | A | 0/6 | 0.64 | 3.5 | A | 0/7 | 0.66 | 3.7 | A | 0/7 |
| NH Route 106 SB TH | 0.33 | 10.9 | B | 1/3 | 0.35 | 11.3 | B | 1/3 | 0.44 | 12.3 | B | 2/4 | 0.38 | 11.8 | B | 2/4 | 0.47 | 12.6 | B | 2/4 |
| NH Route 106 SB RT | 0.28 | 0.5 | A | 0/0 | 0.28 | 0.5 | A | 0/0 | 0.25 | 0.4 | A | 0/0 | 0.31 | 0.5 | A | 0/0 | 0.28 | 0.5 | A | 0/0 |
| **Overall** | -- | **5.7** | **A** | -- | -- | **6.1** | **A** | -- | -- | **7.3** | **A** | -- | -- | **6.5** | **A** | -- | -- | **7.8** | **A** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Westbound Off-Ramp WB LT/TH | 0.13 | 17.6 | B | 0/1 | 0.13 | 18.2 | B | 0/1 | 0.13 | 20.5 | C | 0/1 | 0.15 | 19.1 | B | 0/1 | 0.12 | 20.4 | C | 1/1 |
| I-393 Westbound Off-Ramp WB RT | 0.02 | 17.1 | B | 0/0 | 0.02 | 17.7 | B | 0/0 | 0.02 | 20.0 | B | 0/0 | 0.02 | 18.5 | B | 0/0 | 0.02 | 20.0 | B | 0/0 |
| NH Route 106 NB LT | 0.54 | 12.3 | B | 2/5 | 0.63 | 13.2 | B | 2/6 | 0.81 | 19.2 | B | 3/11 | 0.68 | 14.6 | B | 2/8 | 0.91 | 27.8 | C | 7/12 |
| NH Route 106 NB TH | 0.28 | 2.2 | A | 0/2 | 0.29 | 2.1 | A | 0/2 | 0.32 | 2.0 | A | 0/3 | 0.31 | 2.1 | A | 0/2 | 0.36 | 2.4 | A | 2/3 |
| NH Route 106 SB TH | 0.36 | 11.5 | B | 1/3 | 0.39 | 12.1 | B | 1/3 | 0.53 | 13.2 | B | 2/5 | 0.42 | 12.3 | B | 2/4 | 0.56 | 13.9 | B | 4/5 |
| NH Route 106 SB RT | 0.28 | 0.4 | A | 0/0 | 0.28 | 0.4 | A | 0/0 | 0.23 | 0.3 | A | 0/0 | 0.31 | 0.5 | A | 0/0 | 0.26 | 0.4 | A | 0/0 |
| **Overall** | -- | **6.5** | **A** | -- | -- | **7.2** | **A** | -- | -- | **10.2** | **B** | -- | -- | **7.7** | **A** | -- | -- | **13.2** | **B** | -- |
| ***NH Route 106 at the Interstate 393 Eastbound Ramps*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Eastbound Off-Ramp WB LT | 0.32 | 8.8 | A | 1/2 | 0.33 | 8.9 | A | 1/2 | 0.32 | 12.2 | B | 1/2 | 0.36 | 9.2 | A | 1/3 | 0.35 | 12.8 | B | 1/3 |
| I-393 Eastbound Off-Ramp WB RT | 0.14 | 0.1 | A | 0/0 | 0.15 | 0.1 | A | 0/0 | 0.20 | 0.2 | A | 0/0 | 0.16 | 0.1 | A | 0/0 | 0.21 | 0.2 | A | 0/0 |
| NH Route 106 NB TH | 0.28 | 6.2 | A | 1/2 | 0.29 | 6.3 | A | 1/2 | 0.50 | 6.3 | A | 2/4 | 0.32 | 6.5 | A | 1/2 | 0.52 | 6.6 | A | 0/5 |
| NH Route 106 NB RT | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 |
| NH Route 106 SB LT/TH | 0.40 | 6.7 | A | 2/3 | 0.40 | 6.7 | A | 2/3 | 0.50 | 6.3 | A | 2/4 | 0.45 | 7.1 | A | 2/3 | 0.54 | 6.8 | A | 3/5 |
| **Overall** | -- | **5.5** | **A** | -- | -- | **5.5** | **A** | -- | -- | **5.6** | **A** | -- | -- | **5.8** | **A** | -- | -- | **6.0** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Eastbound Off-Ramp WB LT | 0.67 | 16.8 | B | 5/8 | 0.69 | 17.7 | B | 6/8 | 0.66 | 18.5 | B | 5/7 | 0.75 | 19.8 | B | 6/9 | 0.71 | 19.7 | B | 6/8 |
| I-393 Eastbound Off-Ramp WB RT | 0.21 | 0.2 | A | 0/0 | 0.25 | 0.2 | A | 0/0 | 0.30 | 0.3 | A | 0/0 | 0.27 | 0.2 | A | 0/0 | 0.33 | 0.3 | A | 0/0 |
| NH Route 106 NB TH | 0.67 | 11.2 | B | 6/9 | 0.73 | 12.2 | B | 8/10 | 0.86 | 15.9 | B | 10/17 | 0.79 | 14.2 | B | 9/12 | 0.94 | 22.6 | C | 12/19 |
| NH Route 106 NB RT | 0.01 | 6.8 | A | 0/0 | 0.01 | 6.7 | A | 0/0 | 0.01 | 6.3 | A | 0/0 | 0.01 | 6.9 | A | 0/0 | 0.01 | 6.5 | A | 0/0 |
| NH Route 106 SB LT/TH | 0.27 | 7.9 | A | 2/3 | 0.28 | 7.9 | A | 2/3 | 0.35 | 7.8 | A | 3/4 | 0.31 | 8.3 | A | 2/3 | 0.41 | 8.5 | A | 3/4 |
| **Overall** | -- | **10.0** | **A** | -- | -- | **10.4** | **B** | -- | -- | **11.6** | **B** | -- | -- | **11.8** | **B** | -- | -- | **14.8** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| I-393 Eastbound Off-Ramp WB LT | 0.36 | 11.2 | B | 1/3 | 0.38 | 12.8 | B | 2/4 | 0.38 | 16.5 | B | 2/3 | 0.42 | 13.6 | B | 2/4 | 0.41 | 16.9 | B | 2/3 |
| I-393 Eastbound Off-Ramp WB RT | 0.24 | 0.2 | A | 0/0 | 0.29 | 0.3 | A | 0/0 | 0.35 | 0.3 | A | 0/0 | 0.32 | 0.3 | A | 0/0 | 0.38 | 0.4 | A | 0/0 |
| NH Route 106 NB TH | 0.50 | 6.8 | A | 3/5 | 0.55 | 7.1 | A | 3/6 | 0.67 | 7.3 | A | 5/8 | 0.59 | 7.6 | A | 4/7 | 0.71 | 8.2 | A | 6/10 |
| NH Route 106 NB RT | 0.01 | 5.0 | A | 0/0 | 0.01 | 4.8 | A | 0/0 | 0.01 | 3.9 | A | 0/0 | 0.01 | 4.9 | A | 0/0 | 0.01 | 4.1 | A | 0/0 |
| NH Route 106 SB LT/TH | 0.27 | 5.8 | A | 1/2 | 0.27 | 5.7 | A | 1/2 | 0.36 | 5.1 | A | 2/3 | 0.30 | 5.9 | A | 2/3 | 0.38 | 5.4 | A | 2/4 |
| **Overall** | -- | **5.4** | **A** | -- | -- | **5.5** | **A** | -- | -- | **5.7** | **A** | -- | -- | **5.9** | **A** | -- | -- | **6.2** | **A** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at NH Route 106*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.20 | 27.1 | C | 1/2 | 0.21 | 27.5 | C | 1/2 | 0.75 | 37.0 | D | 5/10 | 0.24 | 30.0 | C | 1/3 | 0.80 | 42.6 | D | 5/11 |
| NH Route 9 EB TH | 0.32 | 28.1 | C | 2/4 | 0.35 | 28.8 | C | 2/4 | 0.34 | 30.0 | C | 2/5 | 0.40 | 31.5 | C | 2/5 | 0.39 | 32.7 | C | 3/6 |
| NH Route 9 EB RT | 0.03 | 26.2 | C | 0/0 | 0.03 | 26.6 | C | 0/0 | 0.03 | 27.6 | C | 0/0 | 0.03 | 28.8 | C | 0/0 | 0.03 | 29.8 | C | 0/0 |
| NH Route 9 WB LT | 0.53 | 24.8 | C | 3/8 | 0.55 | 25.6 | C | 4/9 | 0.60 | 30.9 | C | 4/9 | 0.57 | 27.1 | C | 4/10 | 0.63 | 32.6 | C | 5/11 |
| NH Route 9 WB LT/TH | 0.48 | 23.5 | C | 3/7 | 0.50 | 24.2 | C | 3/7 | 0.59 | 29.2 | C | 5/8 | 0.52 | 25.3 | C | 4/8 | 0.61 | 30.6 | C | 5/9 |
| NH Route 9 WB RT | 0.06 | 20.6 | C | 0/0 | 0.06 | 21.1 | C | 0/0 | 0.05 | 24.4 | C | 0/0 | 0.07 | 21.8 | C | 0/0 | 0.06 | 25.1 | C | 0/0 |
| NH Route 106 NB LT | 0.16 | 35.3 | D | 0/1 | 0.16 | 36.0 | D | 0/1 | 0.18 | 41.0 | D | 0/1 | 0.19 | 38.9 | D | 0/1 | 0.20 | 43.6 | D | 0/1 |
| NH Route 106 NB TH | 0.25 | 21.7 | C | 1/4 | 0.30 | 24.1 | C | 2/4 | 0.42 | 27.3 | C | 3/6 | 0.32 | 25.6 | C | 2/5 | 0.44 | 28.4 | C | 4/7 |
| NH Route 106 NB RT | 0.07 | 20.6 | C | 0/2 | 0.08 | 22.7 | C | 0/2 | 0.10 | 24.9 | C | 0/2 | 0.08 | 24.0 | C | 0/2 | 0.11 | 25.8 | C | 0/2 |
| NH Route 106 SB LT | 0.19 | 30.5 | C | 1/2 | 0.14 | 28.5 | C | 1/2 | 0.16 | 33.4 | C | 1/2 | 0.16 | 30.7 | C | 1/2 | 0.17 | 35.2 | D | 1/2 |
| NH Route 106 SB TH | 0.60 | 21.8 | C | 5/9 | 0.60 | 21.9 | C | 5/9 | 0.66 | 25.5 | C | 6/10 | 0.65 | 24.0 | C | 6/10 | 0.70 | 27.2 | C | 8/11 |
| NH Route 106 SB RT | 0.15 | 0.2 | A | 0/0 | 0.15 | 0.2 | A | 0/0 | 0.38 | 0.7 | A | 0/0 | 0.17 | 0.2 | A | 0/0 | 0.40 | 0.8 | A | 0/0 |
| **Overall** | **--** | **20.8** | **C** | **--** | **--** | **21.5** | **C** | **--** | **--** | **24.0** | **C** | **--** | **--** | **23.0** | **C** | **--** | **--** | **25.9** | **C** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.65 | 39.6 | D | 5/9 | 0.85 | 50.6 | D | 7/13 | 1.30 | >80.0 | F | 14/20 | 1.01 | >80.0 | F | 9/15 | 1.48 | >80.0 | F | 16/22 |
| NH Route 9 EB TH | 0.88 | 61.6 | E | 7/17 | 1.02 | >80.0 | F | 9/20 | 1.22 | >80.0 | F | 13/22 | 1.23 | >80.0 | F | 12/22 | 1.42 | >80.0 | F | 15/25 |
| NH Route 9 EB RT | 0.03 | 33.2 | C | 0/0 | 0.04 | 34.0 | C | 0/0 | 0.04 | 37.0 | D | 0/0 | 0.04 | 38.0 | D | 0/0 | 0.04 | 40.3 | D | 0/0 |
| NH Route 9 WB LT | 0.53 | 36.7 | D | 4/7 | 0.55 | 37.0 | D | 5/8 | 0.61 | 40.1 | D | 6/9 | 0.60 | 41.6 | D | 5/9 | 0.68 | 45.9 | D | 7/10 |
| NH Route 9 WB LT/TH | 0.51 | 35.6 | D | 4/6 | 0.53 | 35.7 | D | 5/7 | 0.60 | 38.3 | D | 6/8 | 0.59 | 39.7 | D | 6/8 | 0.66 | 42.4 | D | 7/9 |
| NH Route 9 WB RT | 0.04 | 31.7 | C | 0/0 | 0.04 | 31.4 | C | 0/0 | 0.03 | 32.5 | C | 0/0 | 0.04 | 34.0 | C | 0/0 | 0.04 | 34.9 | C | 0/0 |
| NH Route 106 NB LT | 0.34 | 44.1 | D | 1/3 | 0.34 | 42.8 | D | 2/4 | 0.36 | 46.1 | D | 2/4 | 0.39 | 46.7 | D | 2/4 | 0.40 | 49.1 | D | 2/4 |
| NH Route 106 NB TH | 0.63 | 27.7 | C | 8/13 | 0.63 | 27.4 | C | 9/13 | 0.69 | 29.4 | C | 11/16 | 0.69 | 31.3 | C | 10/15 | 0.76 | 33.6 | C | 13/17 |
| NH Route 106 NB RT | 0.31 | 23.7 | C | 0/3 | 0.32 | 23.6 | C | 1/4 | 0.43 | 25.3 | C | 2/6 | 0.42 | 26.7 | C | 1/6 | 0.52 | 28.5 | C | 3/9 |
| NH Route 106 SB LT | 0.42 | 40.2 | D | 2/5 | 0.48 | 42.7 | D | 2/5 | 0.50 | 45.9 | D | 3/5 | 0.42 | 42.2 | D | 3/5 | 0.43 | 44.6 | D | 3/5 |
| NH Route 106 SB TH | 0.46 | 21.8 | C | 6/10 | 0.51 | 24.3 | C | 7/10 | 0.55 | 25.4 | C | 8/12 | 0.52 | 24.2 | C | 8/12 | 0.57 | 25.4 | C | 10/13 |
| NH Route 106 SB RT | 0.21 | 0.3 | A | 0/0 | 0.29 | 0.5 | A | 0/0 | 0.41 | 0.8 | A | 0/0 | 0.31 | 0.5 | A | 0/0 | 0.43 | 0.9 | A | 0/0 |
| **Overall** | **--** | **29.2** | **C** | **--** | **--** | **33.8** | **C** | **--** | **--** | **60.7** | **E** | **--** | **--** | **46.3** | **D** | **--** | **--** | **>80.0** | **F** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.56 | 32.1 | C | 4/7 | 0.79 | 41.6 | D | 6/12 | 1.26 | >80.0 | F | 13/21 | 0.88 | 51.2 | D | 7/14 | 1.40 | >80.0 | F | 15/24 |
| NH Route 9 EB TH | 0.71 | 38.7 | D | 5/13 | 0.88 | 58.3 | E | 7/17 | 1.09 | >80.0 | F | 11/21 | 1.00 | >80.0 | F | 9/20 | 1.25 | >80.0 | F | 13/24 |
| NH Route 9 EB RT | 0.03 | 27.9 | C | 0/0 | 0.04 | 29.9 | C | 0/0 | 0.04 | 34.2 | C | 0/0 | 0.05 | 31.5 | C | 0/0 | 0.05 | 36.6 | D | 0/0 |
| NH Route 9 WB LT | 0.53 | 31.0 | C | 4/8 | 0.58 | 33.0 | C | 5/9 | 0.66 | 38.1 | D | 7/12 | 0.61 | 35.0 | D | 6/10 | 0.72 | 42.8 | D | 8/15 |
| NH Route 9 WB LT/TH | 0.53 | 30.1 | C | 4/7 | 0.56 | 31.7 | C | 5/8 | 0.65 | 35.6 | D | 7/11 | 0.61 | 33.3 | C | 6/9 | 0.71 | 39.0 | D | 8/12 |
| NH Route 9 WB RT | 0.03 | 26.2 | C | 0/0 | 0.03 | 26.9 | C | 0/0 | 0.02 | 28.6 | C | 0/0 | 0.03 | 27.7 | C | 0/0 | 0.03 | 30.1 | C | 0/0 |
| NH Route 106 NB LT | 0.30 | 36.6 | D | 1/3 | 0.39 | 38.7 | D | 2/4 | 0.41 | 43.0 | D | 2/4 | 0.42 | 40.2 | D | 2/4 | 0.44 | 45.1 | D | 2/5 |
| NH Route 106 NB TH | 0.46 | 25.1 | C | 5/8 | 0.47 | 26.1 | C | 5/8 | 0.61 | 30.1 | C | 8/11 | 0.57 | 30.0 | C | 6/9 | 0.64 | 31.3 | C | 9/13 |
| NH Route 106 NB RT | 0.19 | 23.0 | C | 0/3 | 0.19 | 23.7 | C | 0/3 | 0.25 | 25.8 | C | 0/3 | 0.21 | 26.5 | C | 0/3 | 0.27 | 26.5 | C | 0/3 |
| NH Route 106 SB LT | 0.29 | 36.1 | D | 1/3 | 0.28 | 37.3 | D | 1/3 | 0.26 | 40.0 | D | 1/3 | 0.24 | 35.7 | D | 1/3 | 0.27 | 41.3 | D | 2/3 |
| NH Route 106 SB TH | 0.61 | 26.8 | C | 6/10 | 0.62 | 27.9 | C | 7/11 | 0.71 | 31.0 | C | 10/14 | 0.66 | 29.5 | C | 8/12 | 0.72 | 31.7 | C | 11/15 |
| NH Route 106 SB RT | 0.28 | 0.4 | A | 0/0 | 0.38 | 0.7 | A | 0/0 | 0.53 | 1.3 | A | 0/0 | 0.41 | 0.8 | A | 0/0 | 0.56 | 1.5 | A | 0/0 |
| **Overall** | **--** | **25.2** | **C** | **--** | **--** | **28.4** | **C** | **--** | **--** | **54.0** | **D** | **--** | **--** | **33.4** | **C** | **--** | **--** | **68.6** | **E** | **--** |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at Break O' Day Drive and Old Sheep Davis Road*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH | | | | | 0.01 | 10.0 | A | 0/0 | 0.01 | 12.6 | B | 0/0 | 0.01 | 10.3 | B | 0/0 | 0.01 | 12.8 | B | 0/0 |
| Break O' Day Drive SEB RT | | | | | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 |
| Old Sheep Davis Road NWB LT | | | | | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 |
| NH Route 9 EB LT | | | | | 0.01 | 14.3 | B | 0/0 | 0.01 | 17.0 | B | 0/0 | 0.01 | 14.7 | B | 0/0 | 0.01 | 17.2 | B | 0/0 |
| NH Route 9 EB TH/RT | | | | | 0.19 | 8.2 | A | 1/2 | 0.38 | 7.9 | A | 1/4 | 0.21 | 8.1 | A | 1/2 | 0.39 | 7.9 | A | 1/4 |
| NH Route 9 WB UT/LT | | | | | 0.07 | 14.6 | B | 0/1 | 0.08 | 17.3 | B | 0/1 | 0.07 | 14.9 | B | 0/1 | 0.08 | 17.5 | B | 0/1 |
| NH Route 9 WB TH/RT | | | | | 0.37 | 8.8 | A | 1/3 | 0.55 | 8.9 | A | 2/5 | 0.39 | 8.8 | A | 1/3 | 0.57 | 9.0 | A | 2/5 |
| **Overall** | | | | | -- | **8.7** | **A** | -- | -- | **8.7** | **A** | -- | -- | **8.6** | **A** | -- | -- | **8.7** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH | | | | | 0.48 | 17.2 | B | 1/4 | 0.51 | 19.0 | B | 1/4 | 0.49 | 17.6 | B | 1/4 | 0.51 | 19.3 | B | 1/4 |
| Break O' Day Drive SEB RT | *See Unsignalized Intersection* | | | | 0.01 | 14.4 | B | 0/0 | 0.01 | 15.8 | B | 0/0 | 0.01 | 14.7 | B | 0/0 | 0.01 | 16.0 | B | 0/0 |
| Old Sheep Davis Road NWB LT | *Level-of-Service and Vehicle Queue* | | | | 0.00 | 14.4 | B | 0/0 | 0.00 | 15.7 | B | 0/0 | 0.00 | 14.7 | B | 0/0 | 0.00 | 15.9 | B | 0/0 |
| NH Route 9 EB LT | *Summary (Table 14)* | | | | 0.11 | 21.5 | C | 0/1 | 0.12 | 22.9 | C | 0/1 | 0.12 | 22.0 | C | 0/1 | 0.12 | 23.2 | C | 0/1 |
| NH Route 9 EB TH/RT | | | | | 0.41 | 8.4 | A | 2/6 | 0.53 | 8.8 | A | 3/8 | 0.45 | 8.5 | A | 2/7 | 0.56 | 9.2 | A | 3/9 |
| NH Route 9 WB UT/LT | | | | | 0.04 | 21.0 | C | 0/1 | 0.04 | 22.4 | C | 0/1 | 0.04 | 21.5 | C | 0/1 | 0.04 | 22.7 | C | 0/1 |
| NH Route 9 WB TH/RT | | | | | 0.43 | 8.5 | A | 2/6 | 0.55 | 9.0 | A | 3/8 | 0.46 | 8.6 | A | 2/6 | 0.58 | 9.3 | A | 3/9 |
| **Overall** | | | | | -- | **9.5** | **A** | -- | -- | **9.9** | **A** | -- | -- | **9.6** | **A** | -- | -- | **10.1** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH | | | | | 0.57 | 19.4 | B | 2/4 | 0.58 | 20.8 | C | 2/4 | 0.58 | 20.0 | B | 2/4 | 0.52 | 20.8 | C | 2/4 |
| Break O' Day Drive SEB RT | | | | | 0.01 | 15.0 | B | 0/0 | 0.01 | 15.9 | B | 0/0 | 0.01 | 15.3 | B | 0/0 | 0.01 | 15.9 | B | 0/0 |
| Old Sheep Davis Road NWB LT | | | | | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 |
| NH Route 9 EB LT | | | | | 0.14 | 23.2 | C | 0/1 | 0.14 | 24.3 | C | 0/1 | 0.14 | 23.5 | C | 0/1 | 0.14 | 24.3 | C | 0/1 |
| NH Route 9 EB TH/RT | | | | | 0.41 | 8.5 | A | 2/6 | 0.54 | 9.4 | A | 3/9 | 0.44 | 8.7 | A | 2/7 | 0.58 | 9.8 | A | 3/11 |
| NH Route 9 WB LT | | | | | 0.01 | 22.3 | C | 0/0 | 0.01 | 23.4 | C | 0/0 | 0.01 | 22.7 | C | 0/0 | 0.01 | 23.4 | C | 0/0 |
| NH Route 9 WB TH/RT | | | | | 0.57 | 9.7 | A | 3/9 | 0.73 | 12.0 | B | 4/15 | 0.61 | 10.7 | B | 3/11 | 0.77 | 13.0 | B | 5/17 |
| **Overall** | | | | | -- | **10.4** | **B** | -- | -- | **11.8** | **B** | -- | -- | **10.6** | **B** | -- | -- | **12.4** | **B** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Walmart driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.37 | 17.4 | B | 0/2 | 0.37 | 17.4 | B | 0/2 | 0.34 | 20.3 | C | 1/2 | 0.37 | 17.6 | B | 1/2 | 0.35 | 20.7 | C | 1/2 |
| Private driveway SEB RT | 0.03 | 10.8 | B | 0/1 | 0.03 | 10.8 | B | 0/1 | 0.03 | 13.9 | B | 0/1 | 0.03 | 11.0 | B | 0/1 | 0.03 | 14.2 | B | 0/1 |
| Walmart driveway NWB LT/TH | 0.17 | 16.2 | B | 0/1 | 0.17 | 16.2 | B | 0/1 | 0.17 | 19.2 | B | 1/1 | 0.18 | 16.4 | B | 0/1 | 0.17 | 19.5 | B | 1/1 |
| Walmart driveway NWB RT | 0.02 | 10.6 | B | 0/1 | 0.02 | 10.6 | B | 0/1 | 0.02 | 13.6 | B | 0/1 | 0.02 | 10.7 | B | 0/1 | 0.02 | 13.9 | B | 0/1 |
| NH Route 9 EB LT | 0.15 | 15.0 | B | 0/1 | 0.15 | 15.0 | B | 0/1 | 0.19 | 19.9 | B | 1/2 | 0.15 | 15.1 | B | 0/1 | 0.19 | 20.2 | C | 1/2 |
| NH Route 9 EB TH | 0.09 | 6.8 | A | 0/1 | 0.09 | 6.8 | A | 0/1 | 0.30 | 7.3 | A | 2/4 | 0.10 | 6.8 | A | 0/1 | 0.31 | 7.2 | A | 3/4 |
| NH Route 9 EB RT | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.2 | A | 0/0 | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.5 | A | 0/0 |
| NH Route 9 WB LT | 0.21 | 15.0 | B | 0/2 | 0.21 | 15.0 | B | 0/1 | 0.26 | 20.0 | B | 1/2 | 0.21 | 15.2 | B | 0/2 | 0.27 | 20.4 | C | 1/2 |
| NH Route 9 WB TH/RT | 0.17 | 6.9 | A | 1/2 | 0.17 | 6.9 | A | 1/2 | 0.38 | 7.5 | A | 3/5 | 0.19 | 6.9 | A | 1/2 | 0.38 | 7.4 | A | 3/5 |
| **Overall** | -- | **9.9** | **A** | -- | -- | **9.9** | **A** | -- | -- | **9.4** | **A** | -- | -- | **9.8** | **A** | -- | -- | **9.8** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 |
| Private driveway SEB RT | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 |
| Walmart driveway NWB LT/TH | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 |
| Walmart driveway NWB RT | 0.11 | 19.2 | B | 0/1 | 0.11 | 19.2 | B | 0/1 | 0.25 | 20.3 | C | 2/3 | 0.14 | 19.4 | B | 1/2 | 0.27 | 20.4 | C | 2/3 |
| NH Route 9 EB LT | 0.30 | 38.9 | D | 1/2 | 0.30 | 38.9 | D | 1/2 | 0.30 | 46.1 | D | 2/3 | 0.30 | 41.1 | D | 1/3 | 0.30 | 46.4 | D | 2/3 |
| NH Route 9 EB TH | 0.24 | 7.9 | A | 3/5 | 0.25 | 7.9 | A | 3/5 | 0.38 | 9.3 | A | 4/11 | 0.27 | 7.6 | A | 3/5 | 0.40 | 9.3 | A | 4/11 |
| NH Route 9 EB RT | 0.01 | 9.0 | A | 0/1 | 0.01 | 9.0 | A | 0/0 | 0.01 | 9.0 | A | 0/1 | 0.01 | 9.0 | A | 0/0 | 0.01 | 9.0 | A | 0/0 |
| NH Route 9 WB LT | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 |
| NH Route 9 WB TH/RT | 0.19 | 8.2 | A | 2/4 | 0.20 | 8.2 | A | 2/4 | 0.30 | 9.0 | A | 3/6 | 0.21 | 8.3 | A | 2/4 | 0.32 | 9.2 | A | 4/6 |
| **Overall** | -- | **16.9** | **B** | -- | -- | **16.9** | **B** | -- | -- | **15.9** | **B** | -- | -- | **16.4** | **B** | -- | -- | **16.4** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 |
| Private driveway SEB RT | 0.06 | 10.8 | B | 0/1 | 0.06 | 11.0 | B | 0/1 | 0.10 | 12.4 | B | 1/2 | 0.06 | 11.2 | B | 0/1 | 0.10 | 12.4 | B | 1/2 |
| Walmart driveway NWB LT/TH | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 |
| Walmart driveway NWB RT | 0.11 | 18.6 | B | 0/1 | 0.11 | 18.6 | B | 0/1 | 0.22 | 19.6 | B | 2/3 | 0.14 | 18.9 | B | 1/2 | 0.24 | 19.7 | B | 2/3 |
| NH Route 9 EB LT | 1.01 | >80.0 | F | 2/6 | 1.01 | >80.0 | F | 2/6 | 1.01 | >80.0 | F | 2/7 | 1.01 | >80.0 | F | 1/6 | 1.01 | >80.0 | F | 2/7 |
| NH Route 9 EB TH | 0.27 | 6.5 | A | 2/2 | 0.28 | 6.6 | A | 2/3 | 0.44 | 7.7 | A | 3/4 | 0.31 | 6.8 | A | 2/3 | 0.47 | 9.0 | A | 3/4 |
| NH Route 9 EB RT | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 |
| NH Route 9 WB LT | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 |
| NH Route 9 WB TH/RT | 0.47 | 24.2 | C | 6/8 | 0.48 | 24.1 | C | 6/8 | 0.68 | 26.4 | C | 9/12 | 0.51 | 24.3 | C | 7/8 | 0.72 | 27.5 | C | 10/13 |
| **Overall** | -- | **25.9** | **C** | -- | -- | **25.7** | **C** | -- | -- | **25.1** | **C** | -- | -- | **25.4** | **C** | -- | -- | **25.6** | **C** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.03 | 17.3 | B | 0/0 | 0.03 | 17.3 | B | 0/0 | 0.03 | 18.8 | B | 0/1 | 0.03 | 17.5 | B | 0/0 | 0.03 | 18.9 | B | 0/1 |
| Patriots Place driveway SEB RT | 0.00 | 17.2 | B | 0/0 | 0.00 | 17.2 | B | 0/0 | 0.00 | 18.8 | B | 0/0 | 0.00 | 17.4 | B | 0/0 | 0.00 | 18.9 | B | 0/0 |
| Harbor Freight Tools driveway NWB LT/TH | 0.31 | 18.9 | B | 0/1 | 0.31 | 18.9 | B | 0/1 | 0.27 | 20.2 | C | 1/1 | 0.32 | 19.2 | B | 0/1 | 0.32 | 20.4 | C | 1/1 |
| Harbor Freight Tools driveway NWB RT | 0.00 | 17.2 | B | 0/0 | 0.00 | 17.2 | B | 0/0 | 0.00 | 18.7 | B | 0/0 | 0.00 | 17.4 | B | 0/0 | 0.00 | 18.8 | B | 0/0 |
| NH Route 9 EB LT | 0.14 | 18.1 | B | 0/1 | 0.14 | 18.1 | B | 0/1 | 0.16 | 22.6 | C | 0/1 | 0.14 | 18.4 | B | 0/1 | 0.17 | 22.7 | C | 0/1 |
| NH Route 9 EB TH | 0.13 | 4.5 | A | 0/2 | 0.13 | 4.5 | A | 0/2 | 0.34 | 6.0 | A | 2/4 | 0.15 | 4.4 | A | 0/2 | 0.36 | 6.0 | A | 2/4 |
| NH Route 9 EB RT | 0.01 | 4.2 | A | 0/0 | 0.01 | 4.2 | A | 0/0 | 0.01 | 4.8 | A | 0/0 | 0.01 | 4.1 | A | 0/0 | 0.01 | 4.7 | A | 0/0 |
| NH Route 9 WB LT | 0.06 | 17.6 | B | 0/1 | 0.06 | 17.6 | B | 0/1 | 0.07 | 21.6 | C | 0/1 | 0.06 | 17.9 | B | 0/1 | 0.07 | 21.8 | C | 0/1 |
| NH Route 9 WB TH/RT | 0.17 | 4.5 | A | 0/2 | 0.17 | 4.5 | A | 0/2 | 0.39 | 6.0 | A | 2/5 | 0.18 | 4.5 | A | 0/2 | 0.40 | 6.1 | A | 2/5 |
| **Overall** | -- | **6.3** | **A** | -- | -- | **6.3** | **A** | -- | -- | **6.8** | **A** | -- | -- | **6.1** | **A** | -- | -- | **6.8** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 |
| Patriots Place driveway SEB RT | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 |
| Harbor Freight Tools driveway NWB LT/TH | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 |
| Harbor Freight Tools driveway NWB RT | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 |
| NH Route 9 EB LT | 0.35 | 41.5 | D | 2/4 | 0.35 | 41.8 | D | 2/4 | 0.35 | 36.1 | D | 2/4 | 0.35 | 42.4 | D | 2/4 | 0.35 | 35.8 | D | 2/4 |
| NH Route 9 EB TH | 0.24 | 9.3 | A | 0/5 | 0.24 | 8.9 | A | 1/5 | 0.36 | 14.8 | B | 3/10 | 0.27 | 9.7 | A | 1/5 | 0.39 | 15.0 | B | 3/11 |
| NH Route 9 EB RT | 0.03 | 7.3 | A | 0/0 | 0.03 | 7.2 | A | 0/0 | 0.03 | 7.7 | A | 0/1 | 0.03 | 7.2 | A | 0/0 | 0.03 | 7.6 | A | 0/1 |
| NH Route 9 WB LT | 0.10 | 43.7 | D | 0/1 | 0.10 | 42.2 | D | 1/1 | 0.09 | 47.3 | D | 1/1 | 0.10 | 42.6 | D | 1/1 | 0.09 | 48.6 | D | 1/1 |
| NH Route 9 WB TH/RT | 0.22 | 10.8 | B | 2/6 | 0.23 | 10.4 | B | 2/6 | 0.35 | 13.7 | B | 3/9 | 0.25 | 10.9 | B | 2/6 | 0.37 | 14.1 | B | 4/10 |
| **Overall** | -- | **17.0** | **B** | -- | -- | **16.6** | **B** | -- | -- | **18.2** | **B** | -- | -- | **16.6** | **B** | -- | -- | **18.2** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 |
| Patriots Place driveway SEB RT | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 |
| Harbor Freight Tools driveway NWB LT/TH | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 |
| Harbor Freight Tools driveway NWB RT | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 |
| NH Route 9 EB LT | 0.45 | 31.8 | C | 2/3 | 0.45 | 31.8 | C | 2/3 | 0.45 | 53.1 | D | 3/4 | 0.45 | 32.2 | C | 2/3 | 0.45 | 53.4 | D | 3/4 |
| NH Route 9 EB TH | 0.33 | 5.7 | A | 0/4 | 0.34 | 5.6 | A | 0/4 | 0.47 | 5.9 | A | 2/5 | 0.38 | 5.5 | A | 1/5 | 0.51 | 5.8 | A | 2/5 |
| NH Route 9 EB RT | 0.04 | 0.5 | A | 0/0 | 0.04 | 0.8 | A | 0/0 | 0.04 | 3.5 | A | 0/0 | 0.04 | 1.0 | A | 0/0 | 0.04 | 2.5 | A | 0/0 |
| NH Route 9 WB LT | 0.17 | 55.4 | E | 1/1 | 0.18 | 55.1 | E | 1/1 | 0.18 | 46.2 | D | 0/1 | 0.20 | 52.8 | D | 1/1 | 0.19 | 52.8 | D | 1/1 |
| NH Route 9 WB TH/RT | 0.26 | 16.5 | B | 4/6 | 0.27 | 16.5 | B | 4/6 | 0.43 | 16.5 | B | 7/7 | 0.29 | 16.5 | B | 5/6 | 0.46 | 16.5 | B | 7/8 |
| **Overall** | -- | **16.7** | **B** | -- | -- | **16.5** | **B** | -- | -- | **16.5** | **B** | -- | -- | **16.5** | **B** | -- | -- | **16.5** | **B** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Steeplegate Mall (South Project site) driveway and the Carrier Place driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.05 | 18.1 | B | 0/0 | 0.05 | 18.1 | B | 0/0 | 0.02 | 21.9 | C | 0/1 | 0.05 | 18.3 | B | 0/0 | 0.02 | 22.2 | C | 0/1 |
| Carrier Place driveway SEB RT | 0.00 | 15.3 | B | 0/0 | 0.00 | 15.3 | B | 0/0 | 0.00 | 19.2 | B | 0/0 | 0.00 | 15.5 | B | 0/0 | 0.00 | 19.5 | B | 0/0 |
| Project site driveway NWB LT/TH | 0.14 | 18.5 | B | 0/1 | 0.14 | 18.5 | B | 0/1 | 0.50 | 25.3 | C | 2/4 | 0.14 | 18.7 | B | 0/1 | 0.50 | 25.7 | C | 2/4 |
| Project site driveway NWB RT | 0.00 | 15.4 | B | 0/0 | 0.00 | 15.4 | B | 0/0 | 0.20 | 7.9 | A | 0/1 | 0.00 | 15.6 | B | 0/0 | 0.20 | 8.2 | A | 0/1 |
| NH Route 9 EB LT | 0.10 | 15.4 | B | 0/1 | 0.10 | 18.4 | B | 0/1 | 0.14 | 28.9 | C | 0/1 | 0.10 | 18.7 | B | 0/1 | 0.14 | 29.3 | C | 0/1 |
| NH Route 9 EB TH/RT | 0.16 | 4.2 | A | 0/2 | 0.16 | 4.3 | A | 0/2 | 0.27 | 17.6 | B | 2/2 | 0.18 | 4.3 | A | 0/2 | 0.30 | 17.6 | B | 2/3 |
| NH Route 9 WB LT | 0.01 | 18.1 | B | 0/0 | 0.01 | 18.1 | B | 0/0 | 0.06 | 16.5 | B | 0/2 | 0.01 | 18.3 | B | 0/0 | 0.06 | 16.3 | B | 0/2 |
| NH Route 9 WB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.62 | 18.0 | B | 5/9 | -- | -- | -- | -- | 0.62 | 18.5 | B | 5/10 |
| NH Route 9 WB TH/RT | 0.18 | 4.3 | A | 0/2 | 0.18 | 4.4 | A | 0/2 | -- | -- | -- | -- | 0.20 | 4.4 | A | 0/2 | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.15 | 5.7 | A | 1/2 | -- | --- | -- | -- | 0.16 | 5.7 | A | 1/3 |
| **Overall** | **--** | **5.3** | **A** | **--** | **--** | **5.3** | **A** | **--** | **--** | **13.8** | **B** | **--** | **--** | **5.2** | **A** | **--** | **--** | **13.9** | **B** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.39 | 33.7 | C | 1/3 | 0.39 | 33.7 | C | 1/3 | 0.31 | 30.4 | C | 1/3 | 0.39 | 33.7 | C | 1/3 | 0.31 | 30.4 | C | 1/3 |
| Carrier Place driveway SEB RT | 0.02 | 24.2 | C | 0/1 | 0.02 | 24.2 | C | 0/1 | 0.02 | 21.8 | C | 0/1 | 0.02 | 24.2 | C | 0/1 | 0.02 | 21.8 | C | 0/1 |
| Project site driveway NWB LT/TH | 0.15 | 31.7 | C | 1/2 | 0.15 | 31.7 | C | 1/2 | 0.56 | 33.9 | C | 3/4 | 0.15 | 31.7 | C | 1/2 | 0.56 | 33.9 | C | 3/4 |
| Project site driveway NWB RT | 0.01 | 25.6 | C | 0/1 | 0.01 | 25.6 | C | 0/1 | 0.26 | 17.1 | B | 2/3 | 0.01 | 25.6 | C | 0/1 | 0.28 | 17.3 | B | 2/3 |
| NH Route 9 EB LT | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 |
| NH Route 9 EB TH/RT | 0.26 | 6.2 | A | 3/5 | 0.27 | 6.3 | A | 3/5 | 0.34 | 14.1 | B | 4/7 | 0.30 | 6.5 | A | 3/5 | 0.38 | 14.5 | B | 4/8 |
| NH Route 9 WB LT | 0.14 | 33.4 | C | 1/1 | 0.14 | 34.0 | C | 1/1 | 0.08 | 12.1 | B | 0/2 | 0.14 | 32.9 | C | 1/1 | 0.08 | 12.1 | B | 0/2 |
| NH Route 9 WB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.61 | 31.7 | C | 5/8 | -- | -- | -- | -- | 0.61 | 30.7 | C | 5/8 |
| NH Route 9 WB TH/RT | 0.31 | 11.0 | B | 4/7 | 0.32 | 11.0 | B | 4/7 | -- | -- | -- | -- | 0.36 | 11.3 | B | 4/8 | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.33 | 11.2 | B | 4/8 | -- | -- | -- | -- | 0.37 | 11.8 | B | 4/8 |
| **Overall** | **--** | **11.9** | **B** | **--** | **--** | **11.9** | **B** | **--** | **--** | **17.6** | **B** | **--** | **--** | **11.8** | **B** | **--** | **--** | **17.5** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.41 | 40.9 | D | 1/3 | 0.41 | 40.9 | D | 1/3 | 0.21 | 29.9 | C | 1/2 | 0.41 | 40.9 | D | 1/3 | 0.21 | 29.9 | C | 1/2 |
| Carrier Place driveway SEB RT | 0.08 | 30.6 | C | 1/2 | 0.09 | 30.7 | C | 1/2 | 0.06 | 22.3 | C | 1/1 | 0.09 | 30.7 | C | 1/2 | 0.06 | 22.4 | C | 1/1 |
| Project site driveway NWB LT/TH | 0.24 | 39.0 | D | 1/2 | 0.24 | 39.0 | D | 1/2 | 0.65 | 37.3 | D | 4/7 | 0.24 | 39.0 | D | 1/2 | 0.65 | 37.3 | D | 4/7 |
| Project site driveway NWB RT | 0.02 | 32.0 | C | 0/1 | 0.02 | 32.0 | C | 0/1 | 0.36 | 16.4 | B | 4/5 | 0.03 | 32.1 | C | 0/1 | 0.37 | 16.5 | B | 4/5 |
| NH Route 9 EB LT | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 |
| NH Route 9 EB TH/RT | 0.33 | 5.4 | A | 4/6 | 0.34 | 5.4 | A | 4/7 | 0.51 | 20.9 | C | 7/10 | 0.38 | 5.7 | A | 5/7 | 0.58 | 21.9 | C | 8/12 |
| NH Route 9 WB LT | 0.12 | 41.8 | D | 1/1 | 0.12 | 42.6 | D | 1/1 | 0.20 | 17.5 | B | 1/4 | 0.12 | 42.6 | D | 0/1 | 0.20 | 17.5 | B | 1/4 |
| NH Route 9 WB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.74 | 39.7 | D | 8/10 | -- | -- | -- | -- | 0.74 | 39.7 | D | 8/9 |
| NH Route 9 WB TH/RT | 0.36 | 5.2 | A | 5/7 | 0.37 | 5.3 | A | 5/7 | -- | -- | -- | -- | 0.41 | 5.8 | A | 7/8 | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.42 | 8.6 | A | 6/7 | -- | -- | -- | -- | 0.47 | 9.1 | A | 7/8 |
| **Overall** | **--** | **9.2** | **A** | **--** | **--** | **9.2** | **A** | **--** | **--** | **20.1** | **C** | **--** | **--** | **9.2** | **A** | **--** | **--** | **20.2** | **C** | **--** |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at D'Amante Drive and Old Loudon Road*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.28 | 17.0 | B | 1/3 | 0.33 | 18.9 | B | 2/3 | 0.44 | 19.6 | B | 3/5 | 0.34 | 18.7 | B | 2/4 | 0.44 | 19.2 | B | 3/5 |
| D'Amante Drive NB LT/TH | 0.28 | 17.0 | B | 1/3 | 0.33 | 18.9 | B | 2/3 | 0.44 | 19.6 | B | 3/5 | 0.34 | 18.6 | B | 2/4 | 0.45 | 19.2 | B | 3/5 |
| D'Amante Drive NB RT | 0.03 | 11.9 | B | 0/0 | 0.03 | 12.2 | B | 0/0 | 0.03 | 13.1 | B | 0/0 | 0.03 | 12.0 | B | 0/0 | 0.03 | 11.7 | B | 0/0 |
| Old Loudon Road SB LT/TH | 0.23 | 23.4 | C | 1/2 | 0.43 | 26.0 | C | 1/2 | 0.44 | 28.7 | C | 1/2 | 0.47 | 27.0 | C | 1/2 | 0.47 | 29.1 | C | 1/2 |
| Old Loudon Road SB RT | 0.02 | 17.1 | B | 0/1 | 0.04 | 16.5 | B | 0/1 | 0.04 | 18.8 | B | 0/1 | 0.04 | 16.9 | B | 0/1 | 0.04 | 18.8 | B | 0/1 |
| NH Route 9 EB LT | 0.24 | 22.0 | C | 1/2 | 0.23 | 22.0 | C | 1/2 | 0.25 | 24.4 | C | 1/2 | 0.25 | 22.4 | C | 1/2 | 0.27 | 24.5 | C | 1/2 |
| NH Route 9 EB TH | 0.23 | 14.7 | B | 1/3 | 0.24 | 16.0 | B | 2/3 | 0.26 | 16.2 | B | 2/3 | 0.26 | 16.5 | B | 2/3 | 0.33 | 18.2 | B | 2/4 |
| NH Route 9 EB RT | 0.10 | 6.7 | A | 0/1 | 0.11 | 7.6 | A | 0/1 | 0.16 | 6.6 | A | 0/1 | 0.12 | 7.5 | A | 0/1 | 0.17 | 7.4 | A | 0/1 |
| NH Route 9 WB LT | 0.14 | 21.9 | C | 0/1 | 0.11 | 22.0 | C | 1/1 | 0.17 | 25.8 | C | 1/1 | 0.13 | 22.5 | C | 1/1 | 0.14 | 24.4 | C | 1/1 |
| NH Route 9 WB TH/RT | 0.32 | 15.7 | B | 2/4 | 0.33 | 17.2 | B | 2/4 | 0.40 | 18.7 | B | 3/4 | 0.37 | 17.9 | B | 2/4 | 0.45 | 19.6 | B | 3/5 |
| **Overall** | -- | **14.9** | **B** | -- | -- | **16.4** | **B** | -- | -- | **16.9** | **B** | -- | -- | **16.7** | **B** | -- | -- | **17.5** | **B** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.48 | 24.6 | C | 4/7 | 0.51 | 23.3 | C | 4/7 | 0.69 | 30.8 | C | 6/10 | 0.60 | 28.0 | C | 5/8 | 0.72 | 32.3 | C | 7/12 |
| D'Amante Drive NB LT/TH | 0.47 | 24.5 | C | 4/7 | 0.51 | 23.3 | C | 4/7 | 0.68 | 30.3 | C | 6/10 | 0.59 | 27.7 | C | 5/8 | 0.71 | 31.8 | C | 7/11 |
| D'Amante Drive NB RT | 0.08 | 14.4 | B | 0/1 | 0.08 | 14.5 | B | 0/1 | 0.08 | 15.4 | B | 0/1 | 0.09 | 15.3 | B | 0/1 | 0.09 | 15.3 | B | 0/1 |
| Old Loudon Road SB LT/TH | 0.46 | 35.6 | D | 1/3 | 0.54 | 34.7 | C | 2/3 | 0.53 | 38.1 | D | 2/3 | 0.62 | 42.8 | D | 2/4 | 0.58 | 40.6 | D | 2/3 |
| Old Loudon Road SB RT | 0.04 | 24.0 | C | 0/1 | 0.05 | 21.3 | C | 0/1 | 0.05 | 24.4 | C | 0/1 | 0.05 | 23.7 | C | 0/1 | 0.05 | 23.1 | C | 0/1 |
| NH Route 9 EB LT | 0.45 | 32.6 | C | 2/5 | 0.53 | 30.8 | C | 2/5 | 0.57 | 35.6 | D | 3/5 | 0.60 | 36.3 | D | 3/5 | 0.50 | 32.4 | C | 3/5 |
| NH Route 9 EB TH | 0.48 | 21.7 | C | 5/8 | 0.49 | 20.3 | C | 5/7 | 0.53 | 21.9 | C | 6/8 | 0.52 | 21.5 | C | 6/8 | 0.59 | 23.1 | C | 6/8 |
| NH Route 9 EB RT | 0.21 | 8.2 | A | 0/1 | 0.21 | 7.8 | A | 0/1 | 0.29 | 8.7 | A | 0/2 | 0.24 | 8.5 | A | 0/1 | 0.34 | 9.1 | A | 1/2 |
| NH Route 9 WB LT | 0.23 | 29.4 | C | 1/3 | 0.28 | 28.9 | C | 1/2 | 0.24 | 30.5 | C | 1/2 | 0.26 | 29.7 | C | 1/2 | 0.27 | 30.9 | C | 1/2 |
| NH Route 9 WB TH/RT | 0.48 | 20.8 | C | 5/8 | 0.55 | 21.5 | C | 5/7 | 0.55 | 21.5 | C | 6/8 | 0.53 | 20.8 | C | 6/8 | 0.65 | 25.0 | C | 7/9 |
| **Overall** | -- | **20.7** | **C** | -- | -- | **20.3** | **C** | -- | -- | **22.3** | **C** | -- | -- | **22.0** | **C** | -- | -- | **23.7** | **C** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.63 | 31.3 | C | 7/12 | 0.71 | 32.1 | C | 7/11 | 0.84 | 41.4 | D | 9/16 | 0.79 | 38.3 | D | 8/14 | 0.94 | 59.1 | E | 10/18 |
| D'Amante Drive NB LT/TH | 0.64 | 31.4 | C | 7/12 | 0.70 | 31.8 | C | 7/11 | 0.85 | 42.4 | D | 9/16 | 0.78 | 37.5 | D | 8/13 | 0.95 | 61.4 | E | 10/18 |
| D'Amante Drive NB RT | 0.09 | 16.0 | B | 0/1 | 0.09 | 13.9 | B | 0/1 | 0.09 | 14.1 | B | 0/1 | 0.10 | 15.1 | B | 0/1 | 0.10 | 15.3 | B | 0/1 |
| Old Loudon Road SB LT/TH | 0.61 | 47.1 | D | 2/4 | 0.86 | >80.0 | F | 2/5 | 0.79 | 66.8 | E | 2/4 | 0.78 | 61.2 | E | 3/5 | 0.73 | 55.0 | D | 2/5 |
| Old Loudon Road SB RT | 0.07 | 27.0 | C | 0/2 | 0.07 | 25.5 | C | 0/2 | 0.07 | 26.7 | C | 0/2 | 0.10 | 26.0 | C | 1/2 | 0.10 | 26.9 | C | 1/2 |
| NH Route 9 EB LT | 1.10 | >80.0 | F | 3/8 | 1.17 | >80.0 | F | 3/7 | 1.21 | >80.0 | F | 3/7 | 1.31 | >80.0 | F | 4/8 | 1.34 | >80.0 | F | 4/8 |
| NH Route 9 EB TH | 0.62 | 28.3 | C | 8/11 | 0.68 | 27.4 | C | 7/10 | 0.75 | 30.2 | C | 8/11 | 0.74 | 30.0 | C | 8/11 | 0.81 | 33.1 | C | 9/12 |
| NH Route 9 EB RT | 0.30 | 9.7 | A | 1/3 | 0.32 | 10.1 | B | 1/3 | 0.50 | 11.5 | B | 3/7 | 0.39 | 11.1 | B | 2/4 | 0.57 | 13.1 | B | 5/9 |
| NH Route 9 WB LT | 1.02 | >80.0 | F | 3/6 | 0.92 | 76.9 | E | 2/5 | 0.99 | >80.0 | F | 2/5 | 1.06 | >80.0 | F | 3/5 | 1.12 | >80.0 | F | 3/5 |
| NH Route 9 WB TH/RT | 0.67 | 45.6 | C | 9/12 | 0.65 | 24.8 | C | 7/10 | 0.75 | 28.1 | C | 9/12 | 0.72 | 27.3 | C | 8/11 | 0.81 | 31.0 | C | 10/13 |
| **Overall** | -- | **35.3** | **D** | -- | -- | **34.1** | **C** | -- | -- | **37.3** | **D** | -- | -- | **40.0** | **D** | -- | -- | **46.1** | **D** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at NH Route 132 and Canterbury Road*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.34 | 39.3 | D | 1/3 | 0.34 | 40.3 | D | 1/3 | 0.31 | 44.2 | D | 1/2 | 0.32 | 41.8 | D | 1/3 | 0.34 | 44.9 | D | 1/3 |
| NH Route 9 EB TH/RT | 0.37 | 21.3 | C | 3/6 | 0.37 | 21.1 | C | 3/7 | 0.40 | 20.0 | C | 4/8 | 0.37 | 20.5 | C | 4/7 | 0.43 | 20.8 | C | 5/9 |
| NH Route 9 WB LT | 0.12 | 41.3 | D | 0/1 | 0.12 | 42.3 | D | 0/1 | 0.22 | 47.2 | D | 1/1 | 0.14 | 45.9 | D | 0/1 | 0.21 | 48.1 | D | 1/1 |
| NH Route 9 WB TH/RT | 0.60 | 26.6 | C | 6/10 | 0.61 | 26.6 | C | 7/10 | 0.64 | 25.7 | C | 9/13 | 0.63 | 27.6 | C | 8/12 | 0.70 | 27.7 | C | 10/14 |
| Canterbury Road NB LT | 0.38 | 32.9 | C | 2/4 | 0.38 | 33.7 | C | 2/4 | 0.41 | 38.0 | D | 3/4 | 0.43 | 37.0 | D | 3/4 | 0.44 | 38.1 | D | 3/4 |
| Canterbury Road NB TH/RT | 0.46 | 33.8 | C | 3/4 | 0.47 | 34.6 | C | 3/4 | 0.52 | 39.5 | D | 3/4 | 0.53 | 38.3 | D | 4/5 | 0.55 | 39.9 | D | 4/5 |
| NH Route 132 SB LT | 0.37 | 26.5 | C | 3/6 | 0.38 | 27.5 | C | 3/7 | 0.49 | 33.2 | C | 4/7 | 0.46 | 31.9 | C | 4/7 | 0.54 | 24.7 | C | 5/8 |
| NH Route 132 SB TH/RT | 0.63 | 30.7 | C | 6/12 | 0.65 | 32.4 | C | 6/12 | 0.73 | 40.7 | D | 7/12 | 0.78 | 42.8 | D | 8/15 | 0.81 | 47.4 | D | 8/15 |
| **Overall** | -- | **27.3** | **C** | -- | -- | **27.7** | **C** | -- | -- | **29.0** | **C** | -- | -- | **30.6** | **C** | -- | -- | **31.2** | **C** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.51 | 47.5 | D | 3/5 | 0.51 | 47.4 | D | 3/5 | 0.47 | 46.6 | D | 3/5 | 0.53 | 47.4 | D | 4/6 | 0.51 | 46.9 | D | 3/5 |
| NH Route 9 EB TH/RT | 0.73 | 29.3 | C | 11/16 | 0.76 | 30.4 | C | 11/17 | 0.93 | 44.4 | D | 19/23 | 0.88 | 37.8 | D | 17/21 | 1.01 | 61.0 | E | 22/26 |
| NH Route 9 WB LT | 0.29 | 53.4 | D | 1/2 | 0.29 | 53.4 | D | 1/2 | 0.30 | 50.5 | D | 1/2 | 0.26 | 50.9 | D | 1/2 | 0.33 | 51.0 | D | 1/3 |
| NH Route 9 WB TH/RT | 0.88 | 42.6 | D | 14/20 | 0.91 | 46.7 | D | 15/22 | 1.11 | >80.0 | F | 21/28 | 1.03 | 73.5 | E | 19/25 | 1.21 | >80.0 | F | 25/32 |
| Canterbury Road NB LT | 0.36 | 39.3 | D | 3/6 | 0.37 | 39.4 | D | 3/6 | 0.36 | 38.5 | D | 3/6 | 0.40 | 39.4 | D | 4/6 | 0.40 | 39.2 | D | 3/6 |
| Canterbury Road NB TH/RT | 0.89 | 68.1 | E | 8/15 | 0.90 | 69.0 | E | 8/15 | 0.89 | 66.9 | E | 8/15 | 0.99 | >80.0 | F | 10/17 | 1.00 | >80.0 | F | 10/18 |
| NH Route 132 SB LT | 0.95 | >80.0 | F | 9/16 | 0.98 | >80.0 | F | 9/17 | 1.05 | >80.0 | F | 11/19 | 1.07 | >80.0 | F | 11/19 | 1.16 | >80.0 | F | 13/21 |
| NH Route 132 SB TH/RT | 0.57 | 42.7 | D | 5/9 | 0.58 | 42.8 | D | 5/9 | 0.57 | 41.8 | D | 5/9 | 0.64 | 44.7 | D | 6/10 | 0.64 | 44.5 | D | 6/10 |
| **Overall** | -- | **44.9** | **D** | -- | -- | **47.1** | **D** | -- | -- | **71.1** | **E** | -- | -- | **63.3** | **E** | -- | -- | **>80.0** | **F** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.39 | 46.0 | D | 2/4 | 0.39 | 46.1 | D | 2/4 | 0.34 | 45.3 | D | 2/3 | 0.42 | 46.6 | D | 2/4 | 0.37 | 45.8 | D | 2/3 |
| NH Route 9 EB TH/RT | 0.79 | 33.2 | C | 13/17 | 0.83 | 34.8 | C | 14/19 | 1.10 | >80.0 | F | 20/27 | 0.92 | 43.3 | D | 16/22 | 1.19 | >80.0 | F | 23/30 |
| NH Route 9 WB LT | 0.28 | 47.8 | D | 1/2 | 0.28 | 47.9 | D | 1/2 | 0.32 | 45.3 | D | 1/3 | 0.31 | 48.5 | D | 1/2 | 0.33 | 45.8 | D | 2/3 |
| NH Route 9 WB TH/RT | 1.12 | >80.0 | F | 22/29 | 1.16 | >80.0 | F | 24/30 | 1.42 | >80.0 | F | 32/38 | 1.29 | >80.0 | F | 28/35 | 1.56 | >80.0 | F | 36/43 |
| Canterbury Road NB LT | 0.50 | 38.1 | D | 4/5 | 0.51 | 38.2 | D | 4/5 | 0.49 | 36.9 | D | 4/5 | 0.54 | 38.9 | D | 5/6 | 0.53 | 37.8 | D | 5/5 |
| Canterbury Road NB TH/RT | 0.70 | 44.7 | D | 6/7 | 0.70 | 45.0 | D | 6/7 | 0.70 | 44.0 | D | 6/7 | 0.76 | 48.1 | D | 7/7 | 0.77 | 47.8 | D | 7/8 |
| NH Route 132 SB LT | 0.83 | 54.4 | D | 8/14 | 0.85 | 57.2 | E | 8/15 | 1.00 | >80.0 | F | 10/18 | 0.96 | 78.7 | E | 9/17 | 1.10 | >80.0 | F | 12/21 |
| NH Route 132 SB TH/RT | 0.35 | 35.5 | D | 3/6 | 0.36 | 35.6 | D | 3/6 | 0.36 | 34.8 | C | 3/6 | 0.41 | 36.8 | D | 4/7 | 0.41 | 35.9 | D | 4/7 |
| **Overall** | -- | **63.5** | **E** | -- | -- | **70.6** | **E** | -- | -- | **>80.0** | **F** | -- | -- | **>80.0** | **F** | -- | -- | **>80.0** | **F** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at the Steeplegate Mall (Project site) driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | | | | | | | | | 0.62 | 23.1 | C | 3/5 | | | | | 0.65 | 25.1 | C | 3/5 |
| Steeplegate Mall driveway EB RT | | | | | | | | | 0.15 | 18.3 | B | 0/2 | | | | | 0.15 | 19.2 | B | 0/2 |
| NH Route 106 NB LT | | | | | | | | | 0.31 | 6.3 | A | 1/1 | | | | | 0.35 | 7.3 | A | 1/1 |
| NH Route 106 NB TH | | | | | | | | | 0.32 | 4.1 | A | 2/3 | | | | | 0.36 | 4.1 | A | 2/3 |
| NH Route 106 SB TH | | | | | | | | | 0.72 | 14.1 | B | 6/10 | | | | | 0.78 | 15.7 | B | 8/12 |
| NH Route 106 SB RT | | | | | | | | | 0.13 | 7.8 | A | 0/1 | | | | | 0.13 | 7.6 | A | 0/1 |
| **Overall** | | | | | | | | | -- | **12.5** | **B** | -- | | | | | -- | **13.3** | **B** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | | | | | | | | | 0.60 | 27.1 | C | 3/5 | | | | | 0.60 | 27.1 | C | 3/5 |
| Steeplegate Mall driveway EB RT | *See Unsignalized Intersection Level-of-Service and Vehicle Queue Summary (Table 14)* | | | | | | | | 0.08 | 22.0 | C | 0/2 | *See Unsignalized Intersection Level-of-Service and Vehicle Queue Summary (Table 14)* | | | | 0.08 | 22.0 | C | 0/2 |
| NH Route 106 NB LT | | | | | | | | | 0.43 | 8.0 | A | 1/1 | | | | | 0.50 | 10.3 | B | 1/2 |
| NH Route 106 NB TH | | | | | | | | | 0.98 | 27.3 | C | 14/28 | | | | | 1.03 | 42.1 | D | 23/30 |
| NH Route 106 SB TH | | | | | | | | | 0.76 | 14.9 | B | 8/14 | | | | | 0.84 | 18.5 | B | 10/19 |
| NH Route 106 SB RT | | | | | | | | | 0.10 | 7.3 | A | 0/1 | | | | | 0.10 | 7.3 | A | 0/1 |
| **Overall** | | | | | | | | | -- | **21.2** | **C** | -- | | | | | -- | **29.6** | **C** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | | | | | | | | | 0.76 | 33.1 | C | 4/8 | | | | | 0.79 | 36.3 | D | 4/8 |
| Steeplegate Mall driveway EB RT | | | | | | | | | 0.08 | 14.8 | B | 0/2 | | | | | 0.10 | 15.6 | B | 0/2 |
| NH Route 106 NB LT | | | | | | | | | 0.50 | 8.9 | A | 1/2 | | | | | 0.54 | 10.9 | B | 1/3 |
| NH Route 106 NB TH | | | | | | | | | 0.75 | 7.8 | A | 7/13 | | | | | 0.81 | 9.7 | A | 8/15 |
| NH Route 106 SB TH | | | | | | | | | 0.79 | 15.9 | B | 9/18 | | | | | 0.84 | 18.6 | B | 9/18 |
| NH Route 106 SB RT | | | | | | | | | 0.14 | 7.6 | A | 0/1 | | | | | 0.14 | 7.4 | A | 0/1 |
| **Overall** | | | | | | | | | -- | **13.0** | **B** | -- | | | | | -- | **14.9** | **B** | -- |
| ***NH Route 106 at D'Amante Drive*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.31 | 15.7 | B | 1/2 | 0.31 | 15.5 | B | 1/3 | 0.35 | 15.7 | B | 2/4 | 0.35 | 16.9 | B | 1/3 | 0.39 | 17.1 | B | 2/4 |
| D'Amante Drive EB RT | 0.04 | 14.4 | B | 0/1 | 0.05 | 14.2 | B | 0/1 | 0.08 | 14.2 | B | 0/1 | 0.06 | 15.3 | B | 0/1 | 0.08 | 15.3 | B | 0/1 |
| NH Route 106 NB LT | 0.12 | 3.7 | A | 0/1 | 0.14 | 3.8 | A | 1/1 | 0.29 | 5.6 | A | 1/2 | 0.17 | 3.9 | A | 1/1 | 0.34 | 6.0 | A | 1/2 |
| NH Route 106 NB TH | 0.30 | 4.1 | A | 2/3 | 0.31 | 4.2 | A | 2/3 | 0.35 | 5.5 | A | 2/4 | 0.33 | 4.3 | A | 2/4 | 0.38 | 5.7 | A | 2/5 |
| NH Route 106 SB TH | 0.52 | 5.3 | A | 3/7 | 0.53 | 5.4 | A | 3/7 | 0.61 | 7.7 | A | 4/9 | 0.58 | 5.8 | A | 4/8 | 0.66 | 8.4 | A | 5/11 |
| NH Route 106 SB RT | 0.07 | 3.4 | A | 0/1 | 0.08 | 3.5 | A | 0/1 | 0.11 | 4.6 | A | 0/1 | 0.08 | 3.5 | A | 0/1 | 0.12 | 4.6 | A | 0/1 |
| **Overall** | -- | **6.1** | **A** | -- | -- | **6.2** | **A** | -- | -- | **8.0** | **A** | -- | -- | **6.6** | **A** | -- | -- | **8.5** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.61 | 24.3 | C | 4/7 | 0.62 | 25.1 | C | 4/7 | 0.75 | 27.6 | C | 7/11 | 0.65 | 25.3 | C | 5/8 | 0.77 | 28.6 | C | 8/12 |
| D'Amante Drive EB RT | 0.05 | 18.9 | B | 0/1 | 0.06 | 19.1 | B | 0/1 | 0.08 | 17.3 | B | 0/2 | 0.06 | 18.6 | B | 0/1 | 0.08 | 17.1 | B | 0/2 |
| NH Route 106 NB LT | 0.39 | 7.1 | A | 2/4 | 0.45 | 7.8 | A | 2/4 | 0.66 | 16.4 | B | 3/8 | 0.58 | 10.6 | B | 2/6 | 0.87 | 38.5 | D | 4/10 |
| NH Route 106 NB TH | 0.81 | 14.4 | B | 11/23 | 0.84 | 15.9 | B | 12/24 | 0.97 | 37.3 | D | 18/30 | 0.94 | 27.8 | C | 15/29 | 1.09 | 70.9 | E | 25/34 |
| NH Route 106 SB TH | 0.48 | 7.4 | A | 4/9 | 0.50 | 7.7 | A | 5/10 | 0.60 | 11.7 | B | 7/13 | 0.56 | 8.9 | A | 6/12 | 0.66 | 13.6 | B | 9/15 |
| NH Route 106 SB RT | 0.11 | 5.4 | A | 0/1 | 0.12 | 5.5 | A | 0/1 | 0.16 | 7.9 | A | 0/2 | 0.13 | 6.0 | A | 0/1 | 0.17 | 8.4 | A | 0/2 |
| **Overall** | -- | **12.8** | **B** | -- | -- | **13.7** | **B** | -- | -- | **24.5** | **C** | -- | -- | **19.3** | **B** | -- | -- | **40.0** | **D** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.53 | 15.2 | B | 3/5 | 0.55 | 15.9 | B | 4/8 | 0.73 | 23.2 | C | 8/12 | 0.60 | 18.2 | B | 5/9 | 0.80 | 29.3 | C | 9/13 |
| D'Amante Drive EB RT | 0.09 | 12.1 | B | 0/2 | 0.10 | 12.6 | B | 0/2 | 0.15 | 14.7 | B | 0/2 | 0.11 | 13.7 | B | 0/2 | 0.16 | 16.7 | B | 0/2 |
| NH Route 106 NB LT | 0.44 | 9.0 | A | 2/4 | 0.49 | 9.7 | A | 2/5 | 0.77 | 23.8 | C | 4/10 | 0.58 | 11.9 | B | 2/6 | 0.86 | 35.9 | D | 5/11 |
| NH Route 106 NB TH | 0.66 | 11.3 | B | 5/12 | 0.69 | 12.1 | B | 6/13 | 0.77 | 17.3 | B | 11/18 | 0.74 | 14.2 | B | 8/17 | 0.81 | 19.7 | B | 14/23 |
| NH Route 106 SB TH | 0.43 | 8.5 | A | 3/7 | 0.45 | 8.8 | A | 3/8 | 0.53 | 11.7 | B | 6/10 | 0.49 | 9.6 | A | 4/9 | 0.55 | 12.5 | B | 7/11 |
| NH Route 106 SB RT | 0.16 | 7.1 | A | 0/2 | 0.17 | 7.2 | A | 0/2 | 0.25 | 9.4 | A | 0/2 | 0.19 | 7.7 | A | 0/2 | 0.26 | 9.8 | A | 0/2 |
| **Overall** | -- | **10.6** | **B** | -- | -- | **11.2** | **B** | -- | -- | **16.5** | **B** | -- | -- | **12.8** | **B** | -- | -- | **19.9** | **B** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at Pembroke Road and North Pembroke Road*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 0.31 | 45.2 | D | 1/2 | 0.34 | 45.5 | D | 1/2 | 0.34 | 43.8 | D | 1/3 | 0.36 | 45.7 | D | 1/3 | 0.37 | 44.2 | D | 2/3 |
| Pembroke Road EB TH/RT | 0.15 | 37.1 | D | 1/2 | 0.16 | 37.2 | D | 1/2 | 0.16 | 37.0 | D | 1/2 | 0.17 | 36.8 | D | 1/2 | 0.17 | 36.6 | D | 1/2 |
| North Pembroke Road WB LT | 0.41 | 44.2 | D | 2/3 | 0.41 | 44.2 | D | 2/3 | 0.40 | 44.1 | D | 2/3 | 0.45 | 44.6 | D | 2/3 | 0.45 | 44.6 | D | 2/3 |
| North Pembroke Road WB TH/RT | 0.50 | 39.1 | D | 3/4 | 0.51 | 39.4 | D | 3/5 | 0.57 | 42.5 | D | 3/5 | 0.55 | 40.1 | D | 3/5 | 0.61 | 43.3 | D | 4/5 |
| NH Route 106 NB LT | 0.27 | 15.9 | B | 1/2 | 0.31 | 17.4 | B | 1/2 | 0.32 | 21.0 | C | 1/2 | 0.34 | 21.0 | C | 1/2 | 0.35 | 21.2 | C | 1/2 |
| NH Route 106 NB TH | 0.45 | 14.1 | B | 7/11 | 0.47 | 14.2 | B | 8/11 | 0.55 | 15.5 | B | 10/13 | 0.52 | 15.3 | B | 9/13 | 0.60 | 17.2 | B | 11/15 |
| NH Route 106 NB RT | 0.02 | 10.5 | B | 0/0 | 0.02 | 10.4 | B | 0/0 | 0.02 | 10.6 | B | 0/0 | 0.02 | 10.8 | B | 0/0 | 0.02 | 11.0 | B | 0/0 |
| NH Route 106 SB LT | 0.09 | 9.4 | A | 1/1 | 0.09 | 9.5 | A | 1/1 | 0.11 | 10.0 | A | 1/1 | 0.11 | 10.2 | B | 1/1 | 0.14 | 10.9 | B | 1/1 |
| NH Route 106 SB TH | 0.85 | 27.3 | C | 18/32 | 0.88 | 30.1 | C | 20/34 | 0.98 | 46.6 | D | 27/40 | 0.98 | 48.7 | D | 27/39 | 1.09 | >80.0 | F | 32/45 |
| NH Route 106 SB RT | 0.08 | 12.0 | B | 0/1 | 0.08 | 12.0 | B | 0/1 | 0.09 | 12.0 | B | 0/2 | 0.09 | 12.5 | B | 0/2 | 0.10 | 12.6 | B | 0/2 |
| **Overall** | -- | **24.7** | **C** | -- | -- | **26.0** | **C** | -- | -- | **33.6** | **C** | -- | -- | **34.5** | **C** | -- | -- | **48.9** | **D** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 1.09 | >80.0 | F | 7/13 | 1.13 | >80.0 | F | 7/13 | 1.17 | >80.0 | F | 8/14 | 1.26 | >80.0 | F | 9/15 | 1.30 | >80.0 | F | 9/15 |
| Pembroke Road EB TH/RT | 0.39 | 34.5 | C | 3/6 | 0.41 | 34.6 | C | 3/6 | 0.41 | 34.7 | C | 3/6 | 0.45 | 35.1 | D | 4/6 | 0.45 | 35.2 | D | 4/6 |
| North Pembroke Road WB LT | 0.28 | 45.1 | D | 1/2 | 0.28 | 45.2 | D | 1/2 | 0.28 | 45.3 | D | 1/2 | 0.32 | 46.1 | D | 1/2 | 0.32 | 46.1 | D | 1/2 |
| North Pembroke Road WB TH/RT | 0.30 | 37.8 | D | 2/3 | 0.31 | 37.8 | D | 2/3 | 0.31 | 37.9 | D | 2/3 | 0.35 | 38.2 | D | 2/3 | 0.36 | 38.3 | D | 2/3 |
| NH Route 106 NB LT | 0.24 | 14.4 | B | 1/2 | 0.26 | 15.3 | B | 1/2 | 0.34 | 18.7 | B | 1/2 | 0.36 | 18.5 | B | 1/2 | 0.37 | 21.4 | C | 1/2 |
| NH Route 106 NB TH | 1.02 | 62.1 | E | 22/39 | 1.07 | 77.8 | E | 27/42 | 1.15 | >80.0 | F | 30/46 | 1.20 | >80.0 | F | 33/48 | 1.27 | >80.0 | F | 36/52 |
| NH Route 106 NB RT | 0.04 | 13.7 | B | 0/0 | 0.04 | 13.7 | B | 0/0 | 0.04 | 13.7 | B | 0/0 | 0.04 | 14.1 | B | 0/0 | 0.04 | 14.2 | B | 0/0 |
| NH Route 106 SB LT | 0.36 | 21.0 | C | 1/2 | 0.37 | 21.1 | C | 1/2 | 0.39 | 21.2 | C | 1/2 | 0.40 | 21.5 | C | 1/2 | 0.42 | 21.6 | C | 1/3 |
| NH Route 106 SB TH | 0.75 | 24.4 | C | 13/22 | 0.79 | 26.1 | C | 14/26 | 0.89 | 34.6 | C | 17/32 | 0.88 | 33.3 | C | 17/31 | 0.98 | 51.5 | D | 21/36 |
| NH Route 106 SB RT | 0.08 | 13.9 | B | 0/1 | 0.09 | 14.0 | B | 0/1 | 0.10 | 14.1 | B | 0/2 | 0.10 | 14.5 | B | 0/2 | 0.12 | 14.7 | B | 1/2 |
| **Overall** | -- | **48.7** | **D** | -- | -- | **56.4** | **E** | -- | -- | **69.6** | **E** | -- | -- | **>80.0** | **F** | -- | -- | **>80.0** | **F** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 0.58 | 39.7 | D | 3/6 | 0.66 | 43.7 | D | 4/6 | 0.83 | 63.7 | E | 5/8 | 0.76 | 53.7 | D | 4/7 | 0.90 | 77.2 | E | 5/9 |
| Pembroke Road EB TH/RT | 0.11 | 27.4 | C | 1/2 | 0.11 | 28.2 | C | 1/2 | 0.12 | 31.2 | C | 1/2 | 0.13 | 30.4 | C | 1/2 | 0.12 | 29.1 | C | 1/2 |
| North Pembroke Road WB LT | 0.14 | 42.6 | D | 0/1 | 0.14 | 43.7 | D | 0/1 | 0.15 | 47.1 | D | 0/1 | 0.16 | 46.3 | D | 1/1 | 0.17 | 47.4 | D | 1/1 |
| North Pembroke Road WB TH/RT | 0.19 | 35.0 | D | 1/3 | 0.19 | 36.1 | D | 1/3 | 0.20 | 39.1 | D | 1/3 | 0.22 | 38.4 | D | 1/3 | 0.19 | 36.7 | D | 1/3 |
| NH Route 106 NB LT | 0.13 | 12.1 | B | 1/1 | 0.16 | 12.7 | B | 1/1 | 0.21 | 15.7 | B | 1/1 | 0.19 | 14.1 | B | 1/1 | 0.25 | 20.4 | C | 1/1 |
| NH Route 106 NB TH | 0.77 | 23.1 | C | 12/20 | 0.80 | 24.7 | C | 14/22 | 0.89 | 31.9 | C | 18/31 | 0.85 | 27.7 | C | 16/28 | 1.03 | 62.8 | E | 21/35 |
| NH Route 106 NB RT | 0.01 | 12.2 | B | 0/0 | 0.01 | 12.1 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.9 | D | 0/0 | 0.01 | 13.2 | B | 0/0 |
| NH Route 106 SB LT | 0.19 | 13.1 | B | 1/1 | 0.22 | 14.1 | B | 1/1 | 0.31 | 18.7 | B | 1/2 | 0.27 | 16.5 | D | 1/2 | 0.33 | 20.7 | C | 1/2 |
| NH Route 106 SB TH | 0.70 | 19.7 | B | 11/18 | 0.73 | 20.6 | C | 12/20 | 0.83 | 25.1 | C | 16/29 | 0.79 | 24.1 | C | 14/25 | 0.98 | 48.4 | D | 19/33 |
| NH Route 106 SB RT | 0.07 | 11.8 | B | 0/1 | 0.08 | 11.8 | B | 0/1 | 0.10 | 11.5 | B | 0/2 | 0.09 | 12.3 | B | 0/1 | 0.11 | 13.8 | B | 0/2 |
| **Overall** | -- | **22.8** | **C** | -- | -- | **24.2** | **C** | -- | -- | **30.2** | **C** | -- | -- | **27.5** | **C** | -- | -- | **50.8** | **D** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at Regional Drive and Smokey Bear Boulevard*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Regional Drive EB LT | 0.39 | 19.4 | B | 2/3 | 0.40 | 19.4 | B | 2/3 | 0.45 | 19.5 | B | 2/4 | 0.43 | 19.2 | B | 2/3 | 0.48 | 19.3 | B | 2/4 |
| Regional Drive EB TH/RT | 0.45 | 19.7 | B | 2/4 | 0.45 | 19.6 | B | 2/4 | 0.45 | 19.2 | B | 2/4 | 0.49 | 19.5 | B | 3/4 | 0.48 | 19.1 | B | 3/4 |
| Smokey Bear Boulevard WB LT | 0.04 | 17.2 | B | 0/1 | 0.04 | 17.0 | B | 0/1 | 0.04 | 16.7 | B | 0/1 | 0.04 | 16.7 | B | 0/1 | 0.04 | 16.3 | B | 0/1 |
| Smokey Bear Boulevard WB TH/RT | 0.05 | 17.2 | B | 0/1 | 0.05 | 17.1 | B | 0/1 | 0.05 | 16.8 | B | 0/1 | 0.06 | 16.8 | B | 1/1 | 0.06 | 16.4 | B | 1/1 |
| NH Route 106 NB LT | 0.26 | 6.4 | A | 1/2 | 0.27 | 6.7 | A | 1/2 | 0.24 | 7.1 | A | 1/1 | 0.34 | 8.0 | A | 1/2 | 0.29 | 8.4 | A | 1/2 |
| NH Route 106 NB TH | 0.36 | 5.2 | A | 2/5 | 0.37 | 5.3 | A | 2/5 | 0.42 | 5.6 | A | 3/5 | 0.41 | 5.7 | A | 3/5 | 0.46 | 6.2 | A | 3/6 |
| NH Route 106 NB RT | 0.02 | 3.9 | A | 0/0 | 0.02 | 4.0 | A | 0/0 | 0.02 | 4.0 | A | 0/0 | 0.03 | 4.2 | A | 0/1 | 0.03 | 4.3 | A | 0/1 |
| NH Route 106 SB LT | 0.27 | 11.7 | B | 1/3 | 0.28 | 11.7 | B | 1/3 | 0.29 | 11.7 | B | 1/3 | 0.33 | 12.5 | B | 1/3 | 0.34 | 12.5 | B | 1/3 |
| NH Route 106 SB TH | 0.71 | 17.2 | B | 6/14 | 0.74 | 18.2 | B | 7/15 | 0.79 | 20.5 | C | 7/16 | 0.83 | 23.8 | C | 8/17 | 0.89 | 29.5 | C | 9/18 |
| NH Route 106 SB RT | 0.18 | 11.0 | B | 0/2 | 0.20 | 11.1 | B | 0/2 | 0.25 | 11.3 | B | 1/3 | 0.25 | 11.8 | B | 1/3 | 0.31 | 12.0 | B | 1/3 |
| **Overall** | -- | **12.7** | **B** | -- | -- | **13.1** | **B** | -- | -- | **13.9** | **B** | -- | -- | **15.0** | **B** | -- | -- | **16.8** | **B** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Regional Drive EB LT | 0.96 | 53.7 | D | 6/11 | 1.01 | 67.8 | E | 7/12 | 1.08 | >80.0 | F | 8/13 | 1.15 | >80.0 | F | 8/13 | 1.25 | >80.0 | F | 9/14 |
| Regional Drive EB TH/RT | 0.09 | 14.0 | B | 0/1 | 0.09 | 14.2 | B | 0/1 | 0.09 | 14.4 | B | 0/1 | 0.10 | 14.9 | B | 0/2 | 0.10 | 15.8 | B | 0/2 |
| Smokey Bear Boulevard WB LT | 0.04 | 13.7 | B | 0/1 | 0.04 | 13.9 | B | 0/1 | 0.04 | 14.1 | B | 0/1 | 0.04 | 14.6 | B | 0/1 | 0.05 | 15.5 | B | 0/1 |
| Smokey Bear Boulevard WB TH/RT | 0.10 | 14.0 | B | 1/2 | 0.10 | 14.2 | B | 1/2 | 0.10 | 14.4 | B | 1/2 | 0.11 | 14.9 | B | 1/2 | 0.11 | 15.9 | B | 1/2 |
| NH Route 106 NB LT | 0.19 | 8.9 | A | 1/1 | 0.20 | 9.1 | A | 1/1 | 0.19 | 9.8 | A | 1/1 | 0.23 | 9.9 | A | 1/1 | 0.22 | 10.5 | B | 1/1 |
| NH Route 106 NB TH | 0.61 | 10.1 | B | 5/9 | 0.64 | 10.5 | B | 6/9 | 0.68 | 11.2 | B | 6/10 | 0.69 | 11.4 | B | 7/11 | 0.71 | 11.7 | B | 7/12 |
| NH Route 106 NB RT | 0.00 | 6.0 | A | 0/0 | 0.00 | 5.9 | A | 0/0 | 0.00 | 5.9 | A | 0/0 | 0.00 | 5.8 | A | 0/0 | 0.00 | 5.5 | A | 0/0 |
| NH Route 106 SB LT | 0.03 | 11.5 | B | 0/1 | 0.03 | 11.4 | B | 0/1 | 0.03 | 11.3 | B | 0/1 | 0.04 | 11.2 | B | 0/1 | 0.04 | 10.8 | B | 0/1 |
| NH Route 106 SB TH | 0.82 | 24.0 | C | 8/14 | 0.83 | 25.0 | C | 8/15 | 0.90 | 31.8 | C | 9/17 | 0.89 | 29.9 | C | 9/17 | 0.92 | 33.0 | C | 11/19 |
| NH Route 106 SB RT | 0.18 | 12.4 | B | 0/2 | 0.20 | 12.3 | B | 1/2 | 0.26 | 12.5 | B | 1/3 | 0.25 | 12.4 | B | 1/3 | 0.29 | 12.3 | B | 1/3 |
| **Overall** | -- | **22.5** | **C** | -- | -- | **25.5** | **C** | -- | -- | **31.1** | **C** | -- | -- | **35.7** | **D** | -- | -- | **44.4** | **D** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Regional Drive EB LT | 0.63 | 19.6 | B | 3/6 | 0.65 | 19.9 | B | 3/7 | 0.75 | 23.9 | C | 3/9 | 0.71 | 22.0 | C | 3/8 | 0.83 | 29.8 | C | 4/10 |
| Regional Drive EB TH/RT | 0.04 | 13.6 | B | 0/1 | 0.04 | 13.3 | B | 0/1 | 0.04 | 13.1 | B | 0/1 | 0.04 | 13.1 | B | 0/1 | 0.04 | 13.4 | B | 0/1 |
| Smokey Bear Boulevard WB LT | 0.00 | 13.4 | B | 0/0 | 0.00 | 13.1 | B | 0/0 | 0.00 | 12.9 | B | 0/0 | 0.00 | 13.0 | B | 0/0 | 0.00 | 13.2 | B | 0/0 |
| Smokey Bear Boulevard WB TH/RT | 0.01 | 13.4 | B | 0/0 | 0.01 | 13.2 | B | 0/0 | 0.01 | 12.9 | B | 0/0 | 0.01 | 13.0 | B | 0/0 | 0.01 | 13.3 | B | 0/0 |
| NH Route 106 NB LT | 0.09 | 7.6 | A | 0/1 | 0.10 | 8.2 | A | 0/1 | 0.10 | 9.3 | A | 0/1 | 0.13 | 9.0 | A | 0/1 | 0.12 | 10.1 | B | 0/1 |
| NH Route 106 NB TH | 0.46 | 8.1 | A | 4/6 | 0.50 | 8.6 | A | 4/7 | 0.59 | 9.8 | A | 5/8 | 0.55 | 9.3 | A | 5/7 | 0.63 | 10.4 | B | 6/9 |
| NH Route 106 NB RT | 0.00 | 5.8 | A | 0/0 | 0.00 | 6.0 | A | 0/0 | 0.00 | 6.1 | A | 0/0 | 0.00 | 6.1 | A | 0/0 | 0.00 | 6.0 | A | 0/0 |
| NH Route 106 SB LT | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 |
| NH Route 106 SB TH | 0.70 | 17.1 | B | 4/12 | 0.75 | 19.2 | B | 4/12 | 0.88 | 28.0 | C | 5/15 | 0.83 | 24.0 | C | 5/14 | 0.94 | 36.0 | D | 6/17 |
| NH Route 106 SB RT | 0.15 | 11.0 | B | 0/2 | 0.16 | 11.4 | B | 0/2 | 0.24 | 11.9 | B | 1/2 | 0.20 | 11.7 | B | 0/2 | 0.28 | 12.0 | B | 1/3 |
| **Overall** | -- | **13.6** | **B** | -- | -- | **14.6** | **B** | -- | -- | **18.5** | **B** | -- | -- | **16.8** | **B** | -- | -- | **22.4** | **C** | -- |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2024 Existing | | | | 2025 No-Build | | | | 2025 Opening Year | | | | 2035 No-Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***D'Amante Drive at the West Steeplegate Mall (West Project site) driveway and the Shaw's driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.03 | 14.0 | B | 0/0 | 0.03 | 14.2 | B | 0/0 | 0.03 | 17.0 | B | 0/1 | 0.03 | 14.3 | B | 0/0 | 0.03 | 17.1 | B | 0/1 |
| Steeplegate Mall driveway WB LT/TH | 0.00 | 0.0 | A | 0/0 | 0.00 | 0.0 | A | 0/0 | 0.26 | 18.2 | B | 1/2 | 0.00 | 0.0 | A | 0/0 | 0.25 | 18.3 | B | 1/1 |
| Steeplegate Mall driveway WB RT | 0.00 | 11.5 | B | 0/0 | 0.00 | 11.7 | B | 0/0 | 0.03 | 8.9 | A | 0/1 | 0.00 | 11.7 | B | 0/0 | 0.03 | 9.0 | A | 0/1 |
| D'Amante Drive NB LT | 0.06 | 16.3 | B | 0/1 | 0.06 | 16.4 | B | 0/1 | 0.07 | 19.9 | B | 0/1 | 0.06 | 16.5 | B | 0/1 | 0.07 | 20.1 | C | 0/1 |
| D'Amante Drive NB TH/RT | 0.14 | 5.8 | A | 1/2 | 0.15 | 5.8 | A | 1/2 | 0.23 | 10.1 | B | 1/2 | 0.17 | 5.9 | A | 1/2 | 0.24 | 10.2 | B | 1/2 |
| D'Amante Drive SB LT | 0.07 | 16.1 | B | 0/1 | 0.07 | 16.3 | B | 0/1 | 0.03 | 9.4 | A | 0/1 | 0.07 | 16.4 | B | 0/1 | 0.03 | 9.4 | A | 0/1 |
| D'Amante Drive SB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.10 | 13.3 | B | 1/1 | -- | -- | -- | -- | 0.10 | 13.5 | B | 1/1 |
| D'Amante Drive SB TH/RT | 0.14 | 5.8 | A | 1/2 | 0.16 | 5.8 | A | 1/2 | -- | -- | -- | -- | 0.18 | 5.8 | A | 1/2 | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.15 | 5.4 | A | 1/2 | -- | -- | -- | -- | 0.17 | 5.4 | A | 1/2 |
| **Overall** | **--** | **7.6** | **A** | **--** | **--** | **7.6** | **A** | **--** | **--** | **9.9** | **A** | **--** | **--** | **7.6** | **A** | **--** | **--** | **9.9** | **A** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.31 | 31.9 | C | 1/2 | 0.31 | 31.9 | C | 1/2 | 0.06 | 28.0 | C | 0/1 | 0.31 | 31.9 | C | 1/2 | 0.06 | 29.8 | C | 0/1 |
| Steeplegate Mall driveway WB LT/TH | 0.10 | 30.7 | C | 1/1 | 0.10 | 30.7 | C | 1/1 | 0.46 | 31.6 | C | 2/4 | 0.10 | 30.7 | C | 1/1 | 0.34 | 32.2 | C | 1/3 |
| Steeplegate Mall driveway WB RT | 0.03 | 20.5 | C | 0/0 | 0.03 | 20.6 | C | 0/0 | 0.05 | 18.8 | B | 0/1 | 0.03 | 20.7 | C | 0/0 | 0.05 | 20.2 | C | 0/1 |
| D'Amante Drive NB LT | 0.29 | 38.4 | D | 1/2 | 0.29 | 38.8 | D | 1/2 | 0.29 | 38.7 | D | 1/2 | 0.29 | 39.9 | D | 1/2 | 0.29 | 39.6 | D | 1/2 |
| D'Amante Drive NB TH/RT | 0.22 | 6.0 | A | 2/2 | 0.23 | 6.0 | A | 2/3 | 0.26 | 11.7 | B | 2/6 | 0.26 | 6.1 | A | 2/3 | 0.27 | 10.8 | B | 2/6 |
| D'Amante Drive SB LT | 0.09 | 29.0 | C | 1/1 | 0.09 | 29.2 | C | 1/1 | 0.05 | 32.0 | C | 0/1 | 0.09 | 29.3 | C | 1/1 | 0.03 | 8.2 | A | 0/1 |
| D'Amante Drive SB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | 29.8 | C | 1/2 | -- | -- | -- | -- | 0.20 | 29.6 | C | 1/2 |
| D'Amante Drive SB TH/RT | 0.20 | 6.6 | A | 2/4 | 0.21 | 6.6 | A | 2/4 | -- | -- | -- | -- | 0.24 | 6.8 | A | 3/4 | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.25 | 8.2 | A | 3/5 | -- | -- | -- | -- | 0.27 | 7.3 | A | 3/5 |
| **Overall** | **--** | **12.8** | **B** | **--** | **--** | **12.8** | **B** | **--** | **--** | **16.8** | **B** | **--** | **--** | **12.8** | **B** | **--** | **--** | **14.7** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.37 | 36.6 | D | 2/2 | 0.37 | 36.6 | D | 2/2 | 0.07 | 33.1 | C | 0/1 | 0.37 | 36.6 | D | 2/2 | 0.07 | 33.1 | C | 0/1 |
| Steeplegate Mall driveway WB LT/TH | 0.10 | 34.9 | C | 1/1 | 0.10 | 34.9 | C | 1/1 | 0.46 | 37.0 | D | 2/4 | 0.10 | 34.9 | C | 1/1 | 0.46 | 37.0 | D | 2/4 |
| Steeplegate Mall driveway WB RT | 0.02 | 24.6 | C | 0/0 | 0.02 | 24.7 | C | 0/0 | 0.10 | 18.4 | B | 1/2 | 0.02 | 24.9 | C | 0/0 | 0.10 | 18.2 | B | 1/2 |
| D'Amante Drive NB LT | 0.34 | 40.5 | D | 1/3 | 0.34 | 40.5 | D | 1/3 | 0.34 | 40.9 | D | 1/3 | 0.34 | 41.0 | D | 1/2 | 0.34 | 41.2 | D | 1/3 |
| D'Amante Drive NB TH/RT | 0.32 | 7.6 | A | 3/5 | 0.33 | 7.6 | A | 3/5 | 0.44 | 15.6 | B | 5/9 | 0.37 | 7.9 | A | 4/7 | 0.49 | 16.9 | B | 6/10 |
| D'Amante Drive SB LT | 0.26 | 35.6 | D | 1/1 | 0.27 | 35.9 | D | 1/1 | 0.05 | 20.9 | C | 0/1 | 0.30 | 36.4 | D | 1/1 | 0.05 | 22.5 | C | 0/1 |
| D'Amante Drive SB TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.56 | 33.5 | C | 2/3 | -- | -- | -- | -- | 0.60 | 34.7 | C | 2/3 |
| D'Amante Drive SB TH/RT | 0.26 | 6.8 | A | 3/5 | 0.27 | 6.8 | A | 3/5 | -- | -- | -- | -- | 0.30 | 7.0 | A | 4/6 | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | 7.9 | A | 4/7 | -- | -- | -- | -- | 0.35 | 8.2 | A | 4/7 |
| **Overall** | **--** | **13.3** | **B** | **--** | **--** | **13.1** | **B** | **--** | **--** | **17.7** | **B** | **--** | **--** | **13.1** | **B** | **--** | **--** | **18.1** | **B** | **--** |

See notes at end of table.

**Table 13 (Continued)**
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2022 Existing | | | | 2025 No Build | | | | 2025 Opening Year | | | | 2035 No Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***D'Amante Drive at Triangle Park Drive*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | -- | -- | -- | -- | -- | -- | -- | -- | 0.11 | 10.5 | B | 1/1 | -- | -- | -- | -- | 0.11 | 10.4 | B | 1/1 |
| D'Amante Drive EB TH/RT | 0.13 | 7.3 | A | 1/1 | 0.15 | 7.3 | A | 1/2 | 0.25 | 10.9 | B | 1/2 | 0.17 | 7.4 | A | 1/2 | 0.27 | 11.0 | B | 1/2 |
| D'Amante Drive WB LT | 0.23 | 15.9 | B | 1/1 | 0.23 | 16.1 | B | 1/1 | 0.22 | 15.2 | B | 1/1 | 0.26 | 16.5 | B | 1/1 | 0.25 | 15.4 | B | 1/1 |
| D'Amante Drive WB TH | 0.09 | 2.5 | A | 1/1 | 0.11 | 2.5 | A | 1/1 | -- | -- | -- | -- | 0.12 | 2.6 | A | 1/1 | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.26 | 5.1 | A | 1/2 | -- | -- | -- | -- | 0.28 | 5.1 | A | 1/2 |
| Triangle Park Drive NEB LT | 0.19 | 15.9 | B | 1/1 | 0.21 | 16.1 | B | 1/1 | -- | -- | -- | -- | 0.23 | 16.4 | B | 1/1 | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | 11.5 | B | 1/2 | -- | -- | -- | -- | 0.19 | 11.7 | B | 1/2 |
| Triangle Park Drive NEB RT | 0.03 | 7.9 | A | 0/1 | 0.03 | 8.0 | A | 0/1 | 0.03 | 4.8 | A | 0/1 | 0.03 | 8.2 | A | 0/1 | 0.03 | 4.9 | A | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.23 | 11.7 | B | 1/2 | -- | -- | -- | -- | 0.23 | 12.0 | B | 1/2 |
| Project site driveway SWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.02 | 10.1 | A | 0/0 | -- | -- | -- | -- | 0.02 | 10.0 | A | 0/0 |
| **Overall** | **--** | **8.1** | **A** | **--** | **--** | **8.1** | **A** | **--** | **--** | **9.1** | **A** | **--** | **--** | **8.1** | **A** | **--** | **--** | **9.2** | **A** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | -- | -- | -- | -- | -- | -- | -- | -- | 0.14 | 8.8 | A | 1/1 | -- | -- | -- | -- | 0.15 | 8.9 | A | 1/1 |
| D'Amante Drive EB TH/RT | 0.19 | 6.7 | A | 1/2 | 0.20 | 7.0 | A | 1/2 | 0.28 | 8.8 | A | 2/3 | 0.23 | 7.3 | A | 1/2 | 0.32 | 8.9 | A | 2/3 |
| D'Amante Drive WB LT | 0.31 | 33.5 | C | 1/3 | 0.31 | 33.4 | C | 1/3 | 0.31 | 33.4 | C | 1/3 | 0.33 | 33.4 | C | 2/3 | 0.34 | 33.7 | C | 2/3 |
| D'Amante Drive WB TH | 0.23 | 3.9 | A | 2/3 | 0.25 | 4.1 | A | 2/4 | -- | -- | -- | -- | 0.28 | 4.5 | A | 2/4 | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.34 | 6.7 | A | 3/6 | -- | -- | -- | -- | 0.35 | 7.3 | A | 4/7 |
| Triangle Park Drive NEB LT | 0.46 | 31.1 | C | 3/4 | 0.48 | 30.9 | C | 3/4 | -- | -- | -- | -- | 0.51 | 30.7 | C | 3/4 | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.61 | 31.5 | C | 3/5 | -- | -- | -- | -- | 0.64 | 31.6 | C | 3/5 |
| Triangle Park Drive NEB RT | 0.05 | 18.2 | B | 0/1 | 0.05 | 17.8 | B | 0/1 | 0.05 | 14.5 | B | 0/1 | 0.06 | 17.3 | B | 0/1 | 0.06 | 13.9 | B | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.65 | 32.7 | C | 3/5 | -- | -- | -- | -- | 0.65 | 32.2 | C | 3/5 |
| Project site driveway SWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.06 | 10.6 | B | 0/1 | -- | -- | -- | -- | 0.06 | 11.2 | B | 0/1 |
| **Overall** | **--** | **11.8** | **B** | **--** | **--** | **11.8** | **B** | **--** | **--** | **14.4** | **B** | **--** | **--** | **12.0** | **B** | **--** | **--** | **14.7** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 | 13.9 | B | 1/2 | -- | -- | -- | -- | 0.26 | 14.9 | B | 1/2 |
| D'Amante Drive EB TH/RT | 0.21 | 6.0 | A | 1/2 | 0.23 | 6.8 | A | 1/3 | 0.35 | 13.2 | B | 3/4 | 0.27 | 7.5 | A | 2/3 | 0.41 | 14.4 | B | 3/4 |
| D'Amante Drive WB LT | 0.43 | 38.3 | D | 2/4 | 0.43 | 38.2 | D | 2/4 | 0.43 | 38.2 | D | 2/4 | 0.46 | 38.2 | D | 2/4 | 0.46 | 38.2 | D | 2/4 |
| D'Amante Drive WB TH | 0.23 | 3.0 | A | 2/4 | 0.25 | 3.6 | A | 2/4 | -- | -- | -- | -- | 0.28 | 3.9 | A | 3/5 | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.43 | 10.7 | B | 6/9 | -- | -- | -- | -- | 0.48 | 12.0 | B | 6/9 |
| Triangle Park Drive NEB LT | 0.50 | 38.1 | D | 3/5 | 0.46 | 36.2 | D | 3/5 | -- | -- | -- | -- | 0.48 | 36.0 | D | 3/5 | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.48 | 26.7 | C | 3/5 | -- | -- | -- | -- | 0.50 | 26.0 | C | 3/6 |
| Triangle Park Drive NEB RT | 0.03 | 22.7 | C | 0/1 | 0.03 | 21.5 | C | 0/1 | 0.03 | 12.9 | B | 0/1 | 0.04 | 20.8 | C | 0/1 | 0.04 | 12.0 | B | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 0.65 | 31.1 | C | 5/8 | -- | -- | -- | -- | 0.63 | 29.7 | C | 4/8 |
| Project site driveway SWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 0.07 | 14.7 | B | 0/2 | -- | -- | -- | -- | 0.07 | 15.7 | B | 0/2 |
| **Overall** | **--** | **11.9** | **B** | **--** | **--** | **12.1** | **B** | **--** | **--** | **17.2** | **B** | **--** | **--** | **12.4** | **B** | **--** | **--** | **17.7** | **B** | **--** |

[a]Volume-to-capacity ratio.
[b]Control (signal) delay per vehicle in seconds.
[c]Level of service.
[d]Queue length in vehicles.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; UT = U-turn movements; LT = left-turning movements; TH = through movements; RT = right-turning movements.

**Table 14**
**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Unsignalized Intersection/ Peak-Hour/Movement | 2024 Existing | | | | 2025 No Build | | | | 2025 Opening Year | | | | 2035 No Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Demand[a] | Delay[b] | LOS[c] | Queue 95th[d] | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th |
| ***NH Route 9 at Break O'Day Drive and Old Sheep Davis Road*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH/RT | 1 | 13.6 | B | 0 | | | | | | | | | | | | | | | | |
| Old Sheep Davis Road NWB LT/TH/RT | 0 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 1 | 8.1 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB TH/RT | 181 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB LT | 8 | 8.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB TH/RT | 350 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH/RT | 8 | 15.7 | C | 0 | | | | | | | | | | | | | | | | |
| Old Sheep Davis Road NWB LT/TH/RT | 1 | 10.4 | B | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 1 | 8.5 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB TH/RT | 624 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB LT | 4 | 10.9 | B | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB TH/RT | 509 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Break O' Day Drive SEB LT/TH/RT | 1 | 25.5 | D | 0 | | | | | | | | | | | | | | | | |
| Old Sheep Davis Road NWB LT/TH/RT | 0 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 EB TH/RT | 649 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB LT | 1 | 8.9 | A | 0 | | | | | | | | | | | | | | | | |
| NH Route 9 WB TH/RT | 674 | 0.0 | A | 0 | | | | | | | | | | | | | | | | |
| ***NH Route 9 at the Regal Concord (North Project site) driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway NWB LT | -- | -- | -- | -- | -- | -- | -- | -- | 3 | 19.4 | C | 0 | -- | -- | -- | -- | 3 | 20.3 | C | 0 |
| Project site driveway NWB LT/RT | 1 | 11.1 | B | 0 | 1 | 11.2 | B | 0 | -- | -- | -- | -- | 1 | 11.6 | B | 0 | -- | -- | -- | -- |
| Project site driveway NWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 10 | 10.1 | B | 0 | -- | -- | -- | -- | 10 | 10.2 | B | 0 |
| NH Route 9 EB TH/RT | 207 | 0.0 | A | 0 | 209 | 0.0 | A | 0 | 518 | 0.0 | A | 0 | 233 | 0.0 | A | 0 | 542 | 0.0 | A | 0 |
| NH Route 9 WB LT | 0 | 0.0 | A | 0 | 0 | 0.0 | A | 0 | 16 | 8.7 | A | 0 | 0 | 0.0 | A | 0 | 16 | 8.7 | A | 0 |
| NH Route 9 WB TH | 275 | 0.0 | A | 0 | 278 | 0.0 | A | 0 | 590 | 0.0 | A | 0 | 308 | 0.0 | A | 0 | 620 | 0.0 | A | 0 |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway NWB LT | -- | -- | -- | -- | -- | -- | -- | -- | 15 | 35.1 | E | 1 | -- | -- | -- | -- | 15 | 41.5 | E | 1 |
| Project site driveway NWB LT/RT | 7 | 17.9 | C | 0 | 7 | 18.4 | C | 0 | -- | -- | -- | -- | 7 | 20.6 | C | 0 | -- | -- | -- | -- |
| Project site driveway NWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 43 | 11.7 | B | 1 | -- | -- | -- | -- | 43 | 12.0 | B | 1 |
| NH Route 9 EB TH/RT | 599 | 0.0 | A | 0 | 614 | 0.0 | A | 0 | 802 | 0.0 | A | 0 | 677 | 0.0 | A | 0 | 865 | 0.0 | A | 0 |
| NH Route 9 WB LT | 1 | 0.0 | A | 0 | 1 | 0.0 | A | 0 | 41 | 9.8 | A | 0 | 1 | 9.0 | A | 0 | 41 | 10.1 | B | 0 |
| NH Route 9 WB TH | 572 | 0.0 | A | 0 | 587 | 0.0 | A | 0 | 755 | 0.0 | A | 0 | 650 | 0.0 | A | 0 | 818 | 0.0 | A | 0 |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway NWB LT | -- | -- | -- | -- | -- | -- | -- | -- | 16 | >50.0 | F | 1 | -- | -- | -- | -- | 16 | >50.0 | F | 1 |
| Project site driveway NWB LT/RT | 7 | 18.7 | C | 0 | 7 | 19.3 | C | 0 | -- | -- | -- | -- | 7 | 22.2 | C | 0 | -- | -- | -- | -- |
| Project site driveway NWB RT | -- | -- | -- | -- | -- | -- | -- | -- | 59 | 13.5 | B | 1 | -- | -- | -- | -- | 59 | 14.2 | B | 1 |
| NH Route 9 EB TH/RT | 796 | 0.0 | A | 0 | 817 | 0.0 | A | 0 | 996 | 0.0 | A | 0 | 900 | 0.0 | A | 0 | 1,079 | 0.0 | A | 0 |
| NH Route 9 WB LT | 10 | 9.6 | A | 0 | 10 | 9.7 | A | 0 | 62 | 11.2 | B | 1 | 10 | 10.1 | B | 0 | 62 | 11.8 | B | 1 |
| NH Route 9 WB TH | 761 | 0.0 | A | 0 | 780 | 0.0 | A | 0 | 1,002 | 0.0 | A | 0 | 865 | 0.0 | A | 0 | 1,087 | 0.0 | A | 0 |

*See Signalized Intersection Level-of-Service and Vehicle Queue Summary (Table 13)*

See notes at end of table.

**Table 14 (Continued)**
**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Unsignalized Intersection/ Peak-Hour/Movement | 2024 Existing | | | | 2025 No Build | | | | 2025 Opening Year | | | | 2035 No Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Demand[a] | Delay[b] | LOS[c] | Queue 95th[d] | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th |
| ***NH Route 9 at the Shaw's driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway NWB LT/RT | 43 | 12.0 | B | 1 | 43 | 12.3 | B | 1 | 43 | 14.2 | B | 1 | 43 | 12.8 | B | 1 | 43 | 15.0 | B | 1 |
| NH Route 9 EB TH/RT | 426 | 0.0 | A | 0 | 439 | 0.0 | A | 0 | 557 | 0.0 | A | 0 | 477 | 0.0 | A | 0 | 595 | 0.0 | A | 0 |
| NH Route 9 WB LT | 39 | 8.4 | A | 0 | 39 | 8.4 | A | 0 | 39 | 8.8 | A | 0 | 39 | 8.5 | A | 0 | 39 | 8.9 | A | 0 |
| NH Route 9 WB TH | 391 | 0.0 | A | 0 | 422 | 0.0 | A | 0 | 580 | 0.0 | A | 0 | 467 | 0.0 | A | 0 | 625 | 0.0 | A | 0 |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway NWB LT/RT | 66 | 13.9 | B | 1 | 66 | 14.3 | B | 1 | 60 | 15.9 | C | 1 | 66 | 15.2 | C | 1 | 60 | 17.0 | C | 1 |
| NH Route 9 EB TH/RT | 935 | 0.0 | A | 0 | 980 | 0.0 | A | 0 | 1,148 | 0.0 | A | 0 | 1,073 | 0.0 | A | 0 | 1,241 | 0.0 | A | 0 |
| NH Route 9 WB LT | 18 | 10.8 | B | 0 | 18 | 11.1 | B | 0 | 18 | 12.2 | B | 0 | 18 | 11.7 | B | 0 | 18 | 13.0 | B | 0 |
| NH Route 9 WB TH | 830 | 0.0 | A | 0 | 865 | 0.0 | A | 0 | 1,062 | 0.0 | A | 0 | 954 | 0.0 | A | 0 | 1,151 | 0.0 | A | 0 |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway NWB LT/RT | 61 | 19.2 | C | 1 | 61 | 20.3 | C | 1 | 56 | 30.6 | D | 2 | 61 | 24.0 | C | 1 | 56 | 39.3 | E | 2 |
| NH Route 9 EB TH/RT | 1,195 | 0.0 | A | 0 | 1,239 | 0.0 | A | 0 | 1,501 | 0.0 | A | 0 | 1,358 | 0.0 | A | 0 | 1,620 | 0.0 | A | 0 |
| NH Route 9 WB LT | 37 | 12.1 | B | 0 | 37 | 12.4 | B | 0 | 37 | 14.7 | B | 1 | 37 | 13.4 | B | 1 | 37 | 16.0 | B | 1 |
| NH Route 9 WB TH | 1,179 | 0.0 | A | 0 | 1,221 | 0.0 | A | 0 | 1,489 | 0.0 | A | 0 | 1,349 | 0.0 | A | 0 | 1,617 | 0.0 | A | 0 |
| ***NH Route 106 at the Steeplegate Mall (Project site) driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway EB LT | 13 | 22.3 | C | 0 | 13 | 23.1 | C | 0 | | | | | 13 | 26.7 | D | 1 | | | | |
| Project site driveway EB RT | 11 | 13.4 | B | 0 | 11 | 13.7 | B | 0 | | | | | 11 | 14.6 | B | 0 | | | | |
| NH Route 106 NB LT | 9 | 9.1 | A | 0 | 9 | 9.2 | A | 0 | | | | | 9 | 9.5 | A | 0 | | | | |
| NH Route 106 NB TH | 364 | 0.0 | A | 0 | 373 | 0.0 | A | 0 | | | | | 413 | 0.0 | A | 0 | | | | |
| NH Route 106 WB TH | 619 | 0.0 | A | 0 | 636 | 0.0 | A | 0 | | | | | 703 | 0.0 | A | 0 | | | | |
| NH Route 106 WB RT | 23 | 0.0 | A | 0 | 23 | 0.0 | A | 0 | | | | | 23 | 0.0 | A | 0 | | | | |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway EB LT | 33 | >50.0 | F | 2 | 33 | >50.0 | F | 3 | *See Signalized Intersection* | | | | 33 | >50.0 | F | 3 | *See Signalized Intersection* | | | |
| Project site driveway EB RT | 19 | 13.4 | B | 0 | 19 | 13.7 | B | 0 | *Level-of-Service and Vehicle Queue* | | | | 19 | 14.7 | B | 0 | *Level-of-Service and Vehicle Queue* | | | |
| NH Route 106 NB LT | 23 | 9.2 | A | 0 | 23 | 9.3 | A | 0 | *Summary (Table 13)* | | | | 23 | 9.6 | A | 0 | *Summary (Table 13)* | | | |
| NH Route 106 NB TH | 1,046 | 0.0 | A | 0 | 1,080 | 0.0 | A | 0 | | | | | 1,192 | 0.0 | A | 0 | | | | |
| NH Route 106 WB TH | 631 | 0.0 | A | 0 | 658 | 0.0 | A | 0 | | | | | 726 | 0.0 | A | 0 | | | | |
| NH Route 106 WB RT | 47 | 0.0 | A | 0 | 47 | 0.0 | A | 0 | | | | | 47 | 0.0 | A | 0 | | | | |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Project site driveway EB LT | 24 | 43.4 | E | 1 | 24 | >50.0 | F | 1 | | | | | 24 | >50.0 | F | 2 | | | | |
| Project site driveway EB RT | 19 | 12.9 | B | 0 | 19 | 13.4 | B | 0 | | | | | 19 | 14.2 | B | 0 | | | | |
| NH Route 106 NB LT | 16 | 9.0 | A | 0 | 16 | 9.2 | A | 0 | | | | | 16 | 9.4 | A | 0 | | | | |
| NH Route 106 NB TH | 817 | 0.0 | A | 0 | 858 | 0.0 | A | 0 | | | | | 946 | 0.0 | A | 0 | | | | |
| NH Route 106 WB TH | 619 | 0.0 | A | 0 | 654 | 0.0 | A | 0 | | | | | 720 | 0.0 | A | 0 | | | | |
| NH Route 106 WB RT | 48 | 0.0 | A | 0 | 48 | 0.0 | A | 0 | | | | | 48 | 0.0 | A | 0 | | | | |

See notes at end of table.

**Table 14 (Continued)**
**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Unsignalized Intersection/ Peak-Hour/Movement | 2024 Existing | | | | 2025 No Build | | | | 2025 Opening Year | | | | 2035 No Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Demand[a] | Delay[b] | LOS[c] | Queue 95th[d] | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th |
| ***NH Route 106 at Triangle Park Drive*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| Triangle Park Drive EB LT/RT | 55 | 24.4 | C | 2 | 63 | 26.6 | D | 2 | 76 | 36.0 | E | 3 | 68 | 34.4 | D | 2 | 81 | >50.0 | F | 4 |
| NH Route 106 NB LT | 86 | 11.1 | B | 1 | 90 | 11.4 | B | 1 | 96 | 12.2 | B | 1 | 99 | 12.3 | B | 1 | 105 | 13.2 | B | 1 |
| NH Route 106 NB TH | 327 | 0.0 | A | 0 | 339 | 0.0 | A | 0 | 401 | 0.0 | A | 0 | 374 | 0.0 | A | 0 | 436 | 0.0 | A | 0 |
| NH Route 106 SB TH | 831 | 0.0 | A | 0 | 856 | 0.0 | A | 0 | 941 | 0.0 | A | 0 | 944 | 0.0 | A | 0 | 1,029 | 0.0 | A | 0 |
| NH Route 106 SB RT | 41 | 0.0 | A | 0 | 41 | 0.0 | A | 0 | 41 | 0.0 | A | 0 | 46 | 0.0 | A | 0 | 46 | 0.0 | A | 0 |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| Triangle Park Drive EB LT/RT | 170 | >50.0 | F | 7 | 177 | >50.0 | F | 8 | 197 | >50.0 | F | 14 | 195 | >50.0 | F | 14 | 213 | >50.0 | F | 20 |
| NH Route 106 NB LT | 157 | 10.2 | B | 1 | 166 | 10.5 | B | 1 | 170 | 11.2 | B | 1 | 182 | 11.2 | B | 1 | 186 | 12.0 | B | 1 |
| NH Route 106 NB TH | 933 | 0.0 | A | 0 | 972 | 0.0 | A | 0 | 1,036 | 0.0 | A | 0 | 1,071 | 0.0 | A | 0 | 1,135 | 0.0 | A | 0 |
| NH Route 106 SB TH | 665 | 0.0 | A | 0 | 696 | 0.0 | A | 0 | 788 | 0.0 | A | 0 | 766 | 0.0 | A | 0 | 858 | 0.0 | A | 0 |
| NH Route 106 SB RT | 31 | 0.0 | A | 0 | 31 | 0.0 | A | 0 | 31 | 0.0 | A | 0 | 35 | 0.0 | A | 0 | 35 | 0.0 | A | 0 |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| Triangle Park Drive EB LT/RT | 140 | 34.7 | D | 4 | 145 | 43.7 | E | 5 | 168 | >50.0 | F | 16 | 160 | >50.0 | F | 8 | 183 | >50.0 | F | 20 |
| NH Route 106 NB LT | 163 | 9.9 | A | 1 | 170 | 10.2 | B | 1 | 191 | 11.3 | B | 1 | 187 | 10.8 | B | 1 | 208 | 12.1 | B | 1 |
| NH Route 106 NB TH | 706 | 0.0 | A | 0 | 752 | 0.0 | A | 0 | 878 | 0.0 | A | 0 | 826 | 0.0 | A | 0 | 952 | 0.0 | A | 0 |
| NH Route 106 SB TH | 638 | 0.0 | A | 0 | 678 | 0.0 | A | 0 | 811 | 0.0 | A | 0 | 746 | 0.0 | A | 0 | 879 | 0.0 | A | 0 |
| NH Route 106 SB RT | 16 | 0.0 | A | 0 | 16 | 0.0 | A | 0 | 16 | 0.0 | A | 0 | 18 | 0.0 | A | 0 | 18 | 0.0 | A | 0 |
| ***D'Amante Drive at the Target driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | -- | -- | -- | -- | -- | -- | -- | -- | 21 | 7.8 | A | 0 | -- | -- | -- | -- | 21 | 7.9 | A | 0 |
| D'Amante Drive EB TH/RT | 154 | 0.0 | A | 0 | 171 | 0.0 | A | 0 | 237 | 0.0 | A | 0 | 187 | 0.0 | A | 0 | 253 | 0.0 | A | 0 |
| D'Amante Drive WB LT | 44 | 7.7 | A | 0 | 44 | 7.8 | A | 0 | 44 | 8.0 | A | 0 | 44 | 7.8 | A | 0 | 44 | 8.1 | A | 0 |
| D'Amante Drive WB TH | 102 | 0.0 | A | 0 | 116 | 0.0 | A | 0 | 176 | 0.0 | A | 0 | 132 | 0.0 | A | 0 | 192 | 0.0 | A | 0 |
| D'Amante Drive WB RT | -- | -- | -- | -- | -- | -- | -- | -- | 27 | 0.0 | A | 0 | -- | -- | -- | -- | 27 | 0.0 | A | 0 |
| Target driveway NB LT | 13 | 12.0 | B | 0 | 13 | 12.5 | B | 0 | -- | -- | -- | -- | 13 | 12.9 | B | 0 | -- | -- | -- | -- |
| Target driveway NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 13 | 18.7 | C | 0 | -- | -- | -- | -- | 13 | 19.8 | C | 0 |
| Target driveway NB RT | 23 | 9.0 | A | 0 | 23 | 9.1 | A | 0 | 23 | 9.3 | A | 0 | 23 | 9.1 | A | 0 | 23 | 9.4 | A | 0 |
| Project site driveway SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 45 | 9.8 | A | 0 | -- | -- | -- | -- | 45 | 10.0 | A | 0 |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT/TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 42 | 8.0 | A | 0 | -- | -- | -- | -- | 42 | 8.1 | A | 0 |
| D'Amante Drive EB TH/RT | 307 | 0.0 | A | 0 | 327 | 0.0 | A | 0 | 494 | 0.0 | A | 0 | 363 | 0.0 | A | 0 | 530 | 0.0 | A | 0 |
| D'Amante Drive WB LT | 122 | 8.3 | A | 1 | 122 | 8.4 | A | 1 | 122 | 9.1 | A | 1 | 122 | 8.6 | A | 1 | 122 | 9.3 | A | 1 |
| D'Amante Drive WB TH | 192 | 0.0 | A | 0 | 214 | 0.0 | A | 0 | 233 | 0.0 | A | 0 | 248 | 0.0 | A | 0 | 267 | 0.0 | A | 0 |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 64 | 0.0 | A | 0 | -- | -- | -- | -- | 64 | 0.0 | A | 0 |
| Target driveway NB LT | 133 | 25.9 | D | 2 | 133 | 28.7 | D | 3 | -- | -- | -- | -- | 133 | 34.7 | D | 3 | -- | -- | -- | -- |
| Target driveway NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 133 | >50.0 | F | 8 | -- | -- | -- | 0 | 133 | >50.0 | F | 9 |
| Target driveway NB RT | 130 | 10.1 | B | 1 | 130 | 10.2 | B | 1 | 130 | 11.2 | B | 1 | 130 | 10.4 | B | 1 | 130 | 11.4 | B | 1 |
| Project site driveway SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 32 | 9.8 | A | 0 | -- | -- | -- | -- | 32 | 10.1 | B | 0 |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT/TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 48 | 8.7 | A | 0 | -- | -- | -- | -- | 48 | 8.8 | A | 0 |
| D'Amante Drive EB TH/RT | 341 | 0.0 | A | 0 | 359 | 0.0 | A | 0 | 544 | 0.0 | A | 0 | 401 | 0.0 | A | 0 | 586 | 0.0 | A | 0 |
| D'Amante Drive WB LT | 140 | 8.4 | A | 1 | 140 | 8.5 | A | 1 | 140 | 9.2 | A | 1 | 140 | 8.6 | A | 1 | 140 | 9.4 | A | 1 |
| D'Amante Drive WB TH | 288 | 0.0 | A | 0 | 307 | 0.0 | A | 0 | 376 | 0.0 | A | 0 | 350 | 0.0 | A | 0 | 419 | 0.0 | A | 0 |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 91 | 0.0 | A | 0 | -- | -- | -- | -- | 91 | 0.0 | A | 0 |
| Target driveway NB LT | 111 | 42.9 | E | 4 | 111 | 48.3 | E | 4 | -- | -- | -- | -- | 111 | >50.0 | F | 5 | -- | -- | -- | -- |
| Target driveway NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 111 | >50.0 | F | 13 | -- | -- | -- | -- | 111 | >50.0 | F | 14 |
| Target driveway NB RT | 147 | 10.6 | B | 1 | 147 | 10.7 | B | 1 | 147 | 11.9 | B | 1 | 147 | 10.9 | B | 1 | 147 | 12.2 | B | 1 |
| Project site driveway SB RT | -- | -- | -- | -- | -- | -- | -- | -- | 45 | 11.3 | B | 0 | -- | -- | -- | -- | 45 | 11.8 | B | 1 |

See notes at end of table.

**Table 14 (Continued)**
**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Unsignalized Intersection/ Peak-Hour/Movement | 2024 Existing | | | | 2025 No Build | | | | 2025 Opening Year | | | | 2035 No Build | | | | 2035 Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Demand[a] | Delay[b] | LOS[c] | Queue[d] 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th | Demand | Delay | LOS | Queue 95th |
| ***D'Amante Drive at the East Steeplegate Mall driveway*** | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 8 | 7.6 | A | 0 | 8 | 7.6 | A | 0 | | | | | 8 | 7.7 | A | 0 | | | | |
| D'Amante Drive EB TH | 134 | 0.0 | A | 0 | 151 | 0.0 | A | 0 | | | | | 167 | 0.0 | A | 0 | | | | |
| D'Amante Drive WB TH/RT | 146 | 0.0 | A | 0 | 160 | 0.0 | A | 0 | | | | | 176 | 0.0 | A | 0 | | | | |
| Steeplegate Mall driveway SB LT | 4 | 10.4 | B | 0 | 4 | 10.6 | B | 0 | | | | | 4 | 10.9 | B | 0 | | | | |
| Steeplegate Mall driveway SB RT | 5 | 9.3 | A | 0 | 5 | 9.4 | A | 0 | | | | | 5 | 9.5 | A | 0 | | | | |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 25 | 8.0 | A | 0 | 25 | 8.1 | A | 0 | *Driveway to be Closed under Build Conditions* | | | | 25 | 8.2 | A | 0 | *Driveway to be Closed under Build Conditions* | | | |
| D'Amante Drive EB TH | 325 | 0.0 | A | 0 | 345 | 0.0 | A | 0 | | | | | 381 | 0.0 | A | 0 | | | | |
| D'Amante Drive WB TH/RT | 312 | 0.0 | A | 0 | 334 | 0.0 | A | 0 | | | | | 368 | 0.0 | A | 0 | | | | |
| Steeplegate Mall driveway SB LT | 24 | 13.2 | B | 0 | 24 | 13.6 | B | 0 | | | | | 24 | 14.4 | B | 1 | | | | |
| Steeplegate Mall driveway SB RT | 23 | 10.2 | B | 0 | 23 | 10.4 | B | 0 | | | | | 23 | 10.6 | B | 0 | | | | |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 24 | 8.3 | A | 0 | 24 | 8.4 | A | 0 | | | | | 24 | 8.5 | A | 0 | | | | |
| D'Amante Drive EB TH | 374 | 0.0 | A | 0 | 392 | 0.0 | A | 0 | | | | | 434 | 0.0 | A | 0 | | | | |
| D'Amante Drive WB TH/RT | 416 | 0.0 | A | 0 | 435 | 0.0 | A | 0 | | | | | 478 | 0.0 | A | 0 | | | | |
| Steeplegate Mall driveway SB LT | 22 | 15.8 | C | 1 | 22 | 16.3 | C | 1 | | | | | 22 | 17.7 | C | 1 | | | | |
| Steeplegate Mall driveway SB RT | 42 | 11.4 | B | 1 | 42 | 11.6 | B | 1 | | | | | 42 | 12.1 | B | 1 | | | | |

[a]Demand in vehicles per hour.
[b]Average control delay per vehicle (in seconds).
[c]Level of service.
[d]Queue length in vehicles.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

The following is a summary of the level-of-service and vehicle queue analyses for the intersections within the study area. For context, we note that an LOS of "D" or better is generally defined as "acceptable" operating conditions. Overall Project-related impacts, as well a summary of any individual movements degrading outside of "acceptable" operating conditions, at the study area intersections were identified as follows:

**Signalized Intersections**

Project-related impacts at the signalized study area intersections are shown on Table 13 and are described as follows:

**NH Route 106 at the Interstate 393 Westbound Ramps**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS A to LOS B during the Saturday midday peak-hour as a result of a predicted increase in average motorist delay of 3.0 seconds over No-Build conditions with the addition of Project-related traffic, with vehicle queues shown to increase by up to five (5) vehicles.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS A to LOS B during the Saturday midday peak-hour as a result of a predicted increase in average motorist delay of 5.5 seconds over No-Build conditions with the addition of Project-related traffic, with vehicle queues shown to increase by up to five (5) vehicles.

**NH Route 106 at the Interstate 393 Eastbound Ramps**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in average motorist delays that resulted in a corresponding increase in vehicle queuing of up to seven (7) vehicles.

**NH Route 9 at NH Route 106**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS C to LOS E during the weekday evening peak-hour (26.9 second increase in average motorist delay) and from LOS C to LOS D during the Saturday midday peak-hour (25.6 second increase in average motorist delay)with the addition of Project-related traffic, with vehicle queues shown to increase by up to eight (8) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the NH Route 9 eastbound left-turn movement to change from LOS D to LOS F during both the weekday evening and Saturday midday peak hours.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS D to LOS F during the weekday evening peak-hour (34.4 second increase in average motorist delay) and from LOS C to LOS E during the Saturday midday peak-hour (35.2 second increase in average motorist delay)with the addition of Project-related traffic, with vehicle queues shown to increase by up to ten (10) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the NH Route 9 eastbound left-turn movement to change from LOS D to LOS F.

**NH Route 9 at Break O'Day Drive and Old Sheep Davis Road**

Under 2025 Opening-Year Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to six (6) vehicles.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS A to LOS B during the weekday evening peak-hour as a result of a predicted increase in average motorist delay of 0.5 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to six (6) vehicles.

**NH Route 9 at the Walmart driveway**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to six (6) vehicles. Independent of the Project, it was noted that the NH Route 9 eastbound left-turn movement operates over capacity under existing conditions during the Saturday midday peak-hour.

**NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to six (6) vehicles.

**NH Route 9 at the Steeplegate Mall (South Project site) driveway and the Carrier Place driveway**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS A to LOS B during the weekday morning peak-hour and from LOS A to LOS C during the Saturday midday peak-hour as a result of a predicted increase in average motorist delay of up to 10.9 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to seven (7) vehicles.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS A to LOS B during the weekday morning peak-hour and from LOS A to LOS C during the Saturday midday peak-hour as a result of a predicted increase in average motorist delay of up to 11.0 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to eight (8) vehicles.

**NH Route 9 at D'Amante Drive and Old Loudon Road**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS C to LOS D during the Saturday midday peak-hour as a result of a predicted increase in average motorist delay of 3.1 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to five (5) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the NH Route 9 westbound left-turn movement to change from LOS E to LOS F (22.1 second increase in average motorist delay).

Under 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to six (6) vehicles. Independent of the Project, it was noted that one or more movements at the intersection currently operate at capacity during the Saturday midday peak-hour.

**NH Route 9 at NH Route 132 and Canterbury Road**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS D to LOS E during the weekday evening peak-hour (24.0 second increase in average motorist delay) and from LOS E to LOS F during the Saturday midday peak-hour with the addition of Project-related traffic, with vehicle queues shown to increase by up to eight (8) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the following level of service changes: *weekday evening peak-hour* - the NH Route 9 westbound through/right-turn movement was shown to change from LOS D to LOS F; *Saturday midday peak-hour* - the NH Route 9 eastbound through/right-turn movement was shown to change from LOS C to LOS F and the NH Route 132 southbound left-turn movement was shown to change from LOS E to LOS F.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS E to LOS F during the weekday evening peak-hour as a result of a predicted increase in average motorist delay of 33.6 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to eight (8) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the following level of service changes: *weekday evening peak-hour* - the NH Route 9 eastbound through/right-turn movement was shown to change from LOS D to LOS E (23.2 second increase in average motorist delay); *Saturday midday peak-hour* - the NH Route 9 eastbound through/right-turn movement was shown to change from LOS D to LOS F. Independent of the Project, it was noted that overall operating conditions at the intersection currently operate at capacity during the Saturday midday peak-hour, with one or more movements at the intersection currently operating at or over capacity during the weekday evening and Saturday midday peak-hours.

**NH Route 106 at the Steeplegate Mall (Project site) driveway**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions with the reinstallation of a traffic control signal at this intersection, the signalized intersection is predicted to operate at LOS C or better, with vehicle queues of up to 30 vehicles predicted.

**NH Route 106 at D'Amante Drive**

Under 2025 Opening-Year Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS B to LOS C during the weekday evening peak-hour as a result of a predicted increase in average motorist delay of 10.8 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to six (6) vehicles.

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS B to LOS D during the weekday evening peak-hour as a result of a predicted increase in average motorist delay of 20.7 seconds with the addition of Project-related traffic, with vehicle queues shown to increase by up to ten (10) vehicles. Focusing on individual

movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the NH Route 106 northbound through movement to change from LOS C to LOS E during the weekday evening peak-hour (43.1 second increase in average motorist delay).

**NH Route 106 at Pembroke Road and North Pembroke Road**

Under 2025 Opening-Year Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to nine (9) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the following level of service changes: *weekday evening peak-hour* - the NH Route 106 northbound through movement was shown to change from LOS E to LOS F (26.6 second increase in average motorist delay); *Saturday midday peak-hour* - the Pembroke Road left-turn movement was shown to change from LOS D to LOS E (26.6 second increase in average motorist delay).

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS C to LOS D during the weekday morning peak-hour (14.4 second increase in average motorist delay) and from LOS C to LOS D during the Saturday midday peak-hour over (23.3 second increase in average motorist delay) with the addition of Project-related traffic, with vehicle queues shown to increase by up to eight (8) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the following level of service changes: *weekday morning peak-hour* - the Pembroke Road left-turn movement was shown to change from LOS D to LOS F (31.5 second increase in average motorist delay);; *Saturday midday peak-hour* - the Pembroke Road left-turn movement was shown to change from LOS D to LOS 3 (23.5 second increase in average motorist delay) and the NH Route 106 through movement was shown to change from LOS C to LOS E (35.1 second increase in average motorist delay). Independent of the Project, it was noted that the Pembroke Road left-turn movement operates over capacity under existing conditions during the weekday evening peak-hour.

**NH Route 106 at Regional Drive and Smokey Bear Boulevard**

Under 2025 Opening-Year Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to three (3) vehicles. Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay over No-Build conditions that caused the Regional Drive left-turn movement to change from LOS E to LOS F during the weekday evening peak-hour (19.2 second increase in average motorist delay).

Under 2035 Build peak-month conditions, overall operating conditions were shown to change over No-Build conditions from LOS B to LOS C during the Saturday midday peak-hour (5.6 second increase in average motorist delay) with the addition of Project-related traffic, with vehicle queues shown to increase by up to three (3) vehicles. Independent of the Project, it was noted that the Regional Drive left-turn movement is predicted to operate at or over capacity under 2025 No-Build and 2035 No Build conditions during the weekday evening peak-hour.

**D'Amante Drive at the West Steeplegate Mall (West Project site) driveway and the Shaw's driveway**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to four (4) vehicles.

**D'Amante Drive at Triangle Park Drive (Central Project site driveway)**

Under both 2025 Opening-Year Build and 2035 Build peak-month conditions, no-change in overall level of service was shown to occur over No-Build conditions as a result of the addition of Project related traffic, with Project related impacts defined as an increase in vehicle queuing of up to five (5) vehicles.

**Unsignalized Intersections**

Project-related impacts at the unsignalized study area intersections are shown on Table 14 and are described as follows:

**NH Route 9 at the Regal Concord (North Project site) driveway**

Similar to other unsignalized driveways and side streets along the NH Route 9 corridor, left-turn movements exiting the Project site driveway to NH Route 9 were shown to operate at LOS E during the weekday evening peak-hour and at LOS F during the Saturday midday peak-hour, with residual vehicle queues of up to one (1) vehicle which can be contained within the Project site without inhibiting access or circulation, or the movement of vehicles, pedestrians or bicyclists along NH Route 9. All movements along NH Route 9 approaching the driveway were shown to operate at LOS B or better during the peak-hours with vehicle queues of up to one (1) vehicle.

**NH Route 9 at the Shaw's driveway**

Under 2025 Opening-Year Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay on the Shaw's driveway approach during the weekday evening peak-hour that caused a change in level-of-service from LOS C to LOS D as a result of a predicted increase in average motorist delay of 10.3 seconds. Vehicle queues at the intersection were shown to increase by up to one (1) vehicle with the addition of Project-related traffic.

Under 2035 Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay on the Shaw's driveway approach during the weekday evening peak-hour that caused a change in level-of-service from LOS C to LOS E as a result of a predicted increase in average motorist delay of 15.3 seconds. Vehicle queues at the intersection were shown to increase by up to one (1) vehicle with the addition of Project-related traffic.

**NH Route 106 at Triangle Park Drive**

Under 2025 Opening-Year Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay on the Triangle Park Drive approach that caused a change in level-of-service from LOS D to LOS E during the weekday morning peak-hour

(9.4 second increase in average motorist delay) and from LOS E to LOS F during the Saturday midday peak-hour, with vehicle queues shown to increase by up to 11 vehicles.

Under 2035 Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay on the Triangle Park Drive approach that caused a change in level-of-service from LOS D to LOS F during the weekday morning peak-hour (16.2 second increase in average motorist delay) during the weekday morning peak-hour, with vehicle queues shown to increase by up to 12 vehicles. Independent of the Project, the Triangle Park Drive approach was shown to operate over capacity during the weekday evening peak-hour under existing traffic volume conditions and is predicted to operate at or over capacity during the Saturday midday peak-hour.

**D'Amante Drive at the Target driveway**

Under 2025 Opening-Year Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay for left-turn/through movements exiting the Target driveway that caused a change in level-of-service from LOS D to LOS F during the weekday evening peak-hour and from LOS E to LOS F during the Saturday midday peak-hour, with vehicle queues shown to increase by up to nine (9) vehicles.

Under 2035 Build peak-month conditions, the addition of Project-related traffic was shown to result in an increase in average motorist delay for left-turn/through movements exiting the Target Driveway that caused a change in level-of-service from LOS B to LOS C (8.2 second increase in average motorist delay) during the weekday morning peak-hour and from LOS D to LOS F during the weekday evening peak-hour, with vehicle queues shown to increase by up to nine (9) vehicles. Independent of the Project, left-turn/through movements from the Target Driveway were shown to operate at LOS F during the Saturday midday peak-hour.

**D'Amante Drive at the East Steeplegate Mall driveway**

This driveway will be closed in conjunction with the Project.

# SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersections with NH Route 9, NH Route 106 and D'Amante Drive in accordance with American Association of State Highway and Transportation Officials (AASHTO)[25] requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 15 presents the measured SSD and ISD at the subject intersections.



[25] *A Policy on Geometric Design of Highway and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.

**Table 15**
**SIGHT DISTANCE MEASUREMENTS[a]**

| Intersection/Sight Distance Measurement | Feet | | |
|---|---|---|---|
| | Required Minimum (SSD) | Desirable (ISD)[b] | Measured |
| ***NH Route 9 at the North Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| NH Route 9 approaching from the east | 305 | -- | 650+ |
| NH Route 9 approaching from the west | 305 | -- | 650+ |
| *Intersection Sight Distance:* | | | |
| Looking to the east from the Project site driveway | 305 | 500 | 650+ |
| Looking to the west from the Project site driveway | 305 | 385 | 650+ |
| ***NH Route 9 at the South Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| NH Route 9 approaching from the east | 305 | -- | 650+ |
| NH Route 9 approaching from the west | 305 | -- | 650+ |
| *Intersection Sight Distance:* | | | |
| Looking to the east from the Project site driveway | 305 | 530 | 650+ |
| Looking to the west from the Project site driveway | 305 | 385 | 650+ |
| ***NH Route 106 at the Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| NH Route 106 approaching from the north | 360 | -- | 650+ |
| NH Route 106 approaching from the south | 360 | -- | 650+ |
| *Intersection Sight Distance:* | | | |
| Looking to the north from the Project site driveway | 360 | 430 | 650+ |
| Looking to the south from the Project site driveway | 360 | 565 | 650+ |
| ***D'Amante Drive at the East Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| D'Amante Drive approaching from the east | 250 | -- | 500+ |
| *Intersection Sight Distance:* | | | |
| Looking to the east from the Project site driveway | 250 | 335 | 141/500+[c] |

See notes at the end of the table.

**Table 15 (Continued)**
**SIGHT DISTANCE MEASUREMENTS[a]**

| Intersection/Sight Distance Measurement | Feet | | |
|---|---|---|---|
| | Required Minimum (SSD) | Desirable (ISD)[b] | Measured |
| ***D'Amante Drive at the Central Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| D'Amante Drive approaching from the east | 250 | -- | 368/500+[c] |
| D'Amante Drive approaching from the west | 250 | -- | 500+ |
| *Intersection Sight Distance:* | | | |
| Looking to the east from the Project site driveway | 250 | 335 | 137/500+[c] |
| Looking to the west from the Project site driveway | 250 | 440 | 176/500+[c] |
| ***D'Amante Drive at the West Project site driveway*** | | | |
| *Stopping Sight Distance:* | | | |
| D'Amante Drive approaching from the east | 250 | -- | 249/500+[c] |
| D'Amante Drive approaching from the west | 250 | -- | 500+ |
| *Intersection Sight Distance:* | | | |
| Looking to the east from the Project site driveway | 250 | 335 | 156/500+[c] |
| Looking to the west from the Project site driveway | 250 | 465 | 500+ |

[a]Recommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on a 40 mph approach speed along NH Route 9, a 45 mph approach speed along NH Route 106 and a 35 mph approach speed along D'Amante Drive.

[b]Values shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed. The critical gap for left-turn movements exiting the Project site driveways was increased by 0.5 seconds for each additional travel lane to be crossed in order to account for the additional travel lanes along NH Route 9, NH Route 106 and D'Amante Drive.

[c]With the selective trimming or removal of the existing vegetation located along the Project site frontage on D'Amante Drive within the sight triangle areas.

As can be seen in Table 15, with the selective trimming/removal of vegetation located within the sight triangle areas of the Project site driveways along D'Amante Drive, the available lines of sight at the Project site driveway intersections were found to exceed the recommended minimum sight distances for the driveway to function in a safe (SSD) and efficient (ISD) manner based on the appropriate approach speeds.

# CONCLUSIONS AND RECOMMENDATIONS

## CONCLUSIONS

VAI has conducted a TIS in order to determine the potential impacts on the transportation infrastructure associated with the proposed redevelopment of the Steeplegate Mall shopping center and the adjacent Regal Concord movie theater located at 270 Loudon Road (NH Route 9) and 282 Loudon Road in Concord, New Hampshire, respectively, to accommodate a mixed-use development. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE[26] and with appropriate adjustments to account for internal trips, pass-by trips and divert-link trips, the completed Project, without consideration of the trips generated by the existing uses that are currently operating within the Project site, is expected to generate 15,308 new vehicle trips on an average weekday and 18,994 new vehicle trips on a Saturday (both two-way, 24-hour volumes), with 845 new vehicle trips expected during the weekday morning peak-hour, 1,370 new vehicle trips expected during the weekday evening peak-hour and 1,943 new vehicle trips expected during the Saturday midday peak-hour;

2. For context, in comparison to the trips associated with the fully occupancy of the Steeplegate Mall and the continued operation of the Regal Concord movie theater, the Project is expected to generate 396 additional vehicle trips on an average weekday and a reduction of 2,456 vehicle trips on a Saturday, with 1,567 additional vehicle trips expected during the weekday morning peak-hour, a reduction of 31 vehicle trips during the weekday evening peak-hour and a reduction of 135 vehicle trips during the Saturday midday peak-hour;

3. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with 11 of the 14 signalized study area intersections shown to continue to operate at an overall LOS D or better, where an LOS of "D" or better is generally defined as being representative of "acceptable" traffic operations. Of the three (3) signalized

[26] Institute of Transportation Engineers, op. cit. 1.

intersections that were identified to operate below LOS D, two (2) were identified to be operating at or over capacity (i.e., LOS "E" or "F") during the weekday evening and/or the Saturday midday peak hours under No-Build conditions independent of the Project Specific improvements have been or will be advanced at many of these intersections in order to improve operations (discussion follows);

4. Critical movements at the unsignalized study area intersections were shown to operate at or over capacity independent of the Project, with Project-related impacts on these movements defined as an increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of up to 12 vehicles (NH Route 106/Triangle Park Drive during the Saturday midday peak-hour under 2035 Build conditions);

5. The NH Route 106/Project site driveway intersection was found to meet the necessary warrants specified in the MUTCD[27] under 2025 Build traffic volume conditions to justify the reactivation of the traffic control signal at the intersection as a part of the Project;

6. With the reinstallation of a traffic control signal at the NH Route 106/Project site driveway intersection, all movements exiting the Project site will operate at LOS C or better during the peak hours, with the exception of vehicles exiting the north Project site driveway to NH Route 9 which are predicted to operate at or over capacity during the weekday evening and the Saturday midday peak hours under both 2025 and 2035 Build peak-month conditions; however, the resulting residual vehicle queue (one (1) vehicle) can be contained within the Project site without inhibiting access or circulation, or the movement of vehicles along NH Route 9; and

7. Lines of sight to and from the Project site driveway intersections with NH Route 9, NH Route 106 and D'Amante Drive were found to exceed or could be made to exceed the recommended minimum distances for safe and efficient operation.

In consideration of the above, it has been concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

## RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

### Project Access

Access to the Project site will be provided by way of six (6) driveways that will intersect NH Route 9 (two (2) driveways), NH Route 106 (one (1) driveway) and D'Amante Drive (three (3) driveways) , with the driveways along NH Route 9 and NH Route 106 situated at the location of the existing driveways that serve the Project site. The three (3) driveways along D'Amante Drive will be configured as follows: the existing full access driveway that currently serves the Project site

[27]Federal Highway Administration, op. cit. 2.

and intersects the north side of D'Amante Drive opposite the Shaw's driveway; a new full access driveway that will intersect the north side of D'Amante Drive opposite Triangle Park Drive; and a new driveway that will intersect the north side of D'Amante Drive opposite the Target driveway where exiting movements from the Project site will be restricted to right-turn only. The existing Project site driveway that intersects the north side of D'Amante Drive approximately 260 feet east of the Target driveway will be closed in conjunction with the Project. In conjunction with the Project, a new internal roadway network will be constructed that will connect the south NH Route 9 driveway, the NH Route 106 driveway and the D'Amante Drive driveway and will ultimately be conveyed to the City of Concord as a public way.

The following recommendations are offered with respect to Project access, internal circulation, and parking, many of which are reflected on the Site Plans for the Project:

- The Project site driveways and internal circulating drives should be a minimum of 24 feet in width where two-way traffic is to be conveyed and a minimum of 20 feet in width for one-way travel, and designed to accommodate the turning and maneuvering requirements of delivery trucks (where delivery trucks are to be accommodated) and the largest anticipated responding emergency vehicle.

- A review of the auxiliary turn lane warrants for the installation of left and right turn lanes at the Project site driveway intersections indicates that left-turn lanes should be provided on the D'Amante Drive eastbound approaches to the Project site driveways located opposite Triangle Park Drive and opposite the Target driveway. In addition, right-turn lanes should be provided on the NH Route 9 eastbound approach to the Project site driveway that is located opposite Carrier Place and on the D'Amante Drive westbound approach to the Project site driveway located opposite the Target driveway. The addition of the aforementioned turn lanes should be completed commensurate with the construction of the Project, with the suggested geometric improvements depicted on Figure 25.

- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23 feet in order to facilitate parking maneuvers.

- A review of the warrants specified in the MUTCD[28] for the installation of a traffic control signal indicates that **the reinstallation of the traffic control signal at the NH Route 106/Steeplegate Mall (Project site) driveway intersection is warranted under 2025 average-month Opening-Year Build conditions**. As such, it is recommended that a traffic control signal be reinstalled at this intersection to include upgrading/replacing the traffic signal poles, mast arms and appurtenances that were retained at the intersection as necessary. These improvements are conceptually depicted on Figure 25. Given that the completion and opening of specific components of the Project will likely be phased, the traffic signal equipment should be installed as a part of the initial construction of the Project and traffic volumes at the intersection should be monitored on an annual or more frequent basis in order to determine when the traffic volume thresholds are met that would justify (warrant) the activation of the traffic signal system. With the reimplementation of traffic signal control at the intersection, all movements are predicted to operate at LOS D or better during the peak-hours.

[28]Federal Highway Administration, op. cit. 3

- Vehicles exiting the Project site at the unsignalized Project site driveway intersections should be placed under STOP-sign control.

- Appropriate signs ("One-Way" and "Do Not Enter") and pavement markings should be provided where one-way traffic is to be conveyed.

- All signs and pavement markings to be installed within the Project shall conform to the applicable standards of the MUTCD.[29]

- An internal sidewalk network should be developed that links the proposed buildings to parking areas and extends to the existing sidewalks along NH Route 9 and D'Amante Drive. Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at pedestrian crossings that are to be constructed or modified in conjunction with the Project.

- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.

- Existing vegetation located along the Project site frontage on D'Amante Drive should be removed or selectively trimmed and maintained as necessary so that no portion of the vegetation is located within the sight triangle areas of the Project site driveways.

- Snow accumulations (windrows) within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.

**Off-Site**

**NH Route 9 at NH Route 106**

Independent of the Project, left-turn and through movements along the NH Route 9 eastbound approach are currently or are predicted to operate at or over capacity (i.e., LOS "E" or "F") during the weekday evening and Saturday midday peak-hours. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. As can be seen in Table 16, with these improvements, no movement is expected to operate below LOS D during any peak-hour, an improvement over No-Build conditions.

[29]Federal Highway Administration, op. cit. 3.

**Table 16**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at NH Route 106*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.21 | 27.5 | C | 1/2 | 0.75 | 37.0 | D | 5/10 | 0.78 | 32.2 | C | 3/7 | 0.24 | 30.0 | C | 1/3 | 0.80 | 42.6 | D | 5/11 | 0.81 | 34.6 | C | 3/7 |
| NH Route 9 EB TH | 0.35 | 28.8 | C | 2/4 | 0.34 | 30.0 | C | 2/5 | 0.36 | 23.9 | C | 2/4 | 0.40 | 31.5 | C | 2/5 | 0.39 | 32.7 | C | 3/6 | 0.39 | 24.7 | C | 2/4 |
| NH Route 9 EB RT | 0.03 | 26.6 | C | 0/0 | 0.03 | 27.6 | C | 0/0 | 0.03 | 21.8 | C | 0/0 | 0.03 | 28.8 | C | 0/0 | 0.03 | 29.8 | C | 0/0 | 0.03 | 22.3 | C | 0/0 |
| NH Route 9 WB LT | 0.55 | 25.6 | C | 4/9 | 0.60 | 30.9 | C | 4/9 | 0.71 | 30.9 | C | 4/8 | 0.57 | 27.1 | C | 4/10 | 0.63 | 32.6 | C | 5/11 | 0.78 | 36.0 | D | 4/9 |
| NH Route 9 WB LT/TH | 0.50 | 24.2 | C | 3/7 | 0.59 | 29.2 | C | 5/8 | 0.69 | 27.0 | C | 3/6 | 0.52 | 25.3 | C | 4/8 | 0.61 | 30.6 | C | 5/9 | 0.76 | 29.6 | C | 4/7 |
| NH Route 9 WB RT | 0.06 | 21.1 | C | 0/0 | 0.05 | 24.4 | C | 0/0 | 0.05 | 20.7 | C | 0/0 | 0.07 | 21.8 | C | 0/0 | 0.06 | 25.1 | C | 0/0 | 0.06 | 21.1 | C | 0/0 |
| NH Route 106 NB LT | 0.16 | 36.0 | D | 0/1 | 0.18 | 41.0 | D | 0/1 | 0.15 | 31.0 | C | 0/1 | 0.19 | 38.9 | D | 0/1 | 0.20 | 43.6 | D | 0/1 | 0.17 | 31.7 | C | 0/1 |
| NH Route 106 NB TH | 0.30 | 24.1 | C | 2/4 | 0.42 | 27.3 | C | 3/6 | 0.37 | 19.0 | B | 2/4 | 0.32 | 25.6 | C | 2/5 | 0.44 | 28.4 | C | 4/7 | 0.38 | 18.9 | B | 2/4 |
| NH Route 106 NB RT | 0.08 | 22.7 | C | 0/2 | 0.10 | 24.9 | C | 0/2 | 0.10 | 17.5 | B | 0/1 | 0.08 | 24.0 | C | 0/2 | 0.11 | 25.8 | C | 0/2 | 0.11 | 17.3 | B | 0/1 |
| NH Route 106 SB LT | 0.14 | 28.5 | C | 1/2 | 0.16 | 33.4 | C | 1/2 | 0.26 | 29.3 | C | 1/2 | 0.16 | 30.7 | C | 1/2 | 0.17 | 35.2 | D | 1/2 | 0.29 | 30.3 | C | 1/2 |
| NH Route 106 SB TH | 0.60 | 21.9 | C | 5/9 | 0.66 | 25.5 | C | 6/10 | 0.69 | 21.5 | C | 5/8 | 0.65 | 24.0 | C | 6/10 | 0.70 | 27.2 | C | 8/11 | 0.74 | 22.6 | C | 5/9 |
| NH Route 106 SB RT | 0.15 | 0.2 | A | 0/0 | 0.38 | 0.7 | A | 0/0 | 0.38 | 0.7 | A | 0/0 | 0.17 | 0.2 | A | 0/0 | 0.40 | 0.8 | A | 0/0 | 0.40 | 0.8 | A | 0/0 |
| **Overall** | **--** | **21.5** | **C** | **--** | **--** | **24.0** | **C** | **--** | **--** | **20.5** | **C** | **--** | **--** | **23.0** | **C** | **--** | **--** | **25.9** | **C** | **--** | **--** | **21.9** | **C** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.85 | 50.6 | D | 7/13 | 1.30 | >80.0 | F | 14/20 | 0.90 | 43.9 | D | 7/11 | 1.01 | >80.0 | F | 9/15 | 1.48 | >80.0 | F | 16/22 | 0.95 | 50.4 | D | 8/12 |
| NH Route 9 EB TH | 1.02 | >80.0 | F | 9/20 | 1.22 | >80.0 | F | 13/22 | 0.85 | 44.1 | D | 7/13 | 1.23 | >80.0 | F | 12/22 | 1.42 | >80.0 | F | 15/25 | 0.91 | 52.3 | D | 8/14 |
| NH Route 9 EB RT | 0.04 | 34.0 | C | 0/0 | 0.04 | 37.0 | D | 0/0 | 0.04 | 23.9 | C | 0/0 | 0.04 | 38.0 | D | 0/0 | 0.04 | 40.3 | D | 0/0 | 0.04 | 23.6 | C | 0/0 |
| NH Route 9 WB LT | 0.55 | 37.0 | D | 5/8 | 0.61 | 40.1 | D | 6/9 | 0.74 | 41.9 | D | 4/8 | 0.60 | 41.6 | D | 5/9 | 0.68 | 45.9 | D | 7/10 | 0.80 | 46.6 | D | 5/9 |
| NH Route 9 WB LT/TH | 0.53 | 35.7 | D | 5/7 | 0.60 | 38.3 | D | 6/8 | 0.74 | 36.1 | D | 5/6 | 0.59 | 39.7 | D | 6/8 | 0.66 | 42.4 | D | 7/9 | 0.78 | 37.7 | D | 5/7 |
| NH Route 9 WB RT | 0.04 | 31.4 | C | 0/0 | 0.03 | 32.5 | C | 0/0 | 0.03 | 27.4 | C | 0/0 | 0.04 | 34.0 | C | 0/0 | 0.04 | 34.9 | C | 0/0 | 0.04 | 27.0 | C | 0/0 |
| NH Route 106 NB LT | 0.34 | 42.8 | D | 2/4 | 0.36 | 46.1 | D | 2/4 | 0.52 | 40.7 | D | 1/3 | 0.39 | 46.7 | D | 2/4 | 0.40 | 49.1 | D | 2/4 | 0.48 | 37.7 | D | 1/3 |
| NH Route 106 NB TH | 0.63 | 27.4 | C | 9/13 | 0.69 | 29.4 | C | 11/16 | 0.84 | 32.1 | C | 9/13 | 0.69 | 31.3 | C | 10/15 | 0.76 | 33.6 | C | 13/17 | 0.90 | 36.0 | D | 10/15 |
| NH Route 106 NB RT | 0.32 | 23.6 | C | 1/4 | 0.43 | 25.3 | C | 2/6 | 0.35 | 22.2 | C | 0/3 | 0.42 | 26.7 | C | 1/6 | 0.52 | 28.5 | C | 3/9 | 0.48 | 23.0 | C | 11/6 |
| NH Route 106 SB LT | 0.48 | 42.7 | D | 2/5 | 0.50 | 45.9 | D | 3/5 | 0.55 | 37.8 | D | 2/4 | 0.42 | 42.2 | D | 3/5 | 0.43 | 44.6 | D | 3/5 | 0.69 | 48.6 | D | 2/5 |
| NH Route 106 SB TH | 0.51 | 24.3 | C | 7/10 | 0.55 | 25.4 | C | 8/12 | 0.63 | 23.4 | C | 7/9 | 0.52 | 24.2 | C | 8/12 | 0.57 | 25.4 | C | 10/13 | 0.73 | 26.6 | C | 8/10 |
| NH Route 106 SB RT | 0.29 | 0.5 | A | 0/0 | 0.41 | 0.8 | A | 0/0 | 0.41 | 0.8 | A | 0/0 | 0.31 | 0.5 | A | 0/0 | 0.43 | 0.9 | A | 0/0 | 0.43 | 0.9 | A | 0/0 |
| **Overall** | **--** | **33.8** | **C** | **--** | **--** | **60.7** | **E** | **--** | **--** | **28.9** | **C** | **--** | **--** | **46.3** | **D** | **--** | **--** | **>80.0** | **F** | **--** | **--** | **32.3** | **C** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.79 | 41.6 | D | 6/12 | 1.26 | >80.0 | F | 13/21 | 0.79 | 41.9 | D | 11/14 | 0.88 | 51.2 | D | 7/14 | 1.40 | >80.0 | F | 15/24 | 0.83 | 44.9 | D | 12/15 |
| NH Route 9 EB TH | 0.88 | 58.3 | E | 7/17 | 1.09 | >80.0 | F | 11/21 | 0.68 | 39.9 | D | 10/14 | 1.00 | >80.0 | F | 9/20 | 1.25 | >80.0 | F | 13/24 | 0.74 | 43.2 | D | 11/15 |
| NH Route 9 EB RT | 0.04 | 29.9 | C | 0/0 | 0.04 | 34.2 | C | 0/0 | 0.04 | 29.8 | C | 0/0 | 0.05 | 31.5 | C | 0/0 | 0.05 | 36.6 | D | 0/0 | 0.05 | 30.5 | C | 0/0 |
| NH Route 9 WB LT | 0.58 | 33.0 | C | 5/9 | 0.66 | 38.1 | D | 7/12 | 0.72 | 46.7 | D | 8/12 | 0.61 | 35.0 | D | 6/10 | 0.72 | 42.8 | D | 8/15 | 0.77 | 51.4 | D | 9/14 |
| NH Route 9 WB LT/TH | 0.56 | 31.7 | C | 5/8 | 0.65 | 35.6 | D | 7/11 | 0.71 | 42.9 | D | 8/11 | 0.61 | 33.3 | C | 6/9 | 0.71 | 39.0 | D | 8/12 | 0.76 | 45.8 | D | 9/12 |
| NH Route 9 WB RT | 0.03 | 26.9 | C | 0/0 | 0.02 | 28.6 | C | 0/0 | 0.02 | 33.7 | C | 0/0 | 0.03 | 27.7 | C | 0/0 | 0.03 | 30.1 | C | 0/0 | 0.03 | 34.5 | C | 0/0 |
| NH Route 106 NB LT | 0.39 | 38.7 | D | 2/4 | 0.41 | 43.0 | D | 2/4 | 0.50 | 51.5 | D | 2/4 | 0.42 | 40.2 | D | 2/4 | 0.44 | 45.1 | D | 2/5 | 0.55 | 54.2 | D | 3/5 |
| NH Route 106 NB TH | 0.47 | 26.1 | C | 5/8 | 0.61 | 30.1 | C | 8/11 | 0.66 | 36.5 | D | 10/12 | 0.57 | 30.0 | C | 6/9 | 0.64 | 31.3 | C | 9/13 | 0.69 | 37.2 | D | 10/13 |
| NH Route 106 NB RT | 0.19 | 23.7 | C | 0/3 | 0.25 | 25.8 | C | 0/3 | 0.25 | 30.7 | C | 0/3 | 0.21 | 26.5 | C | 0/3 | 0.27 | 26.5 | C | 0/3 | 0.27 | 30.9 | C | 0/3 |
| NH Route 106 SB LT | 0.28 | 37.3 | D | 1/3 | 0.26 | 40.0 | D | 1/3 | 0.40 | 50.9 | D | 2/4 | 0.24 | 35.7 | D | 1/3 | 0.27 | 41.3 | D | 2/3 | 0.50 | 54.2 | D | 2/4 |
| NH Route 106 SB TH | 0.62 | 27.9 | C | 7/11 | 0.71 | 31.0 | C | 10/14 | 0.82 | 43.1 | D | 13/16 | 0.66 | 29.5 | C | 8/12 | 0.72 | 31.7 | C | 11/15 | 0.88 | 48.3 | D | 14/19 |
| NH Route 106 SB RT | 0.38 | 0.7 | A | 0/0 | 0.53 | 1.3 | A | 0/0 | 0.53 | 1.3 | A | 0/0 | 0.41 | 0.8 | A | 0/0 | 0.56 | 1.5 | A | 0/0 | 0.56 | 1.5 | A | 0/0 |
| **Overall** | **--** | **28.4** | **C** | **--** | **--** | **54.0** | **D** | **--** | **--** | **33.5** | **C** | **--** | **--** | **33.4** | **C** | **--** | **--** | **68.6** | **E** | **--** | **--** | **36.1** | **D** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Walmart driveway*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.37 | 17.4 | B | 0/2 | 0.34 | 20.3 | C | 1/2 | 0.37 | 33.6 | C | 1/3 | 0.37 | 17.6 | B | 1/2 | 0.35 | 20.7 | C | 1/2 | 0.37 | 33.6 | C | 1/3 |
| Private driveway SEB RT | 0.03 | 10.8 | B | 0/1 | 0.03 | 13.9 | B | 0/1 | 0.04 | 24.3 | C | 0/1 | 0.03 | 11.0 | B | 0/1 | 0.03 | 14.2 | B | 0/1 | 0.04 | 24.3 | C | 0/1 |
| Walmart driveway NWB LT/TH | 0.17 | 16.2 | B | 0/1 | 0.17 | 19.2 | B | 1/1 | 0.17 | 32.0 | C | 1/2 | 0.18 | 16.4 | B | 0/1 | 0.17 | 19.5 | B | 1/1 | 0.17 | 32.0 | C | 1/2 |
| Walmart driveway NWB RT | 0.02 | 10.6 | B | 0/1 | 0.02 | 13.6 | B | 0/1 | 0.02 | 23.6 | C | 0/1 | 0.02 | 10.7 | B | 0/1 | 0.02 | 13.9 | B | 0/1 | 0.02 | 23.6 | C | 0/1 |
| NH Route 9 EB LT | 0.15 | 15.0 | B | 0/1 | 0.19 | 19.9 | B | 1/2 | 0.21 | 22.4 | C | 1/1 | 0.15 | 15.1 | B | 0/1 | 0.19 | 20.2 | C | 1/2 | 0.21 | 22.6 | C | 1/1 |
| NH Route 9 EB TH | 0.09 | 6.8 | A | 0/1 | 0.30 | 7.3 | A | 2/4 | 0.25 | 7.9 | A | 4/4 | 0.10 | 6.8 | A | 0/1 | 0.31 | 7.2 | A | 3/4 | 0.25 | 7.9 | A | 4/4 |
| NH Route 9 EB RT | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.2 | A | 0/0 | 0.01 | 6.0 | A | 0/0 | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.5 | A | 0/0 | 0.01 | 6.0 | A | 0/0 |
| NH Route 9 WB LT | 0.21 | 15.0 | B | 0/1 | 0.26 | 20.0 | B | 1/2 | 0.29 | 33.4 | C | 1/2 | 0.21 | 15.2 | B | 0/2 | 0.27 | 20.4 | C | 1/2 | 0.29 | 33.4 | C | 1/2 |
| NH Route 9 WB TH/RT | 0.17 | 6.9 | A | 1/2 | 0.38 | 7.5 | A | 3/5 | 0.30 | 7.3 | A | 3/5 | 0.19 | 6.9 | A | 1/2 | 0.38 | 7.4 | A | 3/5 | 0.32 | 7.4 | A | 3/5 |
| **Overall** | -- | **9.9** | **A** | -- | -- | **9.4** | **A** | -- | -- | **11.7** | **B** | -- | -- | **9.8** | **A** | -- | -- | **9.8** | **A** | -- | -- | **11.7** | **B** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 | 0.48 | 24.2 | C | 2/3 | 0.54 | 34.0 | C | 2/4 | 0.54 | 34.0 | C | 2/4 | 0.49 | 24.3 | C | 2/3 |
| Private driveway SEB RT | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 16.4 | B | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 21.4 | C | 0/1 | 0.02 | 16.5 | B | 0/1 |
| Walmart driveway NWB LT/TH | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 | 0.50 | 24.4 | C | 2/3 | 0.56 | 34.4 | C | 2/4 | 0.56 | 34.4 | C | 2/4 | 0.51 | 24.6 | C | 2/3 |
| Walmart driveway NWB RT | 0.11 | 19.2 | B | 0/1 | 0.25 | 20.3 | C | 2/3 | 0.22 | 13.9 | B | 1/2 | 0.14 | 19.4 | B | 1/2 | 0.27 | 20.4 | C | 2/3 | 0.23 | 14.1 | B | 1/2 |
| NH Route 9 EB LT | 0.30 | 38.9 | D | 1/2 | 0.30 | 46.1 | D | 2/3 | 0.38 | 20.2 | C | 1/3 | 0.30 | 41.1 | D | 1/3 | 0.30 | 46.4 | D | 2/3 | 0.38 | 19.6 | B | 1/3 |
| NH Route 9 EB TH | 0.25 | 7.9 | A | 3/5 | 0.38 | 9.3 | A | 4/11 | 0.44 | 13.9 | B | 5/5 | 0.27 | 7.6 | A | 3/5 | 0.40 | 9.3 | A | 4/11 | 0.47 | 14.4 | B | 5/6 |
| NH Route 9 EB RT | 0.01 | 9.0 | A | 0/0 | 0.01 | 9.0 | A | 0/1 | 0.01 | 9.1 | A | 0/0 | 0.01 | 9.0 | A | 0/0 | 0.01 | 9.0 | A | 0/0 | 0.01 | 9.0 | A | 0/0 |
| NH Route 9 WB LT | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 | 0.41 | 22.8 | C | 2/4 | 0.45 | 31.4 | C | 3/4 | 0.45 | 31.4 | C | 3/4 | 0.41 | 22.8 | C | 2/4 |
| NH Route 9 WB TH/RT | 0.20 | 8.2 | A | 2/4 | 0.30 | 9.0 | A | 3/6 | 0.33 | 8.2 | A | 3/4 | 0.21 | 8.3 | A | 2/4 | 0.32 | 9.2 | A | 4/6 | 0.34 | 8.3 | A | 3/5 |
| **Overall** | -- | **16.9** | **B** | -- | -- | **15.9** | **B** | -- | -- | **14.1** | **B** | -- | -- | **16.4** | **B** | -- | -- | **16.4** | **B** | -- | -- | **14.1** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Private driveway SEB LT/TH | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.68 | 37.9 | D | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.52 | 34.8 | C | 2/4 | 0.68 | 37.9 | D | 2/4 |
| Private driveway SEB RT | 0.06 | 11.0 | B | 0/1 | 0.10 | 12.4 | B | 1/2 | 0.10 | 10.4 | B | 1/1 | 0.06 | 11.2 | B | 0/1 | 0.10 | 12.4 | B | 1/2 | 0.10 | 10.4 | B | 1/1 |
| Walmart driveway NWB LT/TH | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 | 0.81 | 49.3 | D | 3/6 | 0.62 | 37.6 | D | 4/5 | 0.62 | 37.6 | D | 4/5 | 0.81 | 49.3 | D | 3/6 |
| Walmart driveway NWB RT | 0.11 | 18.6 | B | 0/1 | 0.22 | 19.6 | B | 2/3 | 0.14 | 15.5 | B | 1/2 | 0.14 | 18.9 | B | 1/2 | 0.24 | 19.7 | B | 2/3 | 0.14 | 15.5 | B | 1/2 |
| NH Route 9 EB LT | 1.01 | >80.0 | F | 2/6 | 1.01 | >80.0 | F | 2/7 | 0.73 | 27.2 | C | 1/3 | 1.01 | >80.0 | F | 1/6 | 1.01 | >80.0 | F | 2/7 | 0.73 | 28.4 | C | 1/3 |
| NH Route 9 EB TH | 0.28 | 6.6 | A | 2/3 | 0.44 | 7.7 | A | 3/4 | 0.45 | 12.9 | B | 6/9 | 0.31 | 6.8 | A | 2/3 | 0.47 | 9.0 | A | 3/4 | 0.48 | 12.4 | B | 6/10 |
| NH Route 9 EB RT | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 8.6 | A | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 8.6 | A | 0/0 |
| NH Route 9 WB LT | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 | 0.53 | 25.6 | C | 3/5 | 0.55 | 35.9 | D | 4/6 | 0.55 | 35.9 | D | 4/6 | 0.53 | 25.6 | C | 3/5 |
| NH Route 9 WB TH/RT | 0.48 | 24.1 | C | 6/8 | 0.68 | 26.4 | C | 9/12 | 0.70 | 20.9 | C | 7/11 | 0.51 | 24.3 | C | 7/8 | 0.72 | 27.5 | C | 10/13 | 0.75 | 22.0 | C | 8/12 |
| **Overall** | -- | **25.7** | **C** | -- | -- | **25.1** | **C** | -- | -- | **20.5** | **C** | -- | -- | **25.4** | **C** | -- | -- | **25.6** | **C** | -- | -- | **20.6** | **C** | -- |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.03 | 17.3 | B | 0/0 | 0.03 | 18.8 | B | 0/1 | 0.03 | 32.8 | C | 0/1 | 0.03 | 17.5 | B | 0/0 | 0.03 | 18.9 | B | 0/1 | 0.03 | 32.8 | C | 0/1 |
| Patriots Place driveway SEB RT | 0.00 | 17.2 | B | 0/0 | 0.00 | 18.8 | B | 0/0 | 0.00 | 32.7 | C | 0/0 | 0.00 | 17.4 | B | 0/0 | 0.00 | 18.9 | B | 0/0 | 0.00 | 32.7 | C | 0/0 |
| Harbor Freight Tools driveway NWB LT/TH | 0.31 | 18.9 | B | 0/1 | 0.27 | 20.2 | C | 1/1 | 0.35 | 35.4 | D | 1/2 | 0.32 | 19.2 | B | 0/1 | 0.32 | 20.4 | C | 1/1 | 0.35 | 35.4 | D | 1/2 |
| Harbor Freight Tools driveway NWB RT | 0.00 | 17.2 | B | 0/0 | 0.00 | 18.7 | B | 0/0 | 0.00 | 32.7 | C | 0/0 | 0.00 | 17.4 | B | 0/0 | 0.00 | 18.8 | B | 0/0 | 0.00 | 32.7 | C | 0/0 |
| NH Route 9 EB LT | 0.14 | 18.1 | B | 0/1 | 0.16 | 22.6 | C | 0/1 | 0.22 | 40.0 | D | 1/1 | 0.14 | 18.4 | B | 0/1 | 0.17 | 22.7 | C | 0/1 | 0.22 | 39.6 | D | 1/1 |
| NH Route 9 EB TH | 0.13 | 4.5 | A | 0/2 | 0.34 | 6.0 | A | 2/4 | 0.27 | 3.9 | A | 2/3 | 0.15 | 4.4 | A | 0/2 | 0.36 | 6.0 | A | 2/4 | 0.29 | 4.0 | A | 2/4 |
| NH Route 9 EB RT | 0.01 | 4.2 | A | 0/0 | 0.01 | 4.8 | A | 0/0 | 0.01 | 3.5 | A | 0/0 | 0.01 | 4.1 | A | 0/0 | 0.01 | 4.7 | A | 0/0 | 0.01 | 3.5 | A | 0/0 |
| NH Route 9 WB LT | 0.06 | 17.6 | B | 0/1 | 0.07 | 21.6 | C | 0/1 | 0.10 | 31.5 | C | 0/1 | 0.06 | 17.9 | B | 0/1 | 0.07 | 21.8 | C | 0/1 | 0.09 | 30.2 | C | 0/1 |
| NH Route 9 WB TH/RT | 0.17 | 4.5 | A | 0/2 | 0.39 | 6.0 | A | 2/5 | 0.31 | 2.0 | A | 1/1 | 0.18 | 4.5 | A | 0/2 | 0.40 | 6.1 | A | 2/5 | 0.32 | 2.1 | A | 1/1 |
| **Overall** | **--** | **6.3** | **A** | **--** | **--** | **6.8** | **A** | **--** | **--** | **4.7** | **A** | **--** | **--** | **6.1** | **A** | **--** | **--** | **6.8** | **A** | **--** | **--** | **4.7** | **A** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 | 0.32 | 22.4 | C | 1/2 | 0.37 | 31.1 | C | 2/3 | 0.37 | 31.1 | C | 2/3 | 0.32 | 22.4 | C | 1/2 |
| Patriots Place driveway SEB RT | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 20.6 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 28.4 | C | 0/0 | 0.06 | 20.6 | C | 0/0 |
| Harbor Freight Tools driveway NWB LT/TH | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.51 | 24.1 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.55 | 34.0 | C | 2/3 | 0.51 | 24.1 | C | 2/3 |
| Harbor Freight Tools driveway NWB RT | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 20.4 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 28.2 | C | 0/0 | 0.02 | 20.4 | C | 0/0 |
| NH Route 9 EB LT | 0.35 | 41.8 | D | 2/4 | 0.35 | 36.1 | D | 2/4 | 0.38 | 32.3 | C | 1/3 | 0.35 | 42.4 | D | 2/4 | 0.35 | 35.8 | D | 2/4 | 0.39 | 34.4 | C | 1/3 |
| NH Route 9 EB TH | 0.24 | 8.9 | A | 1/5 | 0.36 | 14.8 | B | 3/10 | 0.36 | 5.4 | A | 2/3 | 0.27 | 9.7 | A | 1/5 | 0.39 | 15.0 | B | 3/11 | 0.38 | 5.4 | A | 2/3 |
| NH Route 9 EB RT | 0.03 | 7.2 | A | 0/0 | 0.03 | 7.7 | A | 0/1 | 0.03 | 5.6 | A | 0/0 | 0.03 | 7.2 | A | 0/0 | 0.03 | 7.6 | A | 0/1 | 0.03 | 5.6 | A | 0/0 |
| NH Route 9 WB LT | 0.10 | 42.2 | D | 1/1 | 0.09 | 47.3 | D | 1/1 | 0.21 | 20.7 | C | 0/1 | 0.10 | 42.6 | D | 1/1 | 0.09 | 48.6 | D | 1/1 | 0.21 | 20.4 | C | 0/1 |
| NH Route 9 WB TH/RT | 0.23 | 10.4 | B | 2/6 | 0.35 | 13.7 | B | 3/9 | 0.39 | 6.0 | A | 2/3 | 0.25 | 10.9 | B | 2/6 | 0.37 | 14.1 | B | 4/10 | 0.41 | 5.9 | A | 2/3 |
| **Overall** | **--** | **16.6** | **B** | **--** | **--** | **18.2** | **B** | **--** | **--** | **9.8** | **A** | **--** | **--** | **16.6** | **B** | **--** | **--** | **18.2** | **B** | **--** | **--** | **9.6** | **A** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Patriots Place driveway SEB LT/TH | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 | 0.35 | 24.7 | C | 1/2 | 0.32 | 32.3 | C | 2/3 | 0.32 | 32.3 | C | 2/3 | 0.35 | 24.7 | C | 1/2 |
| Patriots Place driveway SEB RT | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 | 0.09 | 22.8 | C | 0/0 | 0.09 | 30.3 | C | 0/1 | 0.09 | 30.3 | C | 0/1 | 0.09 | 22.8 | C | 0/0 |
| Harbor Freight Tools driveway NWB LT/TH | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 | 0.64 | 30.8 | C | 2/3 | 0.58 | 36.7 | D | 3/4 | 0.58 | 36.7 | D | 3/4 | 0.64 | 30.8 | C | 2/3 |
| Harbor Freight Tools driveway NWB RT | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 22.4 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 29.7 | C | 0/0 | 0.02 | 22.4 | C | 0/0 |
| NH Route 9 EB LT | 0.45 | 31.8 | C | 2/3 | 0.45 | 53.1 | D | 3/4 | 0.45 | 38.2 | D | 2/3 | 0.45 | 32.2 | C | 2/3 | 0.45 | 53.4 | D | 3/4 | 0.45 | 38.5 | D | 2/3 |
| NH Route 9 EB TH | 0.34 | 5.6 | A | 0/4 | 0.47 | 5.9 | A | 2/5 | 0.49 | 5.5 | A | 2/4 | 0.38 | 5.5 | A | 1/5 | 0.51 | 5.8 | A | 2/5 | 0.54 | 5.2 | A | 2/4 |
| NH Route 9 EB RT | 0.04 | 0.8 | A | 0/0 | 0.04 | 3.5 | A | 0/0 | 0.04 | 5.9 | A | 0/0 | 0.04 | 1.0 | A | 0/0 | 0.04 | 2.5 | A | 0/0 | 0.04 | 5.9 | A | 0/0 |
| NH Route 9 WB LT | 0.18 | 55.1 | E | 1/1 | 0.18 | 46.2 | D | 0/1 | 0.21 | 20.8 | C | 1/1 | 0.20 | 52.8 | D | 1/1 | 0.19 | 52.8 | D | 1/1 | 0.21 | 21.0 | C | 1/1 |
| NH Route 9 WB TH/RT | 0.27 | 16.5 | B | 4/6 | 0.43 | 16.5 | B | 7/7 | 0.46 | 3.7 | A | 1/3 | 0.29 | 16.5 | B | 5/6 | 0.46 | 16.5 | B | 7/8 | 0.49 | 3.9 | A | 1/4 |
| **Overall** | **--** | **16.5** | **B** | **--** | **--** | **16.5** | **B** | **--** | **--** | **9.8** | **A** | **--** | **--** | **16.0** | **B** | **--** | **--** | **16.5** | **B** | **--** | **--** | **9.4** | **A** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at the Steeplegate Mall (South Project site) driveway and the Carrier Place driveway*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.05 | 18.1 | B | 0/0 | 0.02 | 21.9 | C | 0/1 | 0.03 | 28.7 | C | 0/1 | 0.05 | 18.3 | B | 0/0 | 0.02 | 22.2 | C | 0/1 | 0.03 | 28.7 | C | 0/1 |
| Carrier Place driveway SEB RT | 0.00 | 15.3 | B | 0/0 | 0.00 | 19.2 | B | 0/0 | 0.00 | 24.7 | C | 0/0 | 0.00 | 15.5 | B | 0/0 | 0.00 | 19.5 | B | 0/0 | 0.00 | 24.7 | C | 0/0 |
| Project site driveway NWB LT/TH | 0.14 | 18.5 | B | 0/1 | 0.50 | 25.3 | C | 2/4 | 0.53 | 33.3 | C | 3/4 | 0.14 | 18.7 | B | 0/1 | 0.50 | 25.7 | C | 2/4 | 0.53 | 33.3 | C | 3/4 |
| Project site driveway NWB RT | 0.00 | 15.4 | B | 0/0 | 0.20 | 7.9 | A | 0/1 | 0.26 | 13.1 | B | 1/2 | 0.00 | 15.6 | B | 0/0 | 0.20 | 8.2 | A | 0/1 | 0.30 | 13.4 | B | 2/2 |
| NH Route 9 EB LT | 0.10 | 18.4 | B | 0/1 | 0.14 | 28.9 | C | 0/1 | 0.12 | 42.4 | D | 1/0 | 0.10 | 18.7 | B | 0/1 | 0.14 | 29.3 | C | 0/1 | 0.12 | 42.4 | D | 1/1 |
| NH Route 9 EB TH/RT | 0.16 | 4.3 | A | 0/2 | 0.27 | 17.6 | B | 2/2 | 0.20 | 6.6 | A | 1/1 | 0.18 | 4.3 | A | 0/2 | 0.30 | 17.6 | B | 2/3 | 0.22 | 6.8 | A | 1/1 |
| NH Route 9 WB LT | 0.01 | 18.1 | B | 0/0 | 0.06 | 16.5 | B | 0/2 | 0.06 | 15.9 | B | 0/0 | 0.01 | 18.3 | B | 0/0 | 0.06 | 16.3 | B | 0/2 | 0.06 | 15.8 | B | 0/0 |
| NH Route 9 WB TH | -- | -- | -- | -- | 0.62 | 18.0 | B | 5/9 | 0.71 | 22.6 | C | 7/10 | -- | -- | -- | -- | 0.62 | 18.5 | B | 5/10 | 0.72 | 22.7 | C | 7/10 |
| NH Route 9 WB TH/RT | 0.18 | 4.4 | A | 0/2 | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | 4.4 | A | 0/2 | -- | -- | -- | -- | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | 0.15 | 5.7 | A | 1/2 | 0.14 | 7.3 | A | 2/3 | -- | --- | -- | -- | 0.16 | 5.7 | A | 1/3 | 0.15 | 6.9 | A | 2/4 |
| **Overall** | **--** | **5.3** | **A** | **--** | **--** | **13.8** | **B** | **--** | **--** | **15.4** | **B** | **--** | **--** | **5.2** | **A** | **--** | **--** | **13.9** | **B** | **--** | **--** | **15.1** | **B** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.39 | 33.7 | C | 1/3 | 0.31 | 30.4 | C | 1/3 | 0.24 | 21.1 | C | 1/2 | 0.39 | 33.7 | C | 1/3 | 0.31 | 30.4 | C | 1/3 | 0.24 | 21.1 | C | 1/2 |
| Carrier Place driveway SEB RT | 0.02 | 24.2 | C | 0/1 | 0.02 | 21.8 | C | 0/1 | 0.02 | 15.0 | B | 0/1 | 0.02 | 24.2 | C | 0/1 | 0.02 | 21.8 | C | 0/1 | 0.02 | 15.0 | B | 0/1 |
| Project site driveway NWB LT/TH | 0.15 | 31.7 | C | 1/2 | 0.56 | 33.9 | C | 3/4 | 0.47 | 22.9 | C | 2/3 | 0.15 | 31.7 | C | 1/2 | 0.56 | 33.9 | C | 3/4 | 0.47 | 22.9 | C | 2/3 |
| Project site driveway NWB RT | 0.01 | 25.6 | C | 0/1 | 0.26 | 17.1 | B | 2/3 | 0.23 | 10.7 | B | 1/2 | 0.01 | 25.6 | C | 0/1 | 0.28 | 17.3 | B | 2/3 | 0.25 | 10.9 | B | 1/3 |
| NH Route 9 EB LT | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.19 | 25.0 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.20 | 33.6 | C | 1/2 | 0.19 | 25.0 | C | 1/2 |
| NH Route 9 EB TH/RT | 0.27 | 6.3 | A | 3/5 | 0.34 | 14.1 | B | 4/7 | 0.44 | 15.5 | B | 4/5 | 0.30 | 6.5 | A | 3/5 | 0.38 | 14.5 | B | 4/8 | 0.48 | 15.9 | B | 4/6 |
| NH Route 9 WB LT | 0.14 | 34.0 | C | 1/1 | 0.08 | 12.1 | B | 0/2 | 0.08 | 12.8 | B | 0/1 | 0.14 | 32.9 | C | 1/1 | 0.08 | 12.1 | B | 0/2 | 0.08 | 12.7 | B | 0/1 |
| NH Route 9 WB TH | -- | -- | -- | -- | 0.61 | 31.7 | C | 5/8 | 0.55 | 27.5 | C | 3/8 | -- | -- | -- | -- | 0.61 | 30.7 | C | 5/8 | 0.56 | 27.7 | C | 3/8 |
| NH Route 9 WB TH/RT | 0.32 | 11.0 | B | 4/7 | -- | -- | -- | -- | -- | -- | -- | -- | 0.36 | 11.3 | B | 4/8 | -- | -- | -- | -- | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | 0.33 | 11.2 | B | 4/8 | 0.38 | 5.6 | A | 2/2 | -- | -- | -- | -- | 0.37 | 11.8 | B | 4/8 | 0.43 | 5.8 | A | 2/2 |
| **Overall** | **--** | **11.9** | **B** | **--** | **--** | **17.6** | **B** | **--** | **--** | **13.8** | **B** | **--** | **--** | **11.8** | **B** | **--** | **--** | **17.5** | **B** | **--** | **--** | **13.8** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Carrier Place driveway SEB LT/TH | 0.41 | 40.9 | D | 1/3 | 0.21 | 29.9 | C | 1/2 | 0.16 | 19.8 | B | 1/2 | 0.41 | 40.9 | D | 1/3 | 0.21 | 29.9 | C | 1/2 | 0.16 | 19.8 | B | 1/2 |
| Carrier Place driveway SEB RT | 0.09 | 30.7 | C | 1/2 | 0.06 | 22.3 | C | 1/1 | 0.03 | 14.1 | B | 0/1 | 0.09 | 30.7 | C | 1/2 | 0.06 | 22.4 | C | 1/1 | 0.04 | 14.1 | B | 0/1 |
| Project site driveway NWB LT/TH | 0.24 | 39.0 | D | 1/2 | 0.65 | 37.3 | D | 4/7 | 0.57 | 23.9 | C | 3/5 | 0.24 | 39.0 | D | 1/2 | 0.65 | 37.3 | D | 4/7 | 0.57 | 23.9 | C | 3/5 |
| Project site driveway NWB RT | 0.02 | 32.0 | C | 0/1 | 0.36 | 16.4 | B | 4/5 | 0.33 | 10.7 | B | 2/4 | 0.03 | 32.1 | C | 0/1 | 0.37 | 16.5 | B | 4/5 | 0.33 | 10.7 | B | 2/4 |
| NH Route 9 EB LT | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 | 0.20 | 45.7 | D | 1/1 | 0.23 | 38.6 | D | 1/2 | 0.23 | 38.6 | D | 1/2 | 0.20 | 45.5 | D | 1/1 |
| NH Route 9 EB TH/RT | 0.34 | 5.4 | A | 4/7 | 0.51 | 20.9 | C | 7/10 | 0.63 | 9.6 | A | 6/8 | 0.38 | 5.7 | A | 5/7 | 0.58 | 21.9 | C | 8/12 | 0.71 | 10.5 | B | 7/8 |
| NH Route 9 WB LT | 0.12 | 42.6 | D | 1/1 | 0.20 | 17.5 | B | 1/4 | 0.17 | 8.1 | A | 1/1 | 0.12 | 42.6 | D | 0/1 | 0.20 | 17.5 | B | 1/4 | 0.18 | 7.6 | A | 1/1 |
| NH Route 9 WB TH | -- | -- | -- | -- | 0.74 | 39.7 | D | 8/10 | 0.75 | 37.1 | D | 5/11 | -- | -- | -- | -- | 0.74 | 39.7 | D | 8/9 | 0.75 | 37.6 | D | 5/11 |
| NH Route 9 WB TH/RT | 0.37 | 5.3 | A | 5/7 | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 | 5.8 | A | 7/8 | -- | -- | -- | -- | -- | -- | -- | -- |
| NH Route 9 WB RT | -- | -- | -- | -- | 0.42 | 8.6 | A | 6/7 | 0.51 | 7.5 | A | 2/3 | -- | -- | -- | -- | 0.47 | 9.1 | A | 7/8 | 0.57 | 8.1 | A | 2/3 |
| **Overall** | **--** | **9.2** | **A** | **--** | **--** | **20.1** | **C** | **--** | **--** | **13.9** | **B** | **--** | **--** | **9.2** | **A** | **--** | **--** | **20.2** | **C** | **--** | **--** | **14.1** | **B** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at D'Amante Drive and Old Loudon Road*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.33 | 18.9 | B | 2/3 | 0.44 | 19.6 | B | 3/5 | 0.50 | 22.0 | C | 2/3 | 0.34 | 18.7 | B | 2/4 | 0.44 | 19.2 | B | 3/5 | 0.52 | 21.9 | C | 2/3 |
| D'Amante Drive NB LT/TH | 0.33 | 18.9 | B | 2/3 | 0.44 | 19.6 | B | 3/5 | 0.50 | 22.0 | C | 2/3 | 0.34 | 18.6 | B | 2/4 | 0.45 | 19.2 | B | 3/5 | 0.53 | 21.9 | C | 3/3 |
| D'Amante Drive NB RT | 0.03 | 12.2 | B | 0/0 | 0.03 | 13.1 | B | 0/0 | 0.03 | 19.0 | B | 0/0 | 0.03 | 12.0 | B | 0/0 | 0.03 | 11.7 | B | 0/0 | 0.03 | 18.9 | B | 0/0 |
| Old Loudon Road SB LT/TH | 0.43 | 26.0 | C | 1/2 | 0.44 | 28.7 | C | 1/2 | 0.44 | 36.9 | D | 1/2 | 0.47 | 27.0 | C | 1/2 | 0.47 | 29.1 | C | 1/2 | 0.46 | 37.1 | D | 1/2 |
| Old Loudon Road SB RT | 0.04 | 16.5 | B | 0/1 | 0.04 | 18.8 | B | 0/1 | 0.04 | 26.3 | C | 0/0 | 0.04 | 16.9 | B | 0/1 | 0.04 | 18.8 | B | 0/1 | 0.04 | 26.1 | C | 0/1 |
| NH Route 9 EB LT | 0.23 | 22.0 | C | 1/2 | 0.25 | 24.4 | C | 1/2 | 0.32 | 34.4 | C | 1/2 | 0.25 | 22.4 | C | 1/2 | 0.27 | 24.5 | C | 1/2 | 0.34 | 34.4 | C | 1/3 |
| NH Route 9 EB TH | 0.24 | 16.0 | B | 2/3 | 0.26 | 16.2 | B | 2/3 | 0.20 | 16.2 | B | 2/4 | 0.26 | 16.5 | B | 2/3 | 0.33 | 18.2 | B | 2/4 | 0.22 | 16.7 | B | 3/4 |
| NH Route 9 EB RT | 0.11 | 7.6 | A | 0/1 | 0.16 | 6.6 | A | 0/1 | 0.17 | 6.5 | A | 0/1 | 0.12 | 7.5 | A | 0/1 | 0.17 | 7.4 | A | 0/1 | 0.18 | 6.6 | A | 0/1 |
| NH Route 9 WB LT | 0.11 | 22.0 | C | 1/1 | 0.17 | 25.8 | C | 1/1 | 0.17 | 40.7 | D | 1/1 | 0.13 | 22.5 | C | 1/1 | 0.14 | 24.4 | C | 1/1 | 0.18 | 40.8 | D | 1/1 |
| NH Route 9 WB TH/RT | 0.33 | 17.2 | B | 2/4 | 0.40 | 18.7 | B | 3/4 | 0.27 | 9.7 | A | 2/3 | 0.37 | 17.9 | B | 2/4 | 0.45 | 19.6 | B | 3/5 | 0.30 | 10.1 | B | 3/4 |
| **Overall** | **--** | **16.4** | **B** | **--** | **--** | **16.9** | **B** | **--** | **--** | **17.1** | **B** | **--** | **--** | **16.7** | **B** | **--** | **--** | **17.5** | **B** | **--** | **--** | **17.3** | **B** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.51 | 23.3 | C | 4/7 | 0.69 | 30.8 | C | 6/10 | 0.68 | 23.0 | C | 4/8 | 0.60 | 28.0 | C | 5/8 | 0.72 | 32.3 | C | 7/12 | 0.73 | 25.1 | C | 5/9 |
| D'Amante Drive NB LT/TH | 0.51 | 23.3 | C | 4/7 | 0.68 | 30.3 | C | 6/10 | 0.67 | 22.5 | C | 4/8 | 0.59 | 27.7 | C | 5/8 | 0.71 | 31.8 | C | 7/11 | 0.72 | 24.6 | C | 5/9 |
| D'Amante Drive NB RT | 0.08 | 14.5 | B | 0/1 | 0.08 | 15.4 | B | 0/1 | 0.08 | 11.9 | B | 0/1 | 0.09 | 15.3 | B | 0/1 | 0.09 | 15.3 | B | 0/1 | 0.09 | 12.1 | B | 0/1 |
| Old Loudon Road SB LT/TH | 0.54 | 34.7 | C | 2/3 | 0.53 | 38.1 | D | 2/3 | 0.46 | 26.5 | C | 1/2 | 0.62 | 42.8 | D | 2/4 | 0.58 | 40.6 | D | 2/3 | 0.50 | 27.4 | C | 1/2 |
| Old Loudon Road SB RT | 0.05 | 21.3 | C | 0/1 | 0.05 | 24.4 | C | 0/1 | 0.04 | 18.5 | B | 0/1 | 0.05 | 23.7 | C | 0/1 | 0.05 | 23.1 | C | 0/1 | 0.05 | 18.8 | B | 0/1 |
| NH Route 9 EB LT | 0.53 | 30.8 | C | 2/5 | 0.57 | 35.6 | D | 3/5 | 0.66 | 32.0 | C | 2/4 | 0.60 | 36.3 | D | 3/5 | 0.50 | 32.4 | C | 3/5 | 0.71 | 35.9 | D | 2/5 |
| NH Route 9 EB TH | 0.49 | 20.3 | C | 5/7 | 0.53 | 21.9 | C | 6/8 | 0.62 | 18.8 | B | 4/6 | 0.52 | 21.5 | C | 6/8 | 0.59 | 23.1 | C | 6/8 | 0.67 | 19.8 | B | 5/7 |
| NH Route 9 EB RT | 0.21 | 7.8 | A | 0/1 | 0.29 | 8.7 | A | 0/2 | 0.28 | 7.4 | A | 0/2 | 0.24 | 8.5 | A | 0/1 | 0.34 | 9.1 | A | 1/2 | 0.33 | 7.7 | A | 1/2 |
| NH Route 9 WB LT | 0.28 | 28.9 | C | 1/2 | 0.24 | 30.5 | C | 1/2 | 0.31 | 23.5 | C | 1/2 | 0.26 | 29.7 | C | 1/2 | 0.27 | 30.9 | C | 1/2 | 0.34 | 23.9 | C | 1/2 |
| NH Route 9 WB TH/RT | 0.55 | 21.5 | C | 5/7 | 0.55 | 21.5 | C | 6/8 | 0.67 | 19.5 | B | 5/7 | 0.53 | 20.8 | C | 6/8 | 0.65 | 25.0 | C | 7/9 | 0.72 | 20.7 | C | 5/7 |
| **Overall** | **--** | **20.3** | **C** | **--** | **--** | **22.3** | **C** | **--** | **--** | **18.4** | **B** | **--** | **--** | **22.0** | **C** | **--** | **--** | **23.7** | **C** | **--** | **--** | **19.6** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive NB LT | 0.71 | 32.1 | C | 7/11 | 0.84 | 41.4 | D | 9/16 | 0.95 | 43.3 | D | 7/14 | 0.79 | 38.3 | D | 8/14 | 0.94 | 59.1 | E | 10/18 | 1.02 | 60.7 | E | 8/15 |
| D'Amante Drive NB LT/TH | 0.70 | 31.8 | C | 7/11 | 0.85 | 42.4 | D | 9/16 | 0.96 | 45.8 | D | 7/14 | 0.78 | 37.5 | D | 8/13 | 0.95 | 61.4 | E | 10/18 | 1.04 | 64.4 | E | 8/15 |
| D'Amante Drive NB RT | 0.09 | 13.9 | B | 0/1 | 0.09 | 14.1 | B | 0/1 | 0.09 | 19.2 | B | 0/1 | 0.10 | 15.1 | B | 0/1 | 0.10 | 15.3 | B | 0/1 | 0.10 | 16.8 | B | 0/1 |
| Old Loudon Road SB LT/TH | 0.86 | >80.0 | F | 2/5 | 0.79 | 66.8 | E | 2/4 | 0.74 | 50.4 | D | 2/4 | 0.78 | 61.2 | E | 3/5 | 0.73 | 55.0 | D | 2/5 | 0.82 | 63.9 | E | 2/4 |
| Old Loudon Road SB RT | 0.07 | 25.5 | C | 0/2 | 0.07 | 26.7 | C | 0/2 | 0.06 | 18.9 | B | 0/1 | 0.10 | 26.0 | C | 1/2 | 0.10 | 26.9 | C | 1/2 | 0.06 | 18.4 | B | 0/1 |
| NH Route 9 EB LT | 1.17 | >80.0 | F | 3/7 | 1.21 | >80.0 | F | 3/7 | 0.94 | >80.0 | F | 2/6 | 1.31 | >80.0 | F | 4/8 | 1.34 | >80.0 | F | 4/8 | 1.02 | >80.0 | F | 3/6 |
| NH Route 9 EB TH | 0.68 | 27.4 | C | 7/10 | 0.75 | 30.2 | C | 8/11 | 0.88 | 36.1 | D | 7/11 | 0.74 | 30.0 | C | 8/11 | 0.81 | 33.1 | C | 9/12 | 0.98 | 49.5 | D | 8/12 |
| NH Route 9 EB RT | 0.32 | 10.1 | B | 1/3 | 0.50 | 11.5 | B | 3/7 | 0.52 | 11.7 | B | 3/6 | 0.39 | 11.1 | B | 2/4 | 0.57 | 13.1 | B | 5/9 | 0.59 | 13.0 | B | 4/8 |
| NH Route 9 WB LT | 0.92 | 76.9 | E | 2/5 | 0.99 | >80.0 | F | 2/5 | 0.77 | 33.5 | C | 2/4 | 1.06 | >80.0 | F | 3/5 | 1.12 | >80.0 | F | 3/5 | 0.85 | 41.7 | D | 2/4 |
| NH Route 9 WB TH/RT | 0.65 | 24.8 | C | 7/10 | 0.75 | 28.1 | C | 9/12 | 0.93 | 36.3 | D | 8/12 | 0.72 | 27.3 | C | 8/11 | 0.81 | 31.0 | C | 10/13 | 1.05 | 61.9 | E | 9/14 |
| **Overall** | **--** | **34.1** | **C** | **--** | **--** | **37.3** | **D** | **--** | **--** | **34.4** | **C** | **--** | **--** | **40.0** | **D** | **--** | **--** | **46.1** | **D** | **--** | **--** | **49.6** | **D** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 9 at NH Route 132 and Canterbury Road*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.34 | 40.3 | D | 1/3 | 0.31 | 44.2 | D | 1/2 | 0.34 | 36.7 | D | 1/2 | 0.32 | 41.8 | D | 1/3 | 0.34 | 44.9 | D | 1/3 | 0.39 | 37.7 | D | 1/2 |
| NH Route 9 EB TH/RT | 0.37 | 21.1 | C | 3/7 | 0.40 | 20.0 | C | 4/8 | 0.41 | 17.1 | B | 3/6 | 0.37 | 20.5 | C | 4/7 | 0.43 | 20.8 | C | 5/9 | 0.44 | 17.4 | B | 4/7 |
| NH Route 9 WB LT | 0.12 | 42.3 | D | 0/1 | 0.22 | 47.2 | D | 1/1 | 0.21 | 37.8 | D | 1/1 | 0.14 | 45.9 | D | 0/1 | 0.21 | 48.1 | D | 1/1 | 0.23 | 38.5 | D | 1/1 |
| NH Route 9 WB TH/RT | 0.61 | 26.6 | C | 7/10 | 0.64 | 25.7 | C | 9/13 | 0.65 | 21.5 | C | 7/10 | 0.63 | 27.6 | C | 8/12 | 0.70 | 27.7 | C | 10/14 | 0.70 | 22.5 | C | 8/11 |
| Canterbury Road NB LT | 0.38 | 33.7 | C | 2/4 | 0.41 | 38.0 | D | 3/4 | 0.54 | 35.3 | D | 2/3 | 0.43 | 37.0 | D | 3/4 | 0.44 | 38.1 | D | 3/4 | 0.62 | 38.8 | D | 3/4 |
| Canterbury Road NB TH/RT | 0.47 | 34.6 | C | 3/4 | 0.52 | 39.5 | D | 3/4 | 0.65 | 42.0 | D | 3/4 | 0.53 | 38.3 | D | 4/5 | 0.55 | 39.9 | D | 4/5 | 0.77 | 50.0 | D | 3/4 |
| NH Route 132 SB LT | 0.38 | 27.5 | C | 3/7 | 0.49 | 33.2 | C | 4/7 | 0.46 | 25.9 | C | 3/6 | 0.46 | 31.9 | C | 4/7 | 0.54 | 24.7 | C | 5/8 | 0.50 | 26.5 | C | 4/6 |
| NH Route 132 SB TH/RT | 0.65 | 32.4 | C | 6/12 | 0.73 | 40.7 | D | 7/12 | 0.68 | 31.0 | C | 5/8 | 0.78 | 42.8 | D | 8/15 | 0.81 | 47.4 | D | 8/15 | 0.75 | 34.3 | C | 6/10 |
| **Overall** | -- | **27.7** | **C** | -- | -- | **29.0** | **C** | -- | -- | **24.5** | **C** | -- | -- | **30.6** | **C** | -- | -- | **31.2** | **C** | -- | -- | **26.3** | **C** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.51 | 47.4 | D | 3/5 | 0.47 | 46.6 | D | 3/5 | 0.98 | >80.0 | F | 3/7 | 0.53 | 47.4 | D | 4/6 | 0.51 | 46.9 | D | 3/5 | 1.10 | >80.0 | F | 4/8 |
| NH Route 9 EB TH/RT | 0.76 | 30.4 | C | 11/17 | 0.93 | 44.4 | D | 19/23 | 0.85 | 35.9 | D | 18/20 | 0.88 | 37.8 | D | 17/21 | 1.01 | 61.0 | E | 22/26 | 0.92 | 43.0 | D | 21/25 |
| NH Route 9 WB LT | 0.29 | 53.4 | D | 1/2 | 0.30 | 50.5 | D | 1/2 | 0.48 | 61.6 | E | 1/3 | 0.26 | 50.9 | D | 1/2 | 0.33 | 51.0 | D | 1/3 | 0.52 | 63.5 | E | 1/3 |
| NH Route 9 WB TH/RT | 0.91 | 46.7 | D | 15/22 | 1.11 | >80.0 | F | 21/28 | 0.90 | 41.7 | D | 19/24 | 1.03 | 73.5 | E | 19/25 | 1.21 | >80.0 | F | 25/32 | 0.98 | 54.0 | D | 21/28 |
| Canterbury Road NB LT | 0.37 | 39.4 | D | 3/6 | 0.36 | 38.5 | D | 3/6 | 0.40 | 44.2 | D | 4/6 | 0.40 | 39.4 | D | 4/6 | 0.40 | 39.2 | D | 3/6 | 0.44 | 44.7 | D | 4/6 |
| Canterbury Road NB TH/RT | 0.90 | 69.0 | E | 8/15 | 0.89 | 66.9 | E | 8/15 | 0.98 | >80.0 | F | 9/17 | 0.99 | >80.0 | F | 10/17 | 1.00 | >80.0 | F | 10/18 | 1.09 | >80.0 | F | 12/19 |
| NH Route 132 SB LT | 0.98 | >80.0 | F | 9/17 | 1.05 | >80.0 | F | 11/19 | 0.98 | >80.0 | F | 11/18 | 1.07 | >80.0 | F | 11/19 | 1.16 | >80.0 | F | 13/21 | 1.07 | >80.0 | F | 13/21 |
| NH Route 132 SB TH/RT | 0.58 | 42.8 | D | 5/9 | 0.57 | 41.8 | D | 5/9 | 0.53 | 43.2 | D | 6/9 | 0.64 | 44.7 | D | 6/10 | 0.64 | 44.5 | D | 6/10 | 0.59 | 44.9 | D | 6/10 |
| **Overall** | -- | **47.1** | **D** | -- | -- | **71.1** | **E** | -- | -- | **52.0** | **D** | -- | -- | **63.3** | **E** | -- | -- | **>80.0** | **F** | -- | -- | **65.2** | **E** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| NH Route 9 EB LT | 0.39 | 46.1 | D | 2/4 | 0.34 | 45.3 | D | 2/3 | 0.50 | 48.7 | D | 2/3 | 0.42 | 46.6 | D | 2/4 | 0.37 | 45.8 | D | 2/3 | 0.56 | 51.9 | D | 2/3 |
| NH Route 9 EB TH/RT | 0.83 | 34.8 | C | 14/19 | 1.10 | >80.0 | F | 20/27 | 0.84 | 29.5 | C | 15/18 | 0.92 | 43.3 | D | 16/22 | 1.19 | >80.0 | F | 23/30 | 0.91 | 35.0 | D | 17/23 |
| NH Route 9 WB LT | 0.28 | 47.9 | D | 1/2 | 0.32 | 45.3 | D | 1/3 | 0.46 | 48.3 | D | 1/3 | 0.31 | 48.5 | D | 1/2 | 0.33 | 45.8 | D | 2/3 | 0.49 | 48.8 | D | 1/3 |
| NH Route 9 WB TH/RT | 1.16 | >80.0 | F | 24/30 | 1.42 | >80.0 | F | 32/38 | 1.09 | 79.5 | E | 25/31 | 1.29 | >80.0 | F | 28/35 | 1.56 | >80.0 | F | 36/43 | 1.18 | >80.0 | F | 29/35 |
| Canterbury Road NB LT | 0.51 | 38.2 | D | 4/5 | 0.49 | 36.9 | D | 4/5 | 0.72 | 51.0 | D | 5/5 | 0.54 | 38.9 | D | 5/6 | 0.53 | 37.8 | D | 5/5 | 0.80 | 58.6 | E | 5/6 |
| Canterbury Road NB TH/RT | 0.70 | 45.0 | D | 6/7 | 0.70 | 44.0 | D | 6/7 | 1.03 | >80.0 | F | 7/8 | 0.76 | 48.1 | D | 7/7 | 0.77 | 47.8 | D | 7/8 | 1.15 | >80.0 | F | 9/9 |
| NH Route 132 SB LT | 0.85 | 57.2 | E | 8/15 | 1.00 | >80.0 | F | 10/18 | 1.06 | >80.0 | F | 11/18 | 0.96 | 78.7 | E | 9/17 | 1.10 | >80.0 | F | 12/21 | 1.16 | >80.0 | F | 12/20 |
| NH Route 132 SB TH/RT | 0.36 | 35.6 | D | 3/6 | 0.36 | 34.8 | C | 3/6 | 0.37 | 34.7 | C | 3/5 | 0.41 | 36.8 | D | 4/7 | 0.41 | 35.9 | D | 4/7 | 0.42 | 35.2 | D | 3/6 |
| **Overall** | -- | **70.6** | **E** | -- | -- | **>80.0** | **F** | -- | -- | **64.5** | **E** | -- | -- | **>80.0** | **F** | -- | -- | **>80.0** | **F** | -- | -- | **>80.0** | **F** | -- |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at the Steeplegate Mall (Project site) driveway*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | | | | | 0.62 | 23.1 | C | 3/5 | 0.63 | 29.9 | C | 3/5 | | | | | 0.65 | 25.1 | C | 3/5 | 0.66 | 31.6 | C | 4/6 |
| Steeplegate Mall driveway EB RT | | | | | 0.15 | 18.3 | B | 0/2 | 0.15 | 24.0 | C | 0/2 | | | | | 0.15 | 19.2 | B | 0/2 | 0.15 | 24.5 | C | 0/2 |
| NH Route 106 NB LT | | | | | 0.31 | 6.3 | A | 1/1 | 0.28 | 4.8 | A | 1/1 | | | | | 0.35 | 7.3 | A | 1/1 | 0.31 | 6.7 | A | 1/1 |
| NH Route 106 NB TH | | | | | 0.32 | 4.1 | A | 2/3 | 0.31 | 3.3 | A | 2/2 | | | | | 0.36 | 4.1 | A | 2/3 | 0.34 | 3.3 | A | 2/2 |
| NH Route 106 SB TH | | | | | 0.72 | 14.1 | B | 6/10 | 0.64 | 14.2 | B | 9/11 | | | | | 0.78 | 15.7 | B | 8/12 | 0.69 | 14.9 | B | 9/13 |
| NH Route 106 SB RT | | | | | 0.13 | 7.8 | A | 0/1 | 0.13 | 8.2 | A | 0/1 | | | | | 0.13 | 7.6 | A | 0/1 | 0.13 | 7.6 | A | 0/1 |
| **Overall** | | | | | -- | **12.5** | **B** | -- | -- | **13.9** | **B** | -- | | | | | -- | **13.3** | **B** | -- | -- | **14.3** | **B** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | *See Unsignalized Intersection Level-of-Service and Vehicle Queue Summary (Table 14)* | | | | 0.60 | 27.1 | C | 3/5 | 0.76 | 38.7 | D | 3/7 | *See Unsignalized Intersection Level-of-Service and Vehicle Queue Summary (Table 14)* | | | | 0.60 | 27.1 | C | 3/5 | 0.83 | 47.7 | D | 3/7 |
| Steeplegate Mall driveway EB RT | | | | | 0.08 | 22.0 | C | 0/2 | 0.08 | 23.3 | C | 0/2 | | | | | 0.08 | 22.0 | C | 0/2 | 0.08 | 23.8 | C | 0/2 |
| NH Route 106 NB LT | | | | | 0.43 | 8.0 | A | 1/1 | 0.40 | 7.6 | A | 1/1 | | | | | 0.50 | 10.3 | B | 1/2 | 0.44 | 10.0 | A | 1/1 |
| NH Route 106 NB TH | | | | | 0.98 | 27.3 | C | 14/28 | 0.93 | 13.2 | B | 11/17 | | | | | 1.03 | 42.1 | D | 23/30 | 0.97 | 11.2 | B | 14/16 |
| NH Route 106 SB TH | | | | | 0.76 | 14.9 | B | 8/14 | 0.70 | 13.0 | B | 7/12 | | | | | 0.84 | 18.5 | B | 10/19 | 0.76 | 14.4 | B | 8/15 |
| NH Route 106 SB RT | | | | | 0.10 | 7.3 | A | 0/1 | 0.10 | 6.0 | A | 0/1 | | | | | 0.10 | 7.3 | A | 0/1 | 0.10 | 5.8 | A | 0/1 |
| **Overall** | | | | | -- | **21.2** | **C** | -- | -- | **14.6** | **B** | -- | | | | | -- | **29.6** | **C** | -- | -- | **14.6** | **B** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Steeplegate Mall driveway EB LT | | | | | 0.76 | 33.1 | C | 4/8 | 0.67 | 35.6 | D | 4/10 | | | | | 0.79 | 36.3 | D | 4/8 | 0.74 | 40.5 | D | 5/10 |
| Steeplegate Mall driveway EB RT | | | | | 0.08 | 14.8 | B | 0/2 | 0.09 | 20.5 | C | 0/2 | | | | | 0.10 | 15.6 | B | 0/2 | 0.08 | 21.4 | C | 0/2 |
| NH Route 106 NB LT | | | | | 0.50 | 8.9 | A | 1/2 | 0.46 | 10.8 | B | 1/1 | | | | | 0.54 | 10.9 | B | 1/3 | 0.50 | 13.4 | B | 1/1 |
| NH Route 106 NB TH | | | | | 0.75 | 7.8 | A | 7/13 | 0.73 | 8.3 | A | 8/11 | | | | | 0.81 | 9.7 | A | 8/15 | 0.78 | 9.8 | A | 8/15 |
| NH Route 106 SB TH | | | | | 0.79 | 15.9 | B | 9/18 | 0.71 | 17.2 | B | 11/14 | | | | | 0.84 | 18.6 | B | 9/18 | 0.76 | 17.9 | B | 11/16 |
| NH Route 106 SB RT | | | | | 0.14 | 7.6 | A | 0/1 | 0.14 | 8.9 | A | 0/1 | | | | | 0.14 | 7.4 | A | 0/1 | 0.14 | 8.3 | A | 0/1 |
| **Overall** | | | | | -- | **13.0** | **B** | -- | -- | **14.4** | **B** | -- | | | | | -- | **14.9** | **B** | -- | -- | **15.7** | **B** | -- |
| ***NH Route 106 at D'Amante Drive*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.31 | 15.5 | B | 1/3 | 0.35 | 15.7 | B | 2/4 | 0.46 | 26.2 | C | 3/4 | 0.35 | 16.9 | B | 1/3 | 0.39 | 17.1 | B | 2/4 | 0.50 | 26.3 | C | 3/4 |
| D'Amante Drive EB RT | 0.05 | 14.2 | B | 0/1 | 0.08 | 14.2 | B | 0/1 | 0.08 | 23.3 | C | 0/1 | 0.06 | 15.3 | B | 0/1 | 0.08 | 15.3 | B | 0/1 | 0.08 | 23.2 | C | 0/1 |
| NH Route 106 NB LT | 0.14 | 3.8 | A | 1/1 | 0.29 | 5.6 | A | 1/2 | 0.22 | 5.0 | A | 1/2 | 0.17 | 3.9 | A | 1/1 | 0.34 | 6.0 | A | 1/2 | 0.26 | 5.6 | A | 1/2 |
| NH Route 106 NB TH | 0.31 | 4.2 | A | 2/3 | 0.35 | 5.5 | A | 2/4 | 0.30 | 4.7 | A | 2/4 | 0.33 | 4.3 | A | 2/4 | 0.38 | 5.7 | A | 2/5 | 0.33 | 5.0 | A | 3/5 |
| NH Route 106 SB TH | 0.53 | 5.4 | A | 3/7 | 0.61 | 7.7 | A | 4/9 | 0.52 | 4.0 | A | 3/3 | 0.58 | 5.8 | A | 4/8 | 0.66 | 8.4 | A | 5/11 | 0.57 | 4.2 | A | 3/3 |
| NH Route 106 SB RT | 0.08 | 3.5 | A | 0/1 | 0.11 | 4.6 | A | 0/1 | 0.11 | 1.1 | A | 0/0 | 0.08 | 3.5 | A | 0/1 | 0.12 | 4.6 | A | 0/1 | 0.12 | 0.9 | A | 0/0 |
| **Overall** | -- | **6.2** | **A** | -- | -- | **8.0** | **A** | -- | -- | **7.6** | **A** | -- | -- | **6.6** | **A** | -- | -- | **8.5** | **A** | -- | -- | **7.7** | **A** | -- |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.62 | 25.1 | C | 4/7 | 0.75 | 27.6 | C | 7/11 | 0.87 | 33.9 | C | 7/12 | 0.65 | 25.3 | C | 5/8 | 0.77 | 28.6 | C | 8/12 | 0.92 | 41.0 | D | 7/13 |
| D'Amante Drive EB RT | 0.06 | 19.1 | B | 0/1 | 0.08 | 17.3 | B | 0/2 | 0.08 | 11.7 | B | 0/1 | 0.06 | 18.6 | B | 0/1 | 0.08 | 17.1 | B | 0/2 | 0.08 | 10.7 | B | 0/1 |
| NH Route 106 NB LT | 0.45 | 7.8 | A | 2/4 | 0.66 | 16.4 | B | 3/8 | 0.60 | 15.1 | B | 2/4 | 0.58 | 10.6 | B | 2/6 | 0.87 | 38.5 | D | 4/10 | 0.74 | 23.8 | C | 2/7 |
| NH Route 106 NB TH | 0.84 | 15.9 | B | 12/24 | 0.97 | 37.3 | D | 18/30 | 0.94 | 27.7 | C | 12/21 | 0.94 | 27.8 | C | 15/29 | 1.09 | 70.9 | E | 25/34 | 1.03 | 48.7 | D | 16/24 |
| NH Route 106 SB TH | 0.50 | 7.7 | A | 5/10 | 0.60 | 11.7 | B | 7/13 | 0.58 | 6.7 | A | 2/5 | 0.56 | 8.9 | A | 6/12 | 0.66 | 13.6 | B | 9/15 | 0.63 | 7.5 | A | 3/6 |
| NH Route 106 SB RT | 0.12 | 5.5 | A | 0/1 | 0.16 | 7.9 | A | 0/2 | 0.16 | 5.8 | A | 0/1 | 0.13 | 6.0 | A | 0/1 | 0.17 | 8.4 | A | 0/2 | 0.17 | 7.6 | A | 0/1 |
| **Overall** | -- | **13.7** | **B** | -- | -- | **24.5** | **C** | -- | -- | **20.0** | **B** | -- | -- | **19.3** | **B** | -- | -- | **40.0** | **D** | -- | -- | **30.4** | **C** | -- |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | 0.55 | 15.9 | B | 4/8 | 0.73 | 23.2 | C | 8/12 | 0.80 | 32.0 | C | 8/12 | 0.60 | 18.2 | B | 5/9 | 0.80 | 29.3 | C | 9/13 | 0.83 | 33.6 | C | 9/13 |
| D'Amante Drive EB RT | 0.10 | 12.6 | B | 0/2 | 0.15 | 14.7 | B | 0/2 | 0.15 | 18.7 | B | 0/2 | 0.11 | 13.7 | B | 0/2 | 0.16 | 16.7 | B | 0/2 | 0.15 | 18.1 | B | 0/2 |
| NH Route 106 NB LT | 0.49 | 9.7 | A | 2/5 | 0.77 | 23.8 | C | 4/10 | 0.67 | 21.1 | C | 4/9 | 0.58 | 11.9 | B | 2/6 | 0.86 | 35.9 | D | 5/11 | 0.82 | 33.5 | C | 5/11 |
| NH Route 106 NB TH | 0.69 | 12.1 | B | 6/13 | 0.77 | 17.3 | B | 11/18 | 0.71 | 16.6 | B | 11/17 | 0.74 | 14.2 | B | 8/17 | 0.81 | 19.7 | B | 14/23 | 0.79 | 20.2 | C | 13/20 |
| NH Route 106 SB TH | 0.45 | 8.8 | A | 3/8 | 0.53 | 11.7 | B | 6/10 | 0.49 | 5.1 | A | 1/3 | 0.49 | 9.6 | A | 4/9 | 0.55 | 12.5 | B | 7/11 | 0.54 | 5.6 | A | 2/4 |
| NH Route 106 SB RT | 0.17 | 7.2 | A | 0/2 | 0.25 | 9.4 | A | 0/2 | 0.25 | 1.1 | A | 0/0 | 0.19 | 7.7 | A | 0/2 | 0.26 | 9.8 | A | 0/2 | 0.26 | 1.2 | A | 0/0 |
| **Overall** | -- | **11.2** | **B** | -- | -- | **16.5** | **B** | -- | -- | **15.4** | **B** | -- | -- | **12.8** | **B** | -- | -- | **19.9** | **B** | -- | -- | **18.0** | **B** | -- |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***NH Route 106 at Pembroke Road and North Pembroke Road*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 0.34 | 45.5 | D | 1/2 | 0.34 | 43.8 | D | 1/3 | 0.49 | 40.6 | D | 1/2 | 0.36 | 45.7 | D | 1/3 | 0.37 | 44.2 | D | 2/3 | 0.54 | 43.3 | D | 1/3 |
| Pembroke Road EB TH/RT | 0.16 | 37.2 | D | 1/2 | 0.16 | 37.0 | D | 1/2 | 0.18 | 33.1 | C | 1/2 | 0.17 | 36.8 | D | 1/2 | 0.17 | 36.6 | D | 1/2 | 0.20 | 34.2 | C | 1/2 |
| North Pembroke Road WB LT | 0.41 | 44.2 | D | 2/3 | 0.40 | 44.1 | D | 2/3 | 0.51 | 39.5 | D | 2/3 | 0.45 | 44.6 | D | 2/3 | 0.45 | 44.6 | D | 2/3 | 0.57 | 43.3 | D | 2/3 |
| North Pembroke Road WB TH/RT | 0.51 | 39.4 | D | 3/5 | 0.57 | 42.5 | D | 3/5 | 0.65 | 42.1 | D | 3/5 | 0.55 | 40.1 | D | 3/5 | 0.61 | 43.3 | D | 4/5 | 0.75 | 51.7 | D | 3/5 |
| NH Route 106 NB LT | 0.31 | 17.4 | B | 1/2 | 0.32 | 21.0 | C | 1/2 | 0.33 | 16.2 | B | 1/1 | 0.34 | 21.0 | C | 1/2 | 0.35 | 21.2 | C | 1/2 | 0.36 | 18.4 | B | 1/1 |
| NH Route 106 NB TH | 0.47 | 14.2 | B | 8/11 | 0.55 | 15.5 | B | 10/13 | 0.53 | 11.7 | B | 7/9 | 0.52 | 15.3 | B | 9/13 | 0.60 | 17.2 | B | 11/15 | 0.56 | 12.1 | B | 8/10 |
| NH Route 106 NB RT | 0.02 | 10.4 | B | 0/0 | 0.02 | 10.6 | B | 0/0 | 0.02 | 8.0 | A | 0/0 | 0.02 | 10.8 | B | 0/0 | 0.02 | 11.0 | B | 0/0 | 0.02 | 7.9 | A | 0/0 |
| NH Route 106 SB LT | 0.09 | 9.5 | A | 1/1 | 0.11 | 10.0 | A | 1/1 | 0.11 | 7.2 | A | 1/1 | 0.11 | 10.2 | B | 1/1 | 0.14 | 10.9 | B | 1/1 | 0.13 | 7.5 | A | 1/1 |
| NH Route 106 SB TH | 0.88 | 30.1 | C | 20/34 | 0.98 | 46.6 | D | 27/40 | 0.93 | 30.9 | C | 17/28 | 0.98 | 48.7 | D | 27/39 | 1.09 | >80.0 | F | 32/45 | 1.00 | 46.0 | D | 23/32 |
| NH Route 106 SB RT | 0.08 | 12.0 | B | 0/1 | 0.09 | 12.0 | B | 0/2 | 0.09 | 8.8 | A | 0/1 | 0.09 | 12.5 | B | 0/2 | 0.10 | 12.6 | B | 0/2 | 0.10 | 8.7 | A | 0/1 |
| **Overall** | **--** | **26.0** | **C** | **--** | **--** | **33.6** | **C** | **--** | **--** | **24.9** | **C** | **--** | **--** | **34.5** | **C** | **--** | **--** | **48.9** | **D** | **--** | **--** | **32.6** | **C** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 1.13 | >80.0 | F | 7/13 | 1.17 | >80.0 | F | 8/14 | 0.88 | 69.0 | E | 7/11 | 1.26 | >80.0 | F | 9/15 | 1.30 | >80.0 | F | 9/15 | 0.99 | >80.0 | F | 8/13 |
| Pembroke Road EB TH/RT | 0.41 | 34.6 | C | 3/6 | 0.41 | 34.7 | C | 3/6 | 0.42 | 38.6 | D | 4/6 | 0.45 | 35.1 | D | 4/6 | 0.45 | 35.2 | D | 4/6 | 0.49 | 41.6 | D | 4/7 |
| North Pembroke Road WB LT | 0.28 | 45.2 | D | 1/2 | 0.28 | 45.3 | D | 1/2 | 0.43 | 54.9 | D | 1/2 | 0.32 | 46.1 | D | 1/2 | 0.32 | 46.1 | D | 1/2 | 0.51 | 58.4 | E | 1/2 |
| North Pembroke Road WB TH/RT | 0.31 | 37.8 | D | 2/3 | 0.31 | 37.9 | D | 2/3 | 0.57 | 53.8 | D | 2/4 | 0.35 | 38.2 | D | 2/3 | 0.36 | 38.3 | D | 2/3 | 0.72 | 69.2 | E | 3/5 |
| NH Route 106 NB LT | 0.26 | 15.3 | B | 1/2 | 0.34 | 18.7 | B | 1/2 | 0.30 | 16.0 | B | 1/2 | 0.36 | 18.5 | B | 1/2 | 0.37 | 21.4 | C | 1/2 | 0.37 | 18.8 | B | 1/2 |
| NH Route 106 NB TH | 1.07 | 77.8 | E | 27/42 | 1.15 | >80.0 | F | 30/46 | 1.00 | 51.6 | D | 27/40 | 1.20 | >80.0 | F | 33/48 | 1.27 | >80.0 | F | 36/52 | 1.08 | 77.4 | E | 36/46 |
| NH Route 106 NB RT | 0.04 | 13.7 | B | 0/0 | 0.04 | 13.7 | B | 0/0 | 0.04 | 11.3 | B | 0/0 | 0.04 | 14.1 | B | 0/0 | 0.04 | 14.2 | B | 0/0 | 0.04 | 11.5 | B | 0/0 |
| NH Route 106 SB LT | 0.37 | 21.1 | C | 1/2 | 0.39 | 21.2 | C | 1/2 | 0.53 | 27.5 | C | 1/3 | 0.40 | 21.5 | C | 1/2 | 0.42 | 21.6 | C | 1/3 | 0.54 | 28.5 | C | 1/3 |
| NH Route 106 SB TH | 0.79 | 26.1 | C | 14/26 | 0.89 | 34.6 | C | 17/32 | 0.78 | 23.3 | C | 17/23 | 0.88 | 33.3 | C | 17/31 | 0.98 | 51.5 | D | 21/36 | 0.83 | 25.7 | C | 19/27 |
| NH Route 106 SB RT | 0.09 | 14.0 | B | 0/1 | 0.10 | 14.1 | B | 0/2 | 0.10 | 11.8 | B | 0/1 | 0.10 | 14.5 | B | 0/2 | 0.12 | 14.7 | B | 1/2 | 0.11 | 11.5 | B | 0/1 |
| **Overall** | **--** | **56.4** | **E** | **--** | **--** | **69.6** | **E** | **--** | **--** | **39.7** | **D** | **--** | **--** | **>80.0** | **F** | **--** | **--** | **>80.0** | **F** | **--** | **--** | **53.6** | **D** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Pembroke Road EB LT | 0.66 | 43.7 | D | 4/6 | 0.83 | 63.7 | E | 5/8 | 0.73 | 45.0 | D | 4/6 | 0.76 | 53.7 | D | 4/7 | 0.90 | 77.2 | E | 5/9 | 0.80 | 51.2 | D | 4/7 |
| Pembroke Road EB TH/RT | 0.11 | 28.2 | C | 1/2 | 0.12 | 31.2 | C | 1/2 | 0.12 | 26.5 | C | 1/2 | 0.13 | 30.4 | C | 1/2 | 0.12 | 29.1 | C | 1/2 | 0.13 | 27.0 | C | 1/2 |
| North Pembroke Road WB LT | 0.14 | 43.7 | D | 0/1 | 0.15 | 47.1 | D | 0/1 | 0.14 | 40.0 | D | 0/1 | 0.16 | 46.3 | D | 1/1 | 0.17 | 47.4 | D | 1/1 | 0.16 | 40.8 | D | 0/1 |
| North Pembroke Road WB TH/RT | 0.19 | 36.1 | D | 1/3 | 0.20 | 39.1 | D | 1/3 | 0.22 | 34.4 | C | 1/3 | 0.22 | 38.4 | D | 1/3 | 0.19 | 36.7 | D | 1/3 | 0.25 | 35.2 | D | 1/3 |
| NH Route 106 NB LT | 0.16 | 12.7 | B | 1/1 | 0.21 | 15.7 | B | 1/1 | 0.24 | 15.4 | B | 1/1 | 0.19 | 14.1 | B | 1/1 | 0.25 | 20.4 | C | 1/1 | 0.27 | 7.7 | B | 1/1 |
| NH Route 106 NB TH | 0.80 | 24.7 | C | 14/22 | 0.89 | 31.9 | C | 18/31 | 0.94 | 37.4 | D | 16/26 | 0.85 | 27.7 | C | 16/28 | 1.03 | 62.8 | E | 21/35 | 1.01 | 54.2 | D | 21/29 |
| NH Route 106 NB RT | 0.01 | 12.1 | B | 0/0 | 0.01 | 11.6 | B | 0/0 | 0.01 | 11.0 | B | 0/0 | 0.01 | 11.9 | D | 0/0 | 0.01 | 13.2 | B | 0/0 | 0.01 | 11.0 | B | 0/0 |
| NH Route 106 SB LT | 0.22 | 14.1 | B | 1/1 | 0.31 | 18.7 | B | 1/2 | 0.31 | 17.5 | B | 1/1 | 0.27 | 16.5 | D | 1/2 | 0.33 | 20.7 | C | 1/2 | 0.33 | 18.1 | B | 1/1 |
| NH Route 106 SB TH | 0.73 | 20.6 | C | 12/20 | 0.83 | 25.1 | C | 16/29 | 0.88 | 28.2 | C | 15/24 | 0.79 | 24.1 | C | 14/25 | 0.98 | 48.4 | D | 19/33 | 0.94 | 37.0 | D | 17/27 |
| NH Route 106 SB RT | 0.08 | 11.8 | B | 0/1 | 0.10 | 11.5 | B | 0/2 | 0.10 | 11.1 | B | 0/1 | 0.09 | 12.3 | B | 0/1 | 0.11 | 13.8 | B | 0/2 | 0.10 | 11.1 | B | 0/1 |
| **Overall** | **--** | **24.2** | **C** | **--** | **--** | **30.2** | **C** | **--** | **--** | **31.4** | **C** | **--** | **--** | **27.5** | **C** | **--** | **--** | **50.8** | **D** | **--** | **--** | **41.2** | **D** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***D'Amante Drive at the West Steeplegate Mall (West Project site) driveway and the Shaw's driveway*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.03 | 14.2 | B | 0/0 | 0.03 | 17.0 | B | 0/1 | 0.03 | 31.5 | C | 0/0 | 0.03 | 14.3 | B | 0/0 | 0.03 | 17.1 | B | 0/1 | 0.03 | 31.5 | C | 0/0 |
| Steeplegate Mall driveway WB LT/TH | 0.00 | 0.0 | A | 0/0 | 0.26 | 18.2 | B | 1/2 | 0.30 | 33.5 | C | 1/2 | 0.00 | 0.0 | A | 0/0 | 0.25 | 18.3 | B | 1/1 | 0.30 | 33.5 | C | 1/2 |
| Steeplegate Mall driveway WB RT | 0.00 | 11.7 | B | 0/0 | 0.03 | 8.9 | A | 0/1 | 0.03 | 21.7 | C | 0/1 | 0.00 | 11.7 | B | 0/0 | 0.03 | 9.0 | A | 0/1 | 0.03 | 21.7 | C | 0/1 |
| D'Amante Drive NB LT | 0.06 | 16.4 | B | 0/1 | 0.07 | 19.9 | B | 0/1 | 0.11 | 44.5 | D | 0/1 | 0.06 | 16.5 | B | 0/1 | 0.07 | 20.1 | C | 0/1 | 0.11 | 44.0 | D | 0/1 |
| D'Amante Drive NB TH/RT | 0.15 | 5.8 | A | 1/2 | 0.23 | 10.1 | B | 1/2 | 0.14 | 6.9 | A | 1/2 | 0.17 | 5.9 | A | 1/2 | 0.24 | 10.2 | B | 1/2 | 0.15 | 6.9 | A | 2/2 |
| D'Amante Drive SB LT | 0.07 | 16.3 | B | 0/1 | 0.03 | 9.4 | A | 0/1 | 0.03 | 7.2 | A | 0/0 | 0.07 | 16.4 | B | 0/1 | 0.03 | 9.4 | A | 0/1 | 0.03 | 7.2 | A | 0/0 |
| D'Amante Drive SB TH | -- | -- | -- | -- | 0.10 | 13.3 | B | 1/1 | 0.15 | 25.5 | C | 1/2 | -- | -- | -- | -- | 0.10 | 13.5 | B | 1/1 | 0.15 | 25.0 | C | 1/2 |
| D'Amante Drive SB TH/RT | 0.16 | 5.8 | A | 1/2 | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 | 5.8 | A | 1/2 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | 0.15 | 5.4 | A | 1/2 | 0.12 | 3.8 | A | 1/2 | -- | -- | -- | -- | 0.17 | 5.4 | A | 1/2 | 0.13 | 3.7 | A | 1/2 |
| **Overall** | **--** | **7.6** | **A** | **--** | **--** | **9.9** | **A** | **--** | **--** | **12.6** | **B** | **--** | **--** | **7.4** | **A** | **--** | **--** | **9.9** | **A** | **--** | **--** | **12.1** | **B** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.31 | 31.9 | C | 1/2 | 0.06 | 28.0 | C | 0/1 | 0.06 | 21.7 | C | 0/0 | 0.31 | 31.9 | C | 1/2 | 0.06 | 29.8 | C | 0/1 | 0.06 | 21.7 | C | 0/0 |
| Steeplegate Mall driveway WB LT/TH | 0.10 | 30.7 | C | 1/1 | 0.46 | 31.6 | C | 2/4 | 0.31 | 23.4 | C | 1/2 | 0.10 | 30.7 | C | 1/1 | 0.34 | 32.2 | C | 1/3 | 0.31 | 23.4 | C | 1/2 |
| Steeplegate Mall driveway WB RT | 0.03 | 20.6 | C | 0/0 | 0.05 | 18.8 | B | 0/1 | 0.05 | 14.5 | B | 0/1 | 0.03 | 20.7 | C | 0/0 | 0.05 | 20.2 | C | 0/1 | 0.05 | 14.5 | B | 0/1 |
| D'Amante Drive NB LT | 0.29 | 38.8 | D | 1/2 | 0.29 | 38.7 | D | 1/2 | 0.23 | 21.0 | C | 1/2 | 0.29 | 39.9 | D | 1/2 | 0.29 | 39.6 | D | 1/2 | 0.23 | 21.0 | C | 1/2 |
| D'Amante Drive NB TH/RT | 0.23 | 6.0 | A | 2/3 | 0.26 | 11.7 | B | 2/6 | 0.28 | 9.8 | A | 3/4 | 0.26 | 6.1 | A | 2/3 | 0.27 | 10.8 | B | 2/6 | 0.31 | 9.9 | A | 3/5 |
| D'Amante Drive SB LT | 0.09 | 29.2 | C | 1/1 | 0.05 | 32.0 | C | 0/1 | 0.03 | 8.1 | A | 0/0 | 0.09 | 29.3 | C | 1/1 | 0.03 | 8.2 | A | 0/1 | 0.03 | 8.0 | A | 0/1 |
| D'Amante Drive SB TH | -- | -- | -- | -- | 0.20 | 29.8 | C | 1/2 | 0.19 | 22.2 | C | 1/2 | -- | -- | -- | -- | 0.20 | 29.6 | C | 1/2 | 0.20 | 22.3 | C | 1/2 |
| D'Amante Drive SB TH/RT | 0.21 | 6.6 | A | 2/4 | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 | 6.8 | A | 3/4 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | 0.25 | 8.2 | A | 3/5 | 0.28 | 8.1 | A | 2/4 | -- | -- | -- | -- | 0.27 | 7.3 | A | 3/5 | 0.31 | 8.3 | A | 3/5 |
| **Overall** | **--** | **12.8** | **B** | **--** | **--** | **16.8** | **B** | **--** | **--** | **12.4** | **B** | **--** | **--** | **12.2** | **B** | **--** | **--** | **14.7** | **B** | **--** | **--** | **12.2** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Shaw's driveway EB LT/TH/RT | 0.37 | 36.6 | D | 2/2 | 0.07 | 33.1 | C | 0/1 | 0.07 | 14.6 | B | 0/0 | 0.37 | 36.6 | D | 2/2 | 0.07 | 33.1 | C | 0/1 | 0.07 | 14.7 | B | 0/0 |
| Steeplegate Mall driveway WB LT/TH | 0.10 | 34.9 | C | 1/1 | 0.46 | 37.0 | D | 2/4 | 0.39 | 25.2 | C | 1/3 | 0.10 | 34.9 | C | 1/1 | 0.46 | 37.0 | D | 2/4 | 0.39 | 25.2 | C | 1/3 |
| Steeplegate Mall driveway WB RT | 0.02 | 24.7 | C | 0/0 | 0.10 | 18.4 | B | 1/2 | 0.07 | 11.0 | B | 0/1 | 0.02 | 24.9 | C | 0/0 | 0.10 | 18.2 | B | 1/2 | 0.07 | 10.9 | B | 0/1 |
| D'Amante Drive NB LT | 0.34 | 40.5 | D | 1/3 | 0.34 | 40.9 | D | 1/3 | 0.35 | 27.8 | C | 1/2 | 0.34 | 41.0 | D | 1/2 | 0.34 | 41.2 | D | 1/3 | 0.35 | 27.4 | C | 1/2 |
| D'Amante Drive NB TH/RT | 0.33 | 7.6 | A | 3/5 | 0.44 | 15.6 | B | 5/9 | 0.56 | 17.7 | B | 5/8 | 0.37 | 7.9 | A | 4/7 | 0.49 | 16.9 | B | 6/10 | 0.63 | 18.9 | B | 6/9 |
| D'Amante Drive SB LT | 0.27 | 35.9 | D | 1/1 | 0.05 | 20.9 | C | 0/1 | 0.05 | 31.0 | B | 0/1 | 0.30 | 36.4 | D | 1/1 | 0.05 | 22.5 | C | 0/1 | 0.05 | 21.8 | C | 0/1 |
| D'Amante Drive SB TH | -- | -- | -- | -- | 0.56 | 33.5 | C | 2/3 | 0.49 | 23.4 | C | 2/2 | -- | -- | -- | -- | 0.60 | 34.7 | C | 2/3 | 0.53 | 23.3 | C | 2/2 |
| D'Amante Drive SB TH/RT | 0.27 | 6.8 | A | 3/5 | -- | -- | -- | -- | -- | -- | -- | -- | 0.30 | 7.0 | A | 4/6 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive SB RT | -- | -- | -- | -- | 0.32 | 7.9 | A | 4/7 | 0.36 | 8.7 | A | 4/5 | -- | -- | -- | -- | 0.35 | 8.2 | A | 4/7 | 0.39 | 8.6 | A | 5/5 |
| **Overall** | **--** | **13.1** | **B** | **--** | **--** | **17.7** | **B** | **--** | **--** | **15.5** | **B** | **--** | **--** | **12.9** | **B** | **--** | **--** | **18.1** | **B** | **--** | **--** | **15.7** | **B** | **--** |

See notes at end of table.

**Table 16 (Continued)**
**MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/Peak-Hour/Movement | 2025 No-Build | | | | 2025 Opening Year | | | | 2025 Opening Year with Mitigation | | | | 2035 No-Build | | | | 2035 Build | | | | 2035 Build with Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V/C[a] | Delay[b] | LOS[c] | Queue[d] 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th | V/C | Delay | LOS | Queue 50th/95th |
| ***D'Amante Drive at Triangle Park Drive*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Weekday Morning:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT | -- | -- | -- | -- | 0.11 | 10.5 | B | 1/1 | 0.05 | 6.3 | A | 1/1 | -- | -- | -- | -- | 0.11 | 10.4 | B | 1/1 | 0.05 | 6.6 | A | 1/1 |
| D'Amante Drive EB TH/RT | 0.15 | 7.3 | A | 1/2 | 0.25 | 10.9 | B | 1/2 | 0.14 | 6.8 | A | 1/1 | 0.17 | 7.4 | A | 1/2 | 0.27 | 11.0 | B | 1/2 | 0.15 | 7.1 | A | 1/1 |
| D'Amante Drive WB LT | 0.23 | 16.1 | B | 1/1 | 0.22 | 15.2 | B | 1/1 | 0.29 | 33.5 | C | 1/2 | 0.26 | 16.5 | B | 1/1 | 0.25 | 15.4 | B | 1/1 | 0.32 | 33.4 | C | 1/2 |
| D'Amante Drive WB TH | 0.11 | 2.5 | A | 1/1 | -- | -- | -- | -- | -- | -- | -- | -- | 0.12 | 2.6 | A | 1/1 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | 0.26 | 5.1 | A | 1/2 | 0.19 | 3.2 | A | 1/2 | -- | -- | -- | -- | 0.28 | 5.1 | A | 1/2 | 0.21 | 3.3 | A | 1/2 |
| Triangle Park Drive NEB LT | 0.21 | 16.1 | B | 1/1 | -- | -- | -- | -- | -- | -- | -- | -- | 0.23 | 16.4 | B | 1/1 | -- | -- | -- | -- | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | 0.17 | 11.5 | B | 1/2 | 0.30 | 31.2 | C | 1/3 | -- | -- | -- | -- | 0.19 | 11.7 | B | 1/2 | 0.33 | 31.5 | C | 1/3 |
| Triangle Park Drive NEB RT | 0.03 | 8.0 | A | 0/1 | 0.03 | 4.8 | A | 0/1 | 0.03 | 19.2 | B | 0/1 | 0.03 | 8.2 | A | 0/1 | 0.03 | 4.9 | A | 0/1 | 0.03 | 19.0 | B | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | 0.23 | 11.7 | B | 1/2 | 0.40 | 32.2 | C | 2/3 | -- | -- | -- | -- | 0.23 | 12.0 | B | 1/2 | 0.40 | 32.2 | C | 2/3 |
| Project site driveway SWB RT | -- | -- | -- | -- | 0.02 | 10.1 | A | 0/0 | 0.02 | 6.9 | A | 0/0 | -- | -- | -- | -- | 0.02 | 10.0 | A | 0/0 | 0.02 | 7.0 | A | 0/0 |
| **Overall** | **--** | **8.1** | **A** | **--** | **--** | **9.1** | **A** | **--** | **--** | **12.0** | **B** | **--** | **--** | **8.1** | **A** | **--** | **--** | **9.2** | **A** | **--** | **--** | **12.2** | **B** | **--** |
| *Weekday Evening:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT/TH/RT | -- | -- | -- | -- | 0.14 | 8.8 | A | 1/1 | 0.16 | 6.2 | A | 1/1 | -- | -- | -- | -- | 0.15 | 8.9 | A | 1/1 | 0.16 | 5.9 | A | 1/1 |
| D'Amante Drive EB TH/RT | 0.20 | 7.0 | A | 1/2 | 0.28 | 8.8 | A | 2/3 | 0.32 | 6.6 | A | 1/3 | 0.23 | 7.3 | A | 1/2 | 0.32 | 8.9 | A | 2/3 | 0.35 | 6.5 | A | 1/3 |
| D'Amante Drive WB LT | 0.31 | 33.4 | C | 1/3 | 0.31 | 33.4 | C | 1/3 | 0.29 | 24.5 | C | 1/2 | 0.33 | 33.4 | C | 2/3 | 0.34 | 33.7 | C | 2/3 | 0.32 | 24.7 | C | 1/2 |
| D'Amante Drive WB TH | 0.25 | 4.1 | A | 2/4 | -- | -- | -- | -- | -- | -- | -- | -- | 0.28 | 4.5 | A | 2/4 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | 0.34 | 6.7 | A | 3/6 | 0.34 | 8.2 | A | 4/5 | -- | -- | -- | -- | 0.35 | 7.3 | A | 4/7 | 0.37 | 8.7 | A | 4/5 |
| Triangle Park Drive NEB LT | 0.48 | 30.9 | C | 3/4 | -- | -- | -- | -- | -- | -- | -- | -- | 0.51 | 30.7 | C | 3/4 | -- | -- | -- | -- | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | 0.61 | 31.5 | C | 3/5 | 0.55 | 21.5 | C | 2/4 | -- | -- | -- | -- | 0.64 | 31.6 | C | 3/5 | 0.60 | 23.3 | C | 2/5 |
| Triangle Park Drive NEB RT | 0.05 | 17.8 | B | 0/1 | 0.05 | 14.5 | B | 0/1 | 0.05 | 11.3 | B | 0/1 | 0.06 | 17.3 | B | 0/1 | 0.06 | 13.9 | B | 0/1 | 0.06 | 11.5 | B | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | 0.65 | 32.7 | C | 3/5 | 0.59 | 22.8 | C | 2/4 | -- | -- | -- | -- | 0.65 | 32.2 | C | 3/5 | 0.62 | 23.9 | C | 2/5 |
| Project site driveway SWB RT | -- | -- | -- | -- | 0.06 | 10.6 | B | 0/1 | 0.06 | 10.3 | B | 0/0 | -- | -- | -- | -- | 0.06 | 11.2 | B | 0/1 | 0.06 | 10.3 | B | 0/0 |
| **Overall** | **--** | **11.8** | **B** | **--** | **--** | **14.4** | **B** | **--** | **--** | **11.5** | **B** | **--** | **--** | **12.0** | **B** | **--** | **--** | **14.7** | **B** | **--** | **--** | **11.8** | **B** | **--** |
| *Saturday Midday:* | | | | | | | | | | | | | | | | | | | | | | | | |
| D'Amante Drive EB LT/TH/RT | -- | -- | -- | -- | 0.24 | 13.9 | B | 1/2 | 0.25 | 7.7 | A | 1/1 | -- | -- | -- | -- | 0.26 | 14.9 | B | 1/2 | 0.26 | 7.4 | A | 1/1 |
| D'Amante Drive EB TH/RT | 0.23 | 6.8 | A | 1/3 | 0.35 | 13.2 | B | 3/4 | 0.35 | 6.0 | A | 1/1 | 0.27 | 7.5 | A | 2/3 | 0.41 | 14.4 | B | 3/4 | 0.39 | 5.8 | A | 1/1 |
| D'Amante Drive WB LT | 0.43 | 38.2 | D | 2/4 | 0.43 | 38.2 | D | 2/4 | 0.43 | 28.0 | C | 2/3 | 0.46 | 38.2 | D | 2/4 | 0.46 | 38.2 | D | 2/4 | 0.51 | 29.1 | C | 2/4 |
| D'Amante Drive WB TH | 0.25 | 3.6 | A | 2/4 | -- | -- | -- | -- | -- | -- | -- | -- | 0.28 | 3.9 | A | 3/5 | -- | -- | -- | -- | -- | -- | -- | -- |
| D'Amante Drive WB TH/RT | -- | -- | -- | -- | 0.43 | 10.7 | B | 6/9 | 0.43 | 8.1 | A | 4/6 | -- | -- | -- | -- | 0.48 | 12.0 | B | 6/9 | 0.47 | 8.7 | A | 4/7 |
| Triangle Park Drive NEB LT | 0.46 | 36.2 | D | 3/5 | -- | -- | -- | -- | -- | -- | -- | -- | 0.48 | 36.0 | D | 3/5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Triangle Park Drive NEB LT/TH | -- | -- | -- | -- | 0.48 | 26.7 | C | 3/5 | 0.54 | 22.5 | C | 2/4 | -- | -- | -- | -- | 0.50 | 26.0 | C | 3/6 | 0.58 | 23.2 | C | 2/5 |
| Triangle Park Drive NEB RT | 0.03 | 21.5 | C | 0/1 | 0.03 | 12.9 | B | 0/1 | 0.03 | 9.9 | A | 0/1 | 0.04 | 20.8 | C | 0/1 | 0.04 | 12.0 | B | 0/1 | 0.04 | 9.9 | A | 0/1 |
| Project site driveway SWB LT/TH | -- | -- | -- | -- | 0.65 | 31.1 | C | 5/8 | 0.69 | 27.5 | C | 3/6 | -- | -- | -- | -- | 0.63 | 29.7 | C | 4/8 | 0.70 | 27.8 | C | 3/6 |
| Project site driveway SWB RT | -- | -- | -- | -- | 0.07 | 14.7 | B | 0/2 | 0.07 | 11.4 | B | 0/1 | -- | -- | -- | -- | 0.07 | 15.7 | B | 0/2 | 0.07 | 11.3 | B | 0/1 |
| **Overall** | **--** | **12.1** | **B** | **--** | **--** | **17.2** | **B** | **--** | **--** | **12.3** | **B** | **--** | **--** | **12.4** | **B** | **--** | **--** | **17.7** | **B** | **--** | **--** | **12.4** | **B** | **--** |

[a]Volume-to-capacity ratio.
[b]Control (signal) delay per vehicle in seconds.
[c]Level of service.
[d]Queue length in vehicles.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; UT = U-turning movements; LT = left-turning movements; TH = through movements; RT = right-turning movements.

**NH Route 9/D'Amante Drive Traffic Signal Timing Improvements**

Independent of the Project, one or more movements at signalized intersections along the NH Route 9/D'Amante Drive corridor within the study area are currently or are predicted to operate at or over capacity. In addition, the NH Route 9/D'Amante Drive/Old Loudon Road intersection is not currently operating as a part of the coordinated traffic signal system. In an effort to improve traffic operations and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing, phasing and coordination plan for the following intersections subject to receipt of all necessary rights, permits and approvals:

- NH Route 9 at the Walmart driveway
- NH Route 9 at the Patriots Place driveway and the Harbor Freight Tools driveway
- NH Route 9 at the Steeplegate Mall driveway and the Carrier Place driveway
- NH Route 9 at D'Amante Drive and Old Loudon Road
- D'Amante Drive at the West Steeplegate Mall driveway and the Shaw's driveway
- D'Amante Drive at Triangle Park Drive

These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. As can be seen in Table 16, with these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 9 at NH Route 132 and Canterbury Road**

Independent of the Project, one or more movements at the NH Route 9/NH Route 132/ Canterbury Road intersection are currently or are predicted to operate at or over capacity with extended vehicle queuing. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. As can be seen in Table 16, with these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 106 Traffic Signal Timing Improvements**

With the reinstallation of a traffic control signal at the NH Route 106/Steeplegate Mall driveway intersection, it is recommended that the traffic signal be coordinated with the traffic signal at the NH Route 106/D'Amante Drive intersection and that an optimal traffic signal timing, phasing and coordination plan be implemented. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving

60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. As can be seen in Table 16, with these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

**NH Route 106 at Triangle Park Drive**

Independent of the Project, the Triangle Park Drive approach to NH Route 106 is currently operating over capacity during the weekday evening peak-hour and is predicted to operate at or over capacity during the Saturday midday peak-hour under 2025 and 2035 No-Build conditions again, independent of the Project. In an effort to advance potential improvement strategies at this intersection, the Project proponent will undertake an intersection improvement study that will include performing a formal Traffic Signal Warrants Analysis (TSWA) in accordance with the methodology outlined in the MUTCD[30] and evaluating geometric improvements, including the reconfiguration of the intersection as a modern roundabout. Conceptual improvement plans will be prepared for each of the improvement alternatives that are evaluated and preliminary cost estimates will be developed. The improvement study will be provided to the City prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first. Upon selection of a preferred improvement strategy by the City, the Project proponent will contribute a "fair-share" portion of the cost to design and construct the identified improvements defined based on the predicted increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

**NH Route 106 at Pembroke Road and North Pembroke Road**

Independent of the Project, one or more movements at the NH Route 106/Pembroke Road/ North Pembroke Road intersection are currently or are predicted to operate at or over capacity with extended vehicle queuing. In order to improve operating conditions at the intersection and to off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing and phasing plan. These improvements will be completed prior to the issuance of a Certificate of Occupancy for the residential component of the Project or the Costco, whichever occurs first, subject to receipt of all necessary rights, permits and approvals. The traffic signal timing will be reevaluated and adjusted as necessary at the following intervals: upon achieving 60 percent occupancy of the residential component the Project (360 residential units) and within six months of the issuance of a Certificate of Occupancy for Costco. As can be seen in Table 16, with these improvements, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

[30]Federal Highway Administration, op. cit. 3.

**Transportation Demand Management**

Public transportation services are provided within the study area by Concord Area Transit (CAT) and are accessible at the Project site. CAT operates fixed route bus service along NH Route 9 and D'Amante Drive by way of the Heights Route, with one stop located within the Project site and two (2) stops located along D'Amante Drive proximate to the Project site. CAT also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA). In an effort to encourage the use of alternative modes of transportation to single occupancy vehicles (SOVs), the following Transportation Demand Management (TDM) measures will be implemented as a part of the Project:

- A transportation coordinator will be designated for the Project to coordinate the elements of the TDM program;
- Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents and employees of the Project;
- A "welcome packet" will be provided to new residents and employees detailing available public transportation services, bicycle and walking alternatives, and commuter options available;
- Work-at-home accommodations will be provided to support telecommuting by residents of the Project that make take the form of a business office, meeting space and a collaboration area within the amenities area;
- Commercial tenants will be encouraged to offer specific amenities to discourage off-site trips which may include: including providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; on-site dry cleaning pick-up; and other such measures to reduce overall traffic volumes and travel during peak-traffic-volume periods;
- Pedestrian accommodations will be incorporated into the Project, and will include ADA-compliant wheelchair ramps at all pedestrian crossings that are to be constructed as a part of the Project and sidewalk connections to the existing sidewalks along NH Route 9 and D'Amante Drive; and
- Secure bicycle parking will be provided at appropriate locations within the Project site and will include weather protected bicycle parking.

In addition, the Project proponent will coordinate with CAT to design and locate a central bus stop (or stops) within the Project site that will include a bus pull-out and a shelter.

With implementation of the aforementioned recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing transportation system.